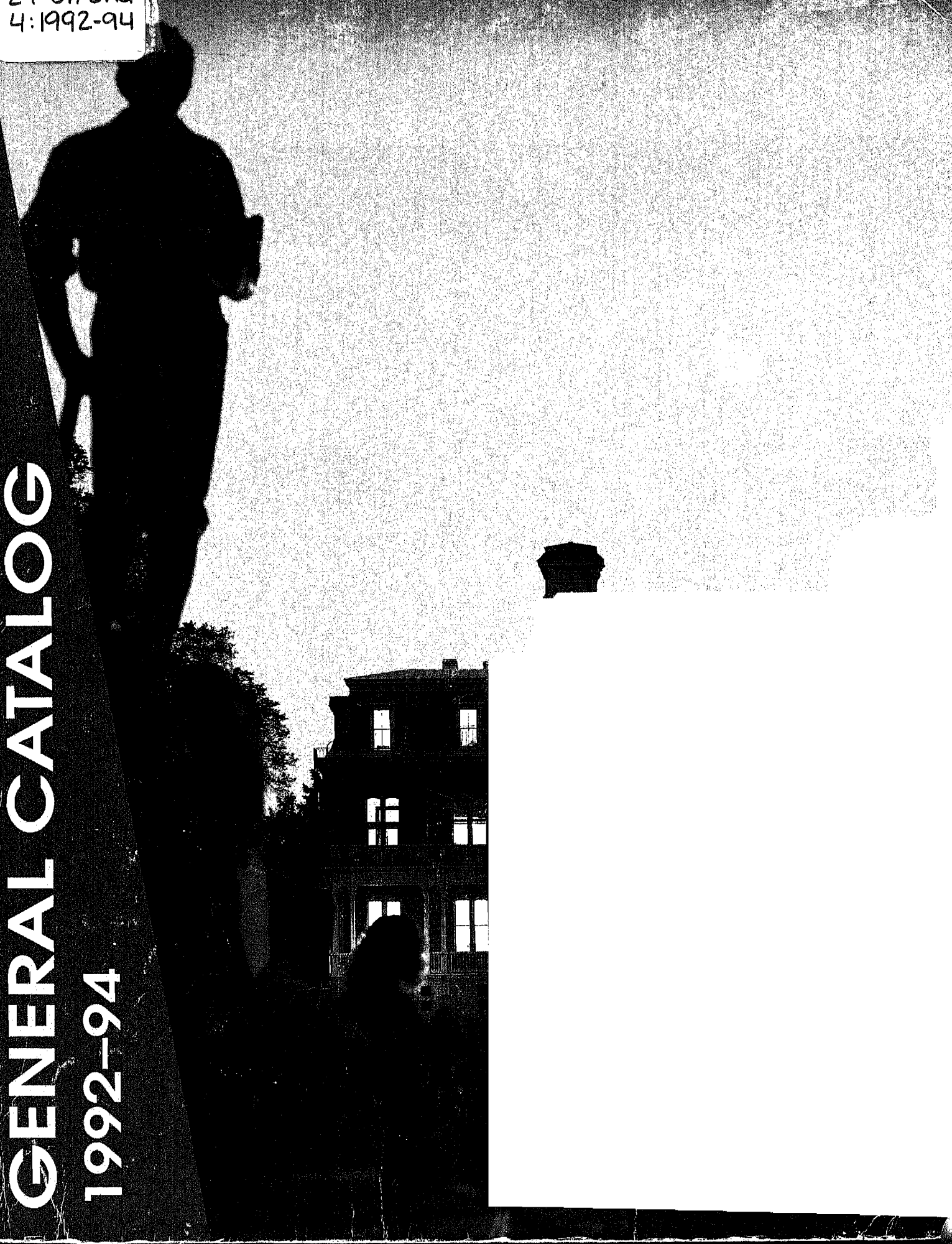

GENERAL CATALOG 1992–94

UNIVERSITY OF NEVADA RENO

1992-94 CATALOG

Agriculture

Arts and Science

Business

Education

Engineering

Human and Community Sciences

Journalism

Medicine

Mining

Nursing

Graduate Studies

Catalog Note:

The 1992-94 general catalog covers a two-year period. The university is a dynamic environment. Curricular and policy changes occur on a daily basis. It is the responsibility of the student to verify specific policy considerations with the respective dean. An addendum to this catalog will be published in July 1993.

On the cover:

The John W. Mackay statue faces south toward Morrill Hall, the first building erected on the University of Nevada, Reno campus. The Mackay statue was designed by sculptor Gutzon Borglum, who created the famed Mount Rushmore memorial. Both Morrill Hall and the statue are landmarks on the university's tree-lined quadrangle, which is listed on the National Register of Historic Places.

Photo credit: Vance Fox

Contents

University Calendar

Fall Semester 1992

Independence Day[1] ..... Friday-Saturday, July 3-4
Final date for filing:
application for admission;
application for readmission following suspension;
returning student application for registration materials;
application for resident fees (if applicable)[3] ..... Friday, July 3
Fall graduation applications filed
with department ..... Monday, Aug. 17
Residence halls open ..... Friday, Aug. 21
New Student Convocation ..... Monday, Aug. 24
Instruction begins ..... Monday, Aug. 24
Final date for late registration
and addition of courses ..... Tuesday, Sept. 1
Labor Day[1] ..... Monday, Sept. 7
Applications for graduation filed
with respective dean ..... Friday, Sept. 11
Homecoming ..... Saturday, Oct. 10
Columbus Day[1] ..... Monday, Oct. 12
Final date for dropping classes ..... Friday, Oct. 16
Nevada Day[1] ..... Friday-Saturday, Oct. 30-31
Final date for filing graduate final
oral examination reports ..... Tuesday, Nov. 10
Veterans Day[1] ..... Wednesday, Nov. 11
Final date for filing approved thesis
or dissertation with Graduate School ..... Wednesday, Nov. 18
Thanksgiving Day[1] ..... Thursday, Nov. 26
Family Day[1] ..... Friday, Nov. 27
Prep day for final exams[2] ..... Wednesday, Dec. 9
Final week schedule begins ..... Thursday, Dec. 10
Instruction ends ..... Wednesday, Dec. 16
Final grades filed with Office of Admissions
and Records by 9 a.m. Semester ends[3] ..... Friday, Dec. 18
Christmas Day/Holiday[1] ..... Friday, Dec. 25

Spring Semester 1993

Final date for filing: application for admission;
application for readmission following suspension;
returning student application for registration materials;
application for resident fees
(if applicable) ..... Tuesday, Dec. 1, 1992
New Year's Day Holiday[1] ..... Friday, Jan. 1
Residence halls open ..... Sunday, Jan. 17
Martin Luther King Jr. Day[1] ..... Monday, Jan. 18
Instruction begins ..... Tuesday, Jan. 19
Spring graduation applications filed
with department ..... Tuesday, Jan. 21
Final date for late registration
and addition of courses ..... Wednesday, Jan. 27
Applications for graduation filed
with respective dean ..... Friday, Feb. 5
President's Day[1] ..... Monday, Feb. 15
Final date for dropping classes ..... Monday, March 15
Spring break[2] ..... Saturday-Sunday, March 20-28
Final date for filing graduate final oral
examination reports ..... Monday, April 19
Final date for filing approved thesis
or dissertation with Graduate School ..... Monday, April 26
Mackay Week ..... Monday-Saturday, April 26-May 1
Summer graduation applications
filed with department ..... Friday, April 30
Prep day for final exams[2] ..... Wednesday, May 5
Final week schedule begins ..... Thursday, May 6
Applications for graduation filed with
respective dean ..... Friday, May 7
Honoring the Best ..... Wednesday, May 12
Instruction ends ..... Wednesday, May 12
Final grades filed with Office of Admissions
and Records by 9 a.m. Semester ends[3] ..... Friday, May 14
Commencement ..... Saturday, May 15
Memorial Day[1] ..... Monday, May 31
Independence Day[1] ..... Sunday-Monday, July 4-5

[1] A legal holiday. Offices are closed. No classes.
[2] Offices are open. No classes.
[3] Subject to change. Please consult the schedule of classes.

Summer Session 1993

Mini-term instruction begins;
last day to receive a full refund ..... Monday, May 17
Registration for mini-term closes. Last day to add classes or
change from audit to credit, letter grade to satisfactory/
unsatisfactory (S/U), or from
S/U to letter grade–5 p.m. ..... Tuesday, May 18
Last day to drop mini-term classes and receive
a 50 percent refund ..... Wednesday, May 19
Last day to drop mini-term classes, change from
credit to audit, or withdraw from the
university without a grade being recorded ..... Friday, May 21
Application for August graduation due
in Office of Admissions and Records.
Late fee applies after this date ..... Friday, May 28
Memorial Day[1] ..... Monday, May 31
Mini-term instruction ends ..... Friday, June 4

First-term instruction begins;
last day to receive a full refund ..... Monday, June 7
Final grades for mini-term due in Office of
Admissions and Records–5 p.m. ..... Monday, June 7
Late registration for first term closes.
Last day to add classes or change from
audit to credit, letter grade to S/U,
or S/U to letter grad–5 p.m. ..... Wednesday, June 9
Last day to drop first term classes and receive
a 50 percent refund ..... Friday, June 11
Last day to drop first-term classes,
change from credit to audit, or withdraw from
the university without a grade
being recorded ..... Friday, June 18
Independence Day[1] ..... Sunday-Monday, July 4-5
First-term instruction ends ..... Friday, July 9

Second-term instruction begins;
last day to receive a full refund ..... Monday, July 12
Final grades for first term due in Office of
Admissions and Records–5 p.m. ..... Monday, July 12
Late registration for second term closes.
Last day to add classes or change from
audit to credit, letter grade to S/U,
or S/U to letter grade by 5 p.m. ..... Wednesday, July 14

Last day to drop second-term classes and receive a 50 percent refund ..... Friday, July 16
Final date for filing graduate final oral examination reports ..... Friday, July 23
Last day to drop second-term classes, change from credit to audit, or withdraw from the university without a grade being recorded ..... Friday, July 23
Final date for filing approved thesis or dissertation with Graduate School ..... Friday, Aug. 6
Second-term instruction ends ..... Thursday, Aug. 12
Final grades for second term due in Office of Admissions and Records by 5 p.m.; Summer Session ends ..... Friday, Aug. 13

Note: Consult Summer Session Class Schedule for registration information.

[1] A legal holiday. No classes. Offices closed.

Fall Semester 1993

Final date for filing: application for admission; application for readmission following suspension; returning student application for registration materials; application for resident fees (if applicable)[3] ..... Friday, July 2
Independence Day[1] ..... Sunday-Monday, July 4-5
Fall graduation applications filed with department ..... Monday, Aug. 16
Residence halls open ..... Friday, Aug. 20
New Student Convocation ..... Monday, Aug. 23
Instruction begins ..... Monday, Aug. 23
Final date for late registration and addition of courses ..... Wednesday, Sept. 1
Labor Day[1] ..... Monday, Sept. 6
Applications for graduation filed with respective dean ..... Friday, Sept. 10
Final date for dropping classes ..... Monday, Oct. 18
Homecoming ..... Saturday, Oct. 23
Nevada Day[1] ..... Sunday-Monday, Oct. 31-Nov. 1
Final date for filing graduate final oral examination reports ..... Wednesday, Nov. 10
Veterans Day[1] ..... Thursday, Nov. 11
Final date for filing approved thesis or dissertation with Graduate School ..... Wednesday, Nov. 17
Thanksgiving Day[1] ..... Thursday, Nov. 25
Family Day[1] ..... Friday, Nov. 26
Prep day for final exams[2] ..... Wednesday, Dec. 8
Final week schedule begins ..... Thursday, Dec. 9
Instruction ends ..... Wednesday, Dec. 15
Final grades filed with Office of Admissions and Records by 9 a.m. Semester ends[3] ..... Friday, Dec. 17
Christmas Day/Holiday[1] ..... Friday-Saturday, Dec. 24-25

Spring Semester 1994

Final date for filing: application for admission; application for readmission following suspension; returning student application for registration materials; application for resident fees (if applicable) ..... Wednesday, Dec. 1, 1993
New Year's Day Holiday[1] ..... Friday-Saturday, Dec. 31-Jan. 1
Residence halls open ..... Sunday, Jan. 16
Martin Luther King Jr. Day[1] ..... Monday, Jan. 17
Instruction begins ..... Tuesday, Jan. 18
Spring graduation applications filed with department ..... Tuesday, Jan. 18
Final date for late registration and addition of courses ..... Wednesday, Jan. 26
Applications for graduation filed with respective dean ..... Friday, Feb. 4
President's Day[1] ..... Monday, Feb. 21
Final date for dropping classes ..... Monday, March 14
Spring break[2] ..... Saturday-Sunday, April 2-10
Final date for filing graduate final oral examination reports ..... Monday, April 18
Final date for filing approved thesis or dissertation with Graduate School ..... Monday, April 25
Mackay Week ..... Monday-Saturday, April 25-30
Summer applications for graduation filed with department ..... Friday, April 29
Prep day for final exams[2] ..... Wednesday, May 4
Final week schedule begins ..... Thursday, May 5
Applications for graduation filed with respective dean ..... Friday, May 6
Honoring the Best ..... Wednesday, May 11
Instruction ends ..... Wednesday, May 11
Final grades filed with Office of Admissions and Records by 9 a.m. Semester ends[3] ..... Friday, May 13
Commencement ..... Saturday, May 14
Memorial Day[1] ..... Monday, May 30
Independence Day[1] ..... Monday, July 4

[1] A legal holiday. Offices are closed. No classes.
[2] Offices are open. No classes.
[3] Subject to change. Please consult the schedule of classes.

Summer Session 1994

Mini-term instruction begins; last day to receive a full refund ..... Monday, May 16
Registration for mini-term closes. Last day to add classes or change from audit to credit; letter grade to S/U, or S/U to letter grade by 5 p.m. ..... Tuesday, May 17
Last day to drop mini-term classes and receive a 50 percent refund ..... Wednesday, May 18
Last day to drop mini-term classes, change from credit to audit, or withdraw from the university without a grade being recorded ..... Friday, May 20
Memorial Day[1] ..... Monday, May 30
Mini-term instruction ends ..... Friday, June 3

First-term instruction begins; last day to receive a full refund ..... Monday, June 6
Final grades for mini-term due in Office of Admissions and Records by 5 p.m. ..... Monday, June 6
Late registration for first term closes. Last day to add classes or change from audit to credit, letter grade to S/U, or S/U to letter grade by 5 p.m. ..... Wednesday, June 8
Last day to drop first-term classes and receive a 50 percent refund ..... Friday, June 10
Last day to drop first-term classes, change from credit to audit, or withdraw from the university without a grade being recorded ..... Friday, June 17
Independence Day[1] ..... Monday, July 4
First-term instruction ends ..... Friday, July 8

Second-term instruction begins; last day to receive a full refund ..... Monday, July 11
Final grades for first term due in Office of Admissions and Records by 5 p.m. ..... Monday, July 11
Late registration for second term closes. Last day to add classes or change from audit to credit, letter grade to S/U, or S/U to letter grade by 5 p.m. ..... Wednesday, July 13
Last day to drop second-term classes and receive a 50 percent refund ..... Friday, July 15

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ote: Consult Summer Session Class Schedule for registration formation.

A legal holiday. No classes. Offices closed.

ummer Session

The Summer Session Office annually offers a variety of summer ourses, worshops and institutes, ranging from a period of one to 10 weeks. In addition to the two, five-week instructional terms, a three-week mini-term period for both on-campus and field study is offered. The mini-term session begins following the close of the spring semester.

Through the Summer Session program, graduate and undergraduate students have maximum flexibility to streamline their study programs and progress toward graduation. Teachers and administrators may complete certification requirements or gain additional knowledge or training during the program. Nondegree students and interested adults may take part in special enrichment programs, lectures and seminars. Instruction is provided by university faculty and by nationally-known visiting professors and speakers.

The Summer Session Office uses a single fee schedule for its programs and does not charge out-of-state tuition.

Students who are enrolling in undergraduate courses in the summer are not required to gain official admission. Students who plan to enroll in graduate courses *must be officially admitted* to the university prior to registration. The Summer Session student must be at least 15 years old and must have the ability to do university work.

For further information, or to obtain a Summer Session class schedule, call 784-4046.

Degrees Offered

The University of Nevada, Reno is structured on a two-semester system. The average credit load for undergraduates is 15 credits per semester. We offer more than 200 classes after 5 p.m., so you can tailor your curriculum to your schedule if you are working or involved in extracurricular activities.

Bachelor's	Master's	Doctorate	
•			*Accounting
•			Agribusiness
	•		Agricultural Economics
•			Agricultural Education
•	•		Animal Science
•	•	•	Anthropology
•			Art
	•	•	Atmospheric Science
		•	Basque Studies
•	•	•	Biochemistry (AG or MED)
•	•		Biology
	•		Business Administration
	•	•	Cellular and Molecular Biology (AG, AS, or MED)
	•	•	Cellular and Molecular Pharmacology and Physiology
		•	Chemical Physics
•			Chemical Engineering
•	•	•	Chemistry
•	•	•	Civil Engineering
•			Clinical Laboratory Science
•	•		Computer Science
•			*Computer Information Systems
	•	•	Counseling and Educational Psychology
•			*Criminal Justice
		•	Curriculum and Instruction
		•	Ecology, Evolution, and Conservation Biology
•	•		*Economics
	•	•	Educational Leadership
•	•	•	Electrical Engineering
•	•		Elementary Education
•			Elementary/Special Education
•			Engineering Physics
•	•	•	*English
	•		Family Nurse Practitioner
•			*Finance
	•		Foreign Language and Literature (French, German or Spanish)
•			French
•			General Studies
	•	•	Geochemistry
•			Geography
•	•		Geological Engineering
•	•		Geology
		•	Geology and Related Earth Sciences
•	•	•	Geophysics
•			German
•			Health Education
•	•	•	*History
•	•		Human Development and Family Studies
•			Human Ecology
	•	•	Hydrology and Hydrogeology (AG, EN, or MN)
	•		Integrated Pest Management
•			Interior Design
•			International Affairs
•	•		Journalism

Bachelor's	Master's	Doctorate	
	•		Judicial Studies (for sitting judges)
	•		Land Use Planning (AG, AS, or EN)
•			*Logistics Management
•			*Management
•			*Marketing
•			Materials Science and Engineering
•	•		Mathematics
•	•	•	Mechanical Engineering
•			Medical Sciences (Med class only)
		•	Medicine (M.D. and M.D./Ph.D.)
•	•	•	Metallurgical Engineering
•	•		Mining Engineering
•	•		Music
•			Music Applied
•			Music Education
•	•		Nursing
•	•		Nutrition
•	•		*Philosophy
•	•		Physical Education
•	•	•	Physics
	•		Plant Science
•	•	•	*Political Science
•			Predentistry
•			Premedicine
•			Prephysical Therapy
•	•	•	*Psychology
	•		Public Administration
•			Recreation
•	•		Resource Management
•	•		Secondary Education (Major is in approved list of teaching fields.)
•		•	*Social Psychology
•	•		Social Work
•	•		*Sociology
•			Spanish
•	•	•	Special Education
•	•		*Speech Communication
•			Speech Pathology
	•		Speech Pathology and Audiology
	•		Teaching of English
	•		Teaching of English as a Second Language (AS, ED)
	•		Teaching of Mathematics
•			Theatre
•			Veterinary Science

* Note: law school preparation may be obtained in starred (*) majors.

Professional Degrees:

Construction Engineering

Geological Engineering

Metallurgical Engineering

Mining Engineering

Education Specialist Degree:

Counseling and Educational Psychology

Curriculum and Instruction

Educational Leadership

Policy Statements

Legal Notice

The University of Nevada, Reno General Catalog describes anticipated programs, courses and requirements, but these are subject to modification at any time to accommodate changes in university resources or educational plans. The catalog does not constitute a contractual commitment that the university will offer all the courses or programs described. The university reserves the right to eliminate, cancel, reduce or phase out courses, programs and requirements for financial, curricular or programmatic reasons, to limit enrollments in specific programs and courses, to change fees during the student's period of study, and to require a student to withdraw from the institution for cause at any time.

Affirmative Action/Equal Opportunity

The University of Nevada, Reno is an Equal Opportunity Employer and does not discriminate based on race, creed, color, sex, age, national origin, handicaps, or veteran status in any program or activity it operates, in compliance with federal, state and local nondiscrimination laws and regulations. The affirmative action officer is responsible for coordinating all compliance efforts, for investigating complaints and for receiving grievances from students in matters dealing with discrimination. Those people who have questions or complaints may call the affirmative action officer at 784-1547 or 784-4300. The university's Affirmative Action Office is located in Room 209, Clark Administration.

Anti-discrimination Policy

The University of Nevada, Reno does not discriminate against faculty, students and staff on the basis of race, color, national origin, sex, sexual orientation, handicap, religion, age or veteran status.

Minority Retention and Recruitment Policy

The University of Nevada, Reno strongly supports the offering of programs and activities on a campus-wide basis that will promote diversity and enhance opportunities for minorities in higher education. The university is committed to provide services to meet student needs, to strengthen the system of financial support based on need and academic achievement, to hire minority faculty and staff, to develop a curriculum which will foster the growth and appreciation of multiculturalism on campus, and to develop an institutional enviroment in which all individuals, regardless of backgrounds, have the opportunity to flourish.

International Student Visas

The university is authorized under federal law to enroll nonimmigrant alien students.

University Terminology

'N—Associated Students of the University of Nevada.

demic Status—Determined by regulations governing good standing, probation, suspension and disqualification.

ission—Formal application and acceptance as a regular student in a degree program. Students are admitted to degree programs fall & spring semesters only.

iser, advisee—The adviser is the faculty member assigned by the university to assist each student in planning the proper academic program. The student is called the adviser's "advisee."

it—To take a course without credit and grade.

equisite—A course required to be taken simultaneously with another.

rse—A particular subject being studied—for example, a course in English.

dit—The numerical reward received for completing a course. It is described in semester credit hours, and is defined as three hours of work per week for one semester. Usually this work is made up of one period in class plus two hours of preparation for lecture-seminar classes, or three hours of laboratory classes.

riculum—The total group of courses required for a degree.

artment—A part of a college that offers instruction in a specific area of knowledge.

qualification—The involuntary separation of a student from the university for unsatisfactory academic performance following second academic suspension.

acurricular—Those activities that are part of student life, but are not part of the regular course of study, such as debate, dramatics and athletics.

—Per credit charges for courses.

hman on Probation—A regular, undergraduate Nevada resident who does not satisfy the freshman admission requirements.

A—Grade-point average.

A—Graduate Student Association.

d Standing—A student who is not on probation, suspension or disqualification.

de Points—Grades are evaluated in terms of quality points. For each credit of A completed, four grade points are earned; for each credit of B, three grade points are earned; for each credit of C, two grade points are earned; for each credit of D, one grade point is earned; and for each credit of F, zero grade points. In order to be graduated, a student must have an average of two grade points for each credit attempted for regular letter grades, including all courses that are failed or repeated.

duate Special—A post-baccalaureate, nondegree student not admitted to advanced degree study.

duate Standing—An advanced-degree-seeking student officially admitted to graduate study.

duate Study—Work beyond the bachelor's degree, usually toward a master's or doctoral degree.

Card—Identification card.

mplete—The "I" symbol is not a grade. It is a mark that is given when a student has been performing satisfactory work, but, for a reason beyond the student's control, has been unable to complete the required work for the course. Incomplete grades revert to grades of "F" if not made up within one regular semester.

International Student—An individual who is attending the university on a student visa.

Load—The total credits for which a student is registered in any registration period. The normal undergraduate load is 16 or 17 credits, also called a program of study.

Major—The subject or field of study in which a student plans to specialize. A plan to specialize in mathematics would be to major in that field. To specialize in two such subjects is called a double major. In some curricula, the major with related areas of study is called a field of concentration.

Matriculation--Fall or spring semester of admission to a degree program. Classification prior to the semester of admission as a regular student is nondegree.

Nondegree Student—An individual who is not officially admitted to the university. Registration for courses is limited.

Prerequisite—The preliminary requirement that must be met before a certain course may be taken.

Probation—A warning status resulting from the student's unsatisfactory academic achievement or conduct.

Registration—The act of enrolling in classes, usually at the beginning of a semester. Registration includes choosing classes with the help of the adviser, completing all registration forms, paying all fees and filing proper forms with the university registrar.

Regular Student—A degree-seeking student who is officially admitted to the university.

Required Subjects—Those subjects that are prescribed for the completion of a particular program. The student, after consulting the adviser, may choose elective subjects; the required subjects are determined by the college.

Resident Alien—A student attending the university as a permanent immigrant who has not attained U.S. citizenship.

Schedule, Class—The list of courses and course sections offered, including the names of the teachers, the days, hours and locations of classes.

Schedule, Student—A listing of the courses that the student takes each semester.

Semester—75 instructional days.

Special Fees— Additional fees required such as lab fees.

Suspension—The involuntary separation of a student from the university for unsatisfactory academic achievement or conduct.

Transcript—A certified copy of the student's permanent academic record on file in the Office of Admissions and Records. The transcript lists each course that the student has taken and the final grade received.

Tuition—An additional charge for regular instruction required only of nonresident students.

Undergraduate—A student who has not yet obtained the bachelor's degree.

Withdrawal—The act of officially leaving the university. Students may also drop individual courses without withdrawing from the university.

Jniversity of Nevada, Reno

here to Call: 784-INFO
here to Write: University of Nevada, Reno
Reno, NV 89557

The University of Nevada, Reno, one of seven institutions thin the University and Community College System of Nevada, located in the city of Reno in northwestern Nevada.

The Desert Research Institute (DRI), a UCCSN unit affiliated th the University of Nevada, Reno, has offices at its north Reno e and at the Stead facility of the university, about eight miles rth of the main campus. It also has special branch operations in uthern Nevada.

bout the University

Established in 1864, the year of the state's admission into the nion, the university first offered classes in 1874 in Elko as one of the re preparatory higher schools in the intermountain region. In 1885, e university was moved to Reno, near the center of the state's pulation, and it has flourished since its first year of formal college-vel study in 1887.

The University of Nevada, Reno offers an opportunity for higher ducation to qualified applicants, regardless of race, color, creed, ndicap or sex.

Within the university, 11 colleges offer undergraduate and graduate ajors. Graduate-level training and research, including a number of octoral-level programs, furthers the university's mission to create holarly activity.

The university provides students the opportunity for study inside d outside the classroom. It is an institution that continues to develop ew ways of thinking and preparing for the future.

he Campus and Surrounding Area

The university is an integral part of the thriving Reno-Sparks etropolitan area, home to approximately 250,000 people. Its 200-re campus of rolling hills features a blend of ivy-covered build-gs, sweeping lawns and functional, progressive architecture. The cademic atmosphere is filled with rich surroundings for the ltural and intellectual development of the student.

Beyond the university, the Reno-Sparks area lies prominently an attractive natural setting. Bounded on the west by the majestic erra Nevada mountain range and on the east by the rolling basin nd range province, Reno-Sparks benefits from a comfortable imate. Marked by generally cool and dry weather, the area is a aven for those who love the four seasons.

Recreational activities are easy to find, as students can drive to e famed ski areas of Lake Tahoe and the historic Western realm Virginia City all in one day.

he University: Missions and Goals

The University of Nevada, Reno is a constitutionally estab-shed, land-grant university. The university served the state of evada as its only state-supported institution of higher education r almost 75 years. In that historical role, it has emerged as a octoral-granting university which focuses its resources on doing select number of things well. The University of Nevada, Reno ffers a wide range of undergraduate and graduate programs, cluding selected doctoral and professional studies, which em-nasize those programs and activities which best serve the needs the state, region and nation. By fostering creative and scholarly tivity, it encourages and supports faculty research and applica-on of that research to state and national problems. In performing s mission, the University of Nevada, Reno resolves to:

Offer high-quality degree programs in the arts, sciences and in selected professions.

Emphasize undergraduate, graduate and professional programs which meet the needs of the citizens of Nevada.

Maintain a select number of doctoral and organized research programs.

Offer a range of applied, interdisciplinary and career-oriented programs at both the undergraduate and graduate levels.

Provide community and public service programs through continuing education and cooperative extension.

Contribute to the advancement and dissemination of knowledge that will help to improve society at the state, regional and national levels.

The University of Nevada, Reno, in identifying its goals, has selected those which would be most supportive of its mission:

Continually improve the quality of teaching, research and public service activities.

- Recruit, develop and retain a faculty and staff of the highest caliber.
- Develop and maintain a graduate faculty under whose direction research, doctoral and professional programs will gain national stature.
- Ensure that the university's library, computing center and telecommunications systems will be able to provide the resources attendant to the needs of the instructional and research programs.
- Identify and support centers of excellence.
- Enhance the research and public service capabilities of the university through increased collaboration with both the public and the private sectors, and by providing assistance to the state and local governments.

Develop a curriculum that is sensitive to change, but which places a special value on a liberal arts foundation.

- Assure that all students, either upon entering the university, or upon admission to degree programs, have acquired basic verbal, oral, computational, analytical and computer skills.
- Provide all students with adequate and proper academic and career advising.
- Provide an opportunity for adults to upgrade their educational and professional backgrounds through continuing education courses and programs

Provide an institutional environment supportive of the internal quality of campus life.

- Offer a full range of student and support services which complement the instructional process.
- Develop and maintain programs which recognize the valuable human resource provided by our students, faculty and staff.
- Maintain and utilize the physical plant at a level which enhances the programs and activities of the university.

Utilize resources efficiently and effectively through prioritized allocations and reallocations.

- Develop strategic planning processes, involving the entire university community, which can anticipate future opportunities and problems.
- Provide the flexibility to respond to new opportunities.

Develop the means to obtain funds from public and private sources that will provide the support required to achieve these goals.

- Maximize the use of private funds to provide a margin of excellence in designated program areas.

Please note: The "Mission Statement and Goals" is currently under review as the university approaches the 21st century. The following is a probable addition to the mission statement, which will be submitted to the UCCSN Board of Regents for approval.

In performing its mission, the university resolves to:

Reflect and respect the pattern of gender as well as the rich ethnic and cultural diversity of the citizens of Nevada in its academic programs and in the composition of its faculty, administration and student body.

Degrees and Majors

The university offers assorted major fields of study, leading to bachelor's and advanced degrees through the academic departments in the various schools and colleges.

Majors are offered in the colleges and schools of agriculture, arts and sciences, business administration, education, engineering, human and community sciences, journalism, medicine , mining, nursing and graduate studies. For a complete list of university majors and degree offerings, see page 6.

Accreditation

The University of Nevada, Reno is accredited by the Commission on Colleges of the Northwest Association, recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education. The university has been accredited since 1938.

In addition to the Northwest Association institutional accreditation, there are numerous university programs which are accredited by their national professional accrediting organizations. These specialized accrediting organizations, which are recognized by the Council on Postsecondary Accreditation, include:

American Assembly of Collegiate Schools of Business
American Chemical Society
Accrediting Council on Education in Journalism and Mass Communication
American Psychological Association
American Home Economics Association
Council on Social Work Education
Liaison Committee on Medical Education
National Accreditation Agency for Clinical Laboratory Sciences
National Association of Schools of Music
National Council for Accreditation of Teacher Education
National League for Nursing

In addition, selected programs in engineering and mines are accredited by the Accreditation Board for Engineering and Technology. The university is also a member of many national professional associations.

General Information

Where to write:

(name)
(department)
University of Nevada, Reno
Reno, NV 89557

Where to call: (area code 702)

General Information 784-INFO
Directory Assistance 784-1110

Academic Advising Services 784-1537
Academic Coordinator for Athletes 784-1537
Academic Skills Center 784-6801
Admissions and Records 784-6865
FAX number 784-4283
Adult/Re-entry Programs 784-6116
Affirmative Action Office 784-4300
ASUN Office 784-6589
Bookstore 784-6597
Campus Tours 784-4865
Career Development 784-4678
Cashier 784-6915
Continuing Education 784-4046
Counseling Center 784-4648
Disabled Student Services 784-6801
Educational Opportunity Program 784-6801
Food Services 784-6143
Greek Organizations
(fraternities and sororities) 784-4306
Health Career Advisement 784-4939
Health Service 784-6598
Housing 784-6107
International Student Adviser 784-6874
Jot Travis Student Union 784-6505
Judicial Affairs 784-4306
Library Information 784-6508
Mediation Center 784-4177
Minority Student Affairs 784-4936
National Student Exchange 784-6116
New Student Programs 784-6116
Orientation Information 784-6116
Outreach Services
(campus tours) 784-4865
Parking 784-4654
Police Services 784-4013
Registration Information 784-6865
Scholarships and Awards 784-4666
Schools and Colleges (dean's offices)
Agriculture 784-6611
Arts and Science 784-6155
Business Administration 784-4912
Continuing Education 784-4046
Education 784-6905
Engineering 784-6925
Graduate School 784-6869
Human and Community Sciences 784-6975
Journalism 784-6531
Medicine 784-6001
Mines 784-6987
Nursing 784-6841
Sierra Nevada Job Corps Center 677-3500
Special Programs and
Academic Skills Center 784-6801
Student Development Programs 784-6116
Student Employment 784-4666
Student Financial Services 784-4666
Student Organizations and Activities 784-6589
Substance Abuse Prevention Programs 784-4648
Summer Session 784-4046
Testing Services 784-4638
Transfer Student Adviser 784-1537
Tutorial Program 784-6801
Upward Bound 784-4978
Veterans Assistance 784-4664
Women's Resource Center 784-4611

Nevada residents outside the Reno/Sparks area can reach the University of Nevada, Reno toll-free by calling 1-800-622-4UNR.

University Research and Services

All of the university's colleges and schools maintain well-equipped laboratories and special facilities in support of instruction and research.

Relics of the past, samples of the present and specimens that may unlock secrets in the future are maintained in the several scientific collections and museums on the Reno campus, primarily in the fields of agriculture, biology and the earth sciences.

The university also operates the Little Valley outdoor laboratory, a gift from Captain George Whittell, which is located in the Sierra Nevada. The tract of land spans approximately four square miles of natural meadow and forest, and is used for the study of both basic and applied problems in the natural sciences.

In addition, a number of public service and research organizations, including federal and state agencies, are located at the university and are operated in cooperation with or as part of the university's programs and facilities.

University and Community College System of Nevada

Computing Services

The system's computing services aid all divisions of the University and Community College System of Nevada, providing computing support for their instructional, research and administrative objectives.

Physical facilities consist of regional centers in Reno and Las Vegas. Available computing platforms include: two IBM mainframes for administrative processing, a Digital VAX 6420, various Sun and Digital services, and an AS/400. A wide range of instructional, research and productivity software is available. Additional computing resources are provided by campus colleges and departments; most campus buildings are connected to the Campus Cable Network, which provides access to all UCCSNCS computers via the statewide NevadaNet and to national/international networks via Internet.

The system's computing services provide its users with a number of benefits, including consultation, documentation, workshops, network assistance and instructional support for faculty. Computing Services also manages the Aquarium Microcomputer Laboratory in Getchell Library, the Faculty Development Computing Laboratory in the Laxalt Mineral Engineering Center and several departmental laboratories. For further information, call 784-1131.

The "UNR Computing Handbook," available free at the university bookstore, provides extensive information on hardware, software, microcomputer laboratories, networks and available services to students and staff at the University of Nevada, Reno.

University of Nevada Press

The University of Nevada Press is a publisher of scholarly books. Established by the Board of Regents in 1961, the press is a public service division of the University and Community College System of Nevada. Its purpose is to make a contribution to the state and to the scholarly community by publishing books dealing with history, government, natural resources, women's studies, Native American studies, ethnic groups and contemporary affairs.

In addition to publishing books of general interest, the press issues seven distinguished series of books: the Max C. Fleischmann Series in Great Basin Natural History, a collection of works dealing with the flora, fauna and natural resources of the region; the Basque Book Series, devoted to the study of Basque culture, history and politics in America and Europe; the Vintage West Series, featuring reprint editions of significant early titles; the Wilbur S. Shepperson History and Humanities Series, analytical studies of important political figures and topics; the Western Literature Series, devoted to the analysis and revival of significant regional authors; the Gambling Series; and the Ethnonationalism in Comparative Perspective Series, featuring works dealing with the ethnonational phenomenon.

Decisions on manuscript publication are made by the Press Editorial Advisory Board, consisting of faculty members from the University of Nevada, Reno, the University of Nevada, Las Vegas and the community colleges. As many as 20 titles are produced each year.

The University of Nevada Press offices, located in the basement of Morrill Hall at the University of Nevada, Reno, are open during regular business hours (8 a.m. to noon and 1 to 5 p.m., Monday through Friday). For more information, call 784-6573, or fax a request to 784-6200.

University of Nevada, Reno Academic Services

Campus Computing Services

In addition to the mainframe computers provided by the UCCSN Computing Services, the university maintains more than 1,000 microcomputers and 12 minicomputers. Campus Computing Services coordinates the planning, acquisition and utilization of these computers, terminals and other computer equipment. It also provides technical advice, consulting, and software and training support to administrators and faculty. For further information, call 784-4637.

Division of Continuing Education

The Division of Continuing Education provides postsecondary educational opportunities for individuals who are interested in furthering their training and preparation in selected areas.

Individuals who are at least 18 years old, or those who can present evidence of high school graduation, may register for a maximum of six credits (or equivalent) per semester as a nondegree undergraduate student in continuing education. In the continuing education program, students may also register for six semester credits per five-week term in Summer Session without being officially admitted to the university.

Continuing Education is comprised of the following departments: independent study, professional development, extension academic programs and summer session. The Division of Continuing Education dean also administers the Office of International Programs and Services and the Sierra Nevada Job Corps Center.

Extension Academic Programs

Educational opportunities are offered at locations throughout northern Nevada to individuals wishing to continue their education on a part-time basis. The Division of Continuing Education organizes academic credit courses and degree programs to meet the needs of individual communities. Classes are held in the evenings, on weekends, or during the summer. Instruction is given

in the communities or by the expanding, electronic distance education system, which allows courses to be offered on campus and in several other locations simultaneously.

Independent Study by Correspondence

Students who are unable to regularly attend classes or those who choose to study independently may enroll in courses offered through correspondence. Numerous college-level courses, as well as a few noncredit courses, are available through this program.

Applications for enrollment in correspondence courses may be made at any time of the year. Students have one year in which to complete the course, but are otherwise allowed to progress at their own pace with limited restrictions. Correspondence courses may be taken for college credit and teacher certification, and may also be taken for vocational advancement or personal improvement. Many correspondence courses for student veterans are approved by the Veterans Administration.

Although it is recommended that students in this program enroll solely for one course at a time, they may simultaneously enroll in a maximum of two courses. Nondegree students may enroll in correspondence courses in addition to the six semester credits (or equivalent) for which they are registered.

Students may apply no more than 60 semester credits in acceptable correspondence courses (completed through a regionally accredited correspondence division in extension or off-campus) toward a bachelor's degree.

For further information, contact the program office at 225 Midby-Byron Judicial Educational Center, or call 784-4652.

Professional Development

The professional development department works closely with the university and business community to provide noncredit conferences, seminars, workshops and certificate programs. These activities are designed to assist Nevada's professionals in a variety of disciplines, to maintain and improve their areas of expertise, and to enhance their career development.

Sierra Nevada Job Corps Center

The Job Corps is a national vocational training program funded by the U.S. Department of Labor. The Sierra Nevada Job Corps Center (SNJCC) provides a comprehensive residential program to prepare youths of all ethnic backgrounds, aged 16 through 24, for meaningful employment and the responsibilities of citizenship. The university's academic departments support the program, which is adminstered by the Division of Continuing Education. For further information, call 677-3500 or contact the SNJCC by writing to P.O. Box 60280, Reno, NV 89506.

Instructional Media Services

Instructional Media Services (IMS) is the educational technology center for the entire campus. The services of IMS are dedicated to assisting faculty and students in the classroom, in research and in public service.

IMS assists the university community in the following areas:

Academic Engineering Services

In this area, IMS provides policy guidance, planning, installation and maintenance for the campus' electronic and computer systems. The Digital Services group supports various microcomputer systems, as well as related cabling for telecommunications and networking. The Engineering group supports campus-wide computer networking (the Campus Cable Network) and all technical needs for classrooms. The RF group supports long-distance, instructional delivery systems (instructional television, graphics and audio) and national public radio (KUNR-FM).

Classroom Services

IMS provides scheduled delivery of media equipment and film library materials to classrooms, and provides training in the use of this equipment. The Classroom Services branch is also responsible for training and assisting faculty and students who have access to permanently-installed media equipment. The branch also makes consultations on incorporating room design with media equipment, and repairs audio-visual equipment.

Instructional Materials Design and Production

IMS has staff and facilities available to provide the following services for production of research and teaching materials: design consultation for all types of media materials; classroom and instructional video taping; professional video production; preparation of instructional slides; on-location photography; scientific and research photography; color computer graphics; desk-top publishing; and audio and video duplication.

Faculty and students may use the facilities for videotape editing and preparing computer graphic materials.

Instructional Telecommunications

IMS provides faculty and students with the capability to directly access electronic resources world wide. The Campus Cable System transmits computer data and video images directly to campus classrooms and offices. Programs transmitted by satellite and instructional films from the university's film library can be received by IMS and sent directly to many classrooms.

UNITE, a sophisticated teleconferencing system that can join 10 telephone connections anywhere in the world, allows for an instructional network spanning as many as nine remote sites. Classes held at the University of Nevada, Reno could be transmitted by television to greater Reno, Carson City, Fallon, or South Lake Tahoe.

In addition, a new computer-based communications system allows faculty and students to send still video pictures and computer images over telephone lines between Reno, Elko and Las Vegas.

KUNR-FM Public Radio

KUNR-FM is licensed to the Board of Regents, but operates as part of Instructional Media Services.

KUNR's signal serves listeners along the eastern Sierra from Susanville to Bishop, Calif., and throughout the Truckee Meadows, Lake Tahoe area and most of northwestern Nevada. The station plays a role in the university's service and outreach mission and provides programs that enhance the academic reach of the institution.

The radio station is affiliated with National Public Radio and American Public Radio. Its format is primarily news and public affairs, classical music, and jazz. On weekends, programming includes a selection of blues and specialty shows, such as "American Radio Company."

KUNR has a small, full-time staff but depends largely on its volunteer program hosts, who come from the university and the community.

International Programs and Services

The Office of International Programs and Services coordinates the campus resources for international academic and service activities. Through the office, information is provided to students and faculty on study abroad and Fulbright scholar opportunities. The office also serves as the liaison to agencies, governments and institutions sponsoring international students at the university. The office supports affiliations with universities and academic programs overseas. Campus services for incoming international students are coordinated through the office, which directly administers the Intensive English Language Center and Study Abroad Resource Center.

For further information, contact the department director, 130 Mackay Science, or call (702) 784-1467. The department fax number is (702) 784-4015.

Intensive English Language Center

The center offers international students elementary, intermediate and advanced levels of instruction in English as a second language. Following completion of the program, students can qualify for admission to U.S. educational institutions.

The program is offered in both the fall and spring semesters, as well as during Summer Session. The curriculum provides for 20 hours of instruction weekly in on-campus facilities. Program partcipants must be at least 17 years old and should have completed the equivalent of a U.S. secondary school diploma.

Those students approved to participate in the program are issued appropriate immigration forms to attend classes on a student visa. Students who qualify for admission to an academic program, but do not meet the university's English language requirement, are issued immigration documents that allow them to attend the intensive English language classes. In addition, these students receive a conditional letter of acceptance to the appropriate academic program.

The Intensive English Language Center tests all incoming international students to determine if they need additional course work in English before beginning full-time study at the university.

The center reserves the right to dismiss students who do not attend classes regularly.

For further information, contact the program director, 127 Mackay Science, or call (702) 784-6075.

Japan Campus

The university's campus in Tokyo, Japan, offers a full, intensive English language program as well as lower-division academic courses, primarily for Japanese students who will later transfer to the main campus at the University of Nevada, Reno or other U.S. educational institutions. The program, begun in 1988, has sent almost 1,000 students to the United States, many of whom are now studying at the University of Nevada, Reno or Truckee Meadows Community College in Reno.

A summer study abroad program for American students will open at the Japan campus in 1993. Students will have the opportunity to take Japanese language and culture courses as well as regularly scheduled academic courses. For further information about the new study abroad program, contact the University Studies Abroad Consortium at 784-6569.

For further information on the Japan campus, call (702) 784-1740, or contact Dr. Charles William Twyford in Japan by writing to the Director of Academic Affairs, University of Nevada, Reno – Japan Campus, 1-2-3 Hamamatasucho, Minato-ku, Tokyo 105, Japan. The telephone number is 81-3-3459-5551. To conatct the campus by fax, call 81-3-3459-5550.

The Study Abroad Resource Center

The center provides information about study abroad programs throughout the world offered by the University of Nevada, Reno and other U.S. educational institutions. Foreign study is available for all students in every major. Many programs feature courses taught in English; others offer intensive foreign language study, as well as university courses taught in the language of the host country.

The Study Abroad Resource Center provides a number of services for students, including: course catalogs for foreign universities, travel and internship information, financial aid referrals, and counseling for students interested in studying abroad.

For further information, contact the Study Abroad Resource Center, 130 Mackay Science, or call 784-1468.

University Libraries

The University of Nevada, Reno libraries strive to meet the diverse academic and research needs of the campus' faculty and students. The collection, housed in the Noble H. Getchell Library and six branch libraries, contains approximately 861,000 volumes, 2.5 million microforms and 5,000 current periodical titles. The library serves as a regional document and patent depository that receives virtually all available federal documents, many state documents and publications from various international organizations, including the United Nations and UNESCO.

The six branch libraries, located at different points on campus and in the neighboring community of Stead, house specialized collections supporting university curricula. The collections include: engineering, life and health sciences, medicine, mines, physical sciences and the Desert Research Institute Library (located in Stead).

Library services include on-line literature searches in more than 300 databases, interlibrary loans and instruction in the use of library resources through classroom lectures and library science courses. An audio-visual learning laboratory and a film and video library of more than 4,500 items serve the entire University and Community College System of Nevada.

WolfPAC, the library's on-line public access catalog, provides electronic access to much of the main and branch libraries' collections through terminals located throughout the libraries. Dial-up access from other campus locations through the Campus Cable Network is also possible. Library materials from Truckee Meadows Community College, Western Nevada Community College, Northern Nevada Community College and the Desert Research Institute are included in WolfPAC.

Among the library's unique collections are the Nevada and the Great Basin, Modern Authors, and Basque Studies collections. The 70,000-volume law library of the National Judicial College is also located on campus.

Governmental Relations

The university maintains several governmental relations programs as one component of its public relations efforts. These programs involve state and national and are substantially assisted by community-based groups.

Program activities are designed to support the legislative efforts of the university president and the Board of Regents, who attempt to enhance funding and support for the university's research and instructional programs. Major events in the Governmental Relations program include the Nevada Leadership Forum, the Blue and Silver Dinner and President's Roundtables. The office also coordinates the Legislative Relations Steering Commitees for the community and faculty.

Service and Research Within the Colleges

Nevada Cooperative Extension

This educational outreach program provides information and instruction about important issues facing Nevada's citizens. Campus-based specialists work with community-based faculty members located in four administrative areas and 14 counties. The faculty, in consultation with community leaders, identify critical needs, plan and implement educational programs, and assess the success of programs.

Faculty offices, located throughout the state, serve as local campuses of the university and provide citizens with information about university programs.

Extension programs are financed by an agreement between the U.S. Department of Agriculture, the state of Nevada and the counties. The programs are consistent with the provisions of federal and state laws for extension work.

Nevada Experiment Station

The experiment station has been in continuous operation at the university since its establishment in 1888. The passage of the Hatch Act of 1887 and succeeding state legislation provided for the organization of the station.

The majority of the faculty working at the experiment station have joint responsibility with cooperative extension or resident instruction programs in the College of Agriculture, College of Human and Community Sciences, or the School of Medicine.

Federal funds are appropriated under the Hatch Act to promote high-quality research activities on agricultural and natural resource issues that are important to the state, the West and the nation. McIntire-Stennis Act allocations promote research for the development, protection and efficient utilization of resources from the nation's forests and rangelands. Animal Health allocations are directed toward solving and understanding the health problems of livestock.

Research priorities of the faculty at the Nevada Experiment Station include: improvement of water quality and quantity, biotechnology applications, diet improvement, human nutrition and health relationships, enhancement of the profitability of agriculture in Nevada, youth-at-risk programs, and the development of enviromentally-compatible, agriculutral production systems.

Research is conducted in the laboratories of the Max C. Fleischmann College of Agriculture, Howard Medical Sciences and the College of Human and Community Sciences facilities on the campus of the University of Nevada, Reno. Four field laboratory sites are also used for research, including: the Animal Research and Extension Center in Reno, the Valley Road facility in Reno, the Newlands facility in Fallon, and Gund Ranch in Beowawe.

College of Arts and Science

The Center for Advanced Study

The Center for Advanced Study is designed to recognize, facilitate and promote research and scholarship in the College of Arts and Science at the University of Nevada, Reno.

The center's fellows, who are faculty members of the College of Arts and Science, are recipients of the university's Outstanding Researcher Award.

Oral History

The Oral History Program (OHP) is principally a research and publication operation. Established in 1965, the statewide program produces printed, primary-source oral histories that have enduring value as documents of the history and culture of Nevada and the Great Basin.

Research topics include (but are not confined to): mining, ranching, the development of casino gaming, politics and government, Great Basin Indians, and the experiences of various ethnic groups in the settlement and development of the West. The collection also includes a number of biographical chronicles.

The OHP's oral histories are derived from carefully-prepared, systematic interviews of people who can provide first-hand descriptions of events, people and places that are historically significant. From transcripts of the tape recordings, the program produces edited, indexed, half-tone-illustrated, bound volumes. These works reach a wide audience, and are used frequently.

Tapes and master manuscripts of more than 200 volumes of oral histories are housed in the OHP archives. Complete sets of the collection are also maintained by the university libraries at the Reno and Las Vegas campuses. The cataloged sets are available to the public.

Catalogs, master indexes to the collection and copies of oral histories may be acquired through the program office. Call 784-6932 for further information.

College of Business Administration

Advisement Center

The center provides academic advice for prebusiness, undergraduate and graduate students in the College of Business Administration. The primary function of the center is to help students define their academic goals and select a major field of study relating to their interests and abilities. For further information, call the center at 784-4912.

Bureau of Business and Economic Research/Nevada Small Business Development Center

Both the Nevada Small Business Development Center (NSBDC) and the Bureau of Business and Economic Research (BBER) are adminstered by the College of Business Administration at the University of Nevada, Reno.

The NSBDC is a cooperative service between the university and the U.S. Small Business Administration. It assists existing and new small business enterprises throughout the state, helping them plan their growth potential as well as the development and maintenance of professional management skills. NSBDC's programs are available free of charge in offices of the following institutions and organizations: the University of Nevada, Reno; the University of Nevada, Las Vegas; Northern Nevada Community College in Elko; the Tri-County Development Authority; and the Carson City Chamber of Commerce. The state's rural areas are served through the University of Nevada Agricultural Extension Service network.

The BBER is the official research unit of the College of Business Administration. Founded in 1956, the bureau is mandated and partially funded by the state legislature. It provides a broad array of research services and consulting for local, state, and national business and government communities.

Regular bureau publications include: *Nevada Review of Business and Economics, Washoe County Housing Report, and the Truckee Meadows Subdivision Report*. The BBER also provides the data in *The Reno Outlook*, a statistical portrait of the Reno-Sparks area.

The bureau maintains data bases and other information that can be customized to serve the needs of researchers and others who need up-to-date information about the region, state, or nation.

Career Placement Services

The College of Business Administration opened a career placement office in July 1990 to assist juniors, graduating seniors and students pursuing the master of business administration degree with their career planning and placement. The department offers students a variety of services. For further information, call 784-4912, or visit the office at 408F Business Building.

The Institute for the Study of Gambling and Commercial Gaming

The mission of the Institute for the Study of Gambling and Commercial Gaming is to stimulate research and educational efforts related to gambling behavior and commercial gaming industries, as well as the economic, business, social and political effects of gambling on society. The institute is involved in the coordination of international conferences, sponsors the publication of books and professional journals, and aids in the development of degree and nondegree courses and programs related to gambling and commercial gaming.

College of Education

Research and Educational Planning Center

The Research and Educational Planning Center (REPC) is the research arm of the College of Education. The center develops and implements the college's grant-funded projects. REPC is involved in the following field-based activities: educational research, development, evaluation, staff and faculty development, and technical assistance.

The center works directly with educators in schools throughout Nevada, with the state Department of Education and with faculty in the College of Education and in other university departments.

Assistantships and student-initiated activities provide opportunities for graduate students to conduct independent research, work with center-wide projects and become involved in all aspects of educational research and program development.

The Nevada University Affiliated Program (NUAP) is a campus-wide program administered through the center. The NUAP mission is to assist Nevadans with developmental disabilities, helping them to become independent and productive citizens who are fully integrated into their communities.

The NUAP offers a number of services, including: ltidisciplinary training for judges, human service professionals, aprofessionals and parents; model services in audiology, speech hology, behavioral analysis and multidisciplinary evaluation; ormation on developmental disabilities and service options; tech- al assistance; and relevant research and evaluation studies.

ollege of Engineering

gineering Research and Development Center

The Engineering Research and Development Center promotes erdisciplinary research and administers sponsored grants and ntracts for the College of Engineering. Through the center, dents receive significant exposure to research conducted with ding from federal agencies, the state, industries, foundations d individual contributions.

The ERDC has also developed a Standards and Calibration nter. The facility provides necessary calibration to other univer- y departments as well as for state agencies, federal agencies and vate industries.

ollege of Human and Community Sciences

ild and Family Research Center

The Child and Family Research Center, affiliated with the man development and family studies department, is a research, ching and service facility focusing on children from birth through ears old. Approximately 250 children and their families are rolled each semester in the center, which includes infant, toddler d preschool classrooms. Students and faculty throughout the mpus use the center for child and family research, utilize the servation facilities, and participate in professional training.

eriatric and Gerontology Center

The center offers programs sponsored jointly by the School of edicine and the College of Human and Community Sciences. The cility has close affiliations with the School of Nursing and col- ges of Arts and Science and Education, providing an interdisci- nary focus for teaching, research and community service in the ea of aging. The staff at the center works not only with students d faculty from all disciplines at the university, but also with local, te and federal agencies.

The program's major goals are: to develop and enrich education geriatrics and gerontology; to advance scientific knowledge out aging and the special problems of the aged; and to improve alth and social services for Nevada's elderly citizens.

The center's activities are overseen by both a Community dvisory Board and an interdisciplinary Gerontology Curriculum mmittee, comprised of interested faculty. The committee devel- s the interdisciplinary gerontology certificate program and the rontology minor. Both programs are administered by the Geri- ic and Gerontology Center.

The center secures funding grants for innovative demonstra- n projects, such as studies of health promotion for American dian elders. Lectures, seminars, courses and conferences on ing are presented to audiences seeking continuing education edit.

For further information, call 784-1689.

ealth Career Advisement Center

The Health Career Advisement Center office is a centralized source for all university students interested in health-related reers. Refer to the College of Human and Community Sciences ction of this catalog for further information. To schedule an pointment at the center, call 784-4939.

nator Alan Bible Center for Applied Research

A college-wide facility for research and development, the cen- functions in a support role for the university as well as for the its within the College of Human and Community Sciences. The center, comprised of the Survey Research Center and the Center for Public Education and Service, has four primary functions:

1. As a center for stimulation of applied research by faculty and graduate students, with a facilitating role ranging from advice on project design to supervision of research projects;
2. As an educational outlet on state and local public affairs issues through the publication of studies, including the periodical, *Nevada Public Affairs Review;*
3. As a survey research center with a computer-assisted telephone interviewing facility, designing and conducting surveys for faculty, the university, and state, local and community agencies and policymakers;
4. As a liaison between the university, state and local governments, and business and industry, assisting projects through the expertise of faculty within the college.

School of Medicine

Ambulatory Care Centers

The centers listed below, staffed by School of Medicine faculty in Reno, offer a wide range of professional medical services:

Internal Medicine, 781 Mill Street, 323-5263;
Department of Veterans Affairs Medical Center, 1000 Locust Street, 786-7200;
Family Medicine Center, Brigham Building, University of Nevada, Reno, 784-1533;
Pediatric Clinic, Family Medicine Center, Brigham Building, University of Nevada, Reno, 784-6180;
Speech Pathology and Audiology, Speech Pathology and Audiology Building, University of Nevada, Reno, 784-4887;
Nutrition, Brigham Building, University of Nevada, Reno, 784-4474.

Nevada Area Health Education Program (AHEC)

The Nevada AHEC program provides support services to health care providers in rural and other medically-underserved areas of the state in an effort to improve the retention and recruitment of health care professionals, as well as the quality of care in those communities. The program is a cooperative effort with the School of Medicine and other health sciences programs within the university system. AHEC provides services throughout the state, utilizing a main office based in Reno and staellite offices in Elko and Las Vegas.

AHEC provides specific services, including the coordination of medical students' first-year preceptorships and fourth-year rotations with physicians around the state. The preceptorship gives medical students their first clinical experience; at this time, they can practice skills learned during the first year of study. The senior-year rotation is a four-week stay with a rural family practice physician, a period in which students gain skills in patient interviewing and diagnosis. AHEC has a residency rotation in rural Nevada for internal medicine and family practice residents in the School of Medicine. The program also offers students in the health professions a variety of field work in nursing, health education, nutrition, medical technology and other disciplines.

In addition, the program operates a Learning Resource Center in cooperation with Northern Nevada Community College in Elko. The center, a resource for students and health professionals in rural Nevada, provides: direct computer linkups with the National Library of Medicine; a portable, computer database system; literature searches and interlibrary loans; patient education materials; and self-study videotapes.

AHEC provides continuing education for a variety of health professionals throughout Nevada. The program is designed to improve the quality of care and enable health care providers in rural areas to obtain necessary continuing education credits to maintain licensure.

AHEC also recruits students, primarily at the high school level, in rural and medically-underserved areas of the state. The health professions recruitment program provides students with information, presentations and hands-on programs.

Geriatric and Gerontology Center

The university's Geriatric and Gerontology Center offers an interdisciplinary focus for teaching, research and community service in the area of aging.

For a complete description of the center, refer to the "College of Human and Community Sciences" summary in this section of the catalog.

Nutrition Education and Research Program (NERP)

The program coordinates nutrition instruction and activities within the medical school's curriculum, both in Reno and Las Vegas. It serves the medical community by integrating nutrition into the overall, health care delivery system; providing nutritional counseling for patients on referral by their private physicians (Nutrition Associates by appointment, 784-4474) and ambulatory care services through the departments of pediatrics, internal medicine and family medicine.

NERP conducts clinical nutrition research and is conducting a comprehensive study to determine the effects of diet and weight on cardiovascular-risk factors for 500 volunteers from the Reno community.

The program's research activities are jointly sponsored by the Nevada Experiment Station and are joined by the nutrition department faculty in the College of Human and Community Sciences. Researchers can effectively analyze the relationship between dietary intake and disease risk through the use of a computurized nutrient data base.

Office of Rural Health

The Office of Rural Health supports rural, health-care providers and institutions throughout the state. The office provides assistance in health-manpower needs and continuing education programs for both providers and consumers. The Clearinghouse, an Office of Rural Health program, specializes in the recruitment of primary health-care personnel, especially in rural and underserved areas of the state.

Staff members maintain close contact with state, national and local health-care agencies and help monitor areas where there is a health-manpower shortage. The office also administers a state-funded loan repayment program called the Nevada Health Service Corps, which focuses on meeting the health-manpower needs of rural areas throughout the state.

Additionally, the office coordinates a new Physician Assistant training program, MEDEX, as a satellite program.

Mackay School of Mines

Center for Mineral Bioprocessing

The Mackay Center for Mineral Bioprocessing, admimistered by the Mackay School of Mines, has established specific goals for its operation. The goals are: (1) conduct fundamental and applied research work in the emerging multidisciplinary field of mineral bioprocessing; (2) promote and advance the discipline; (3) disseminate research and practical information relating to the field; and (4) promote the interaction of universities (particularly campuses of the University and Community College System of Nevada), industry and government within the discipline.

The mineral bioprocessing field includes the use of microorganisms in aiding the exploitation of ores, and the bioremediation of toxic effluents potentially produced by mineral-industry operations.

Center for Neotectonic Studies

The Center for Neotectonic Studies was established to coordinate research for the evaluation of geological environments that may affect land utilization. The center also coordinates research related to the evaluation of seismic and volcanic hazards, groundwater environments, slope stability and sub-surface disposal of hazardous or radioactive wastes.

Center for Strategic Materials Research and Policy Study

The Center for Strategic Materials Research and Policy Study was established within the Mackay School of Mines by congressional legislation. That legislation provided for a $9.6 million research facility and a $5 million facility for strategic materials policy study.

Strategic materials are essential in the production of high-temperature alloys, steel and stainless steel, industrial and automotive catalysts, and solid-state electronic components used in computers. Research in the center focuses on improving domestic mineral production and metal processing of strategic materials, the exploration for new domestic and free-world supplies of strategic materials, the evaluation of substitutes for strategic materials, the development of recycling technology, and the evaluation of existing laws and strategic materials policy.

Mackay Mineral Resources Research Institute

The Mackay Mineral Resources Research Institute, established as a research division of Mackay School of Mines, was organized through a program sponsored by the U.S. Bureau of Mines. In 1982, the School of Mines was selected to be one of four national centers for mining research. The institute's Generic Center is the site of research on reclamation of waste from mined lands. The Generic Center is also coordinating the research efforts of four other intitutions studying this problem.

Other research programs within the institute include: critical and strategic mineral-resource appraisal, development of new exploration methodologies, and geothermal research and engineering.

Nevada Bureau of Mines and Geology

The Nevada Bureau of Mines and Geology is one of the public service divisions of the Mackay School of Mines. The bureau was established by an act of the state legislature in 1929.

The principal purposes of the bureau are to assist the public in the proper development and utilization of Nevada's mineral resources, and to provide geoscience data to individuals, industries and public agencies. The bureau prepares reports of its field studies and distributes pertinent geoscience data to the public.

The bureau conducts cooperative programs with the U.S. Bureau of Mines and the U.S. Geological Survey, and handles funded research programs for other governmental agencies. The bureau is also the Nevada affiliate of the National Cartographic Information Service and supplies information on base maps and aerial photography.

Seismological Laboratory

Established as a separate research division, the Seismological Laboratory has overall responsibility for instrumental studies of earthquakes in the Nevada region. The laboratory operates a statewide network of seismographic stations and investigates the distribution of earthquakes, earthquake-recurrence statistics, maximum-earthquake magnitude, and problems related to seismic risk in Nevada. The laboratory publishes a series of bulletins, containing an analysis of earthquake information for various periods of time. It also serves as a repository of information on earthquake activity in Nevada and adjoining states. The laboratory handles grant- and contract-supported research on seismic problems of national importance.

Development

The vice president for development oversees the alumni relations, fund-raising, and public relations and information efforts of the university. The units involved in these efforts include the Alumni Association, as well as the offices of Development and Alumni Relations, Communications, and the University of Nevada, Reno Foundation.

Alumni Association

The University of Nevada, Reno Alumni Association, organized in 1895, encourages a lifelong relationship between alumni and their university, and works to promote the welfare of the institution.

The association's activities include the operation of regional alumni chapters throughout Nevada and other states, support for a variety of student activities, and development of programming for alumni continuing education.

Officers and council members are elected annually during Homecoming weekend. Association membership is open to all university graduates and those students who attended the university for at least one semester.

The association offices are located in Morrill Hall on the Reno campus. For further information, call (702) 784-6620.

Alumni Relations

The Alumni Relations Office works closely with the Alumni Association, representing more than 35,000 graduates who maintain contact with the university. The office supports a variety of programs, including: Homecoming, Alumni College, the Senior Scholar Award, the Golden Reunion, graduation reception, young alumni activities and alumni chapter development. The Alumni Relations director coordinates the Alumni Travel Program and serves as the liaison between the association and the university.

For further information, or to update alumni files (address changes, name changes, etc.), call (702) 784-6620.

Dodd/Beals Fire Protection Training Academy

Comprehensive training programs in controlling flammable liquid and gas fires are operated at the Stead campus, in coordination with the Western States Petroleum Association. The academy offers up-to-date, hazardous materials classes, including a curriculum that incorporates both classroom and hands-on training. The training is available to public fire-service and petroleum-industry personnel.

Office of Communications

In managing the university's public identity, the Office of Communications is the news and information link between the university and the people it serves. The office is responsible for both on- and off-campus communications, and is the central clearinghouse and authorized source for university facts and figures. Headquartered in Jones Visitor Center, Communications manages the university's Public Relations, Creative Services and Speakers Bureau units; the *Silver & Blue* alumni magazine; and the university's major advertising campaign.

Public Relations develops and distributes university news to newspapers, magazines, radio and television, as well as to educational and other professional publications throughout the United States. Public Relations handles daily inquiries from the news media and supplies the media with a directory of university experts available for comment on newsworthy issues and topics. Public Relations also produces a weekly campus newsletter, "Campus Connections," for all faculty and staff. For further information, call 784-4941.

Creative Services designs and oversees the production of university publications. These publications include the following materials: brochures, fliers, posters, magazines (including the *Silver & Blue* alumni magazine), catalogs, newsletters and displays, in addition to selected advertising and promotional materials. Creative Services is responsible for the visual image, graphic integrity and editorial content of all these materials. The Creative Services office is located at 210 Ross Hall. For more information, call 784-6126.

Silver & Blue magazine, produced and edited by the Office of Communications, reaches thousands of alumni, benefactors and other friends of the university, providing them with informative articles and illustrations, news of university achievements, and updates on the noteworthy accomplishments of university alumni. For further information, call 784-4941.

The Speakers Bureau, established in 1968, provides speakers from not only the university faculty and staff, but also from participating community colleges, the Desert Research Institute and Nevada Historical Society. Speakers volunteer their time as a free public service to provide lectures and programs for schools, clubs and professional organizations. Free of charge, the Speakers Bureau can provide university experts to discuss any of 450 topics, ranging from AIDS to xeriscape landscaping. For further information, call 784-1583.

The Office of Communications also staffs the university's telephone line for general information. Inside the Reno (local dialing) area, call (702) 784-INFO. For calls from Nevada outside the Reno area, call toll-free at 1-800-622-4867. Outside Nevada, call (702) 784-4636.

Southern Nevada Development Office

The office coordinates alumni relations, student recruitment and development activities in southern Nevada. The office is located at 3100 W. Charleston Blvd., Suite 208, Las Vegas, 89102.

Special Events

The Special Events Office designs and produces a variety of special events on campus, in the community, and elsewhere to support the university's fund-raising and public relations goals.

Some of the events the office is active in organizing include the annual Graduation Celebration, the Foundation's Annual Banquet — William F. Harrah Lecture Series and the Leon Nightingale Memorial Concert Series.

The Special Events Office also maintains the university's master invitation list, coordinates the university's special events calendar and is available to assist the university's colleges, schools and departments with their special-event planning. For further information, call 784-4831.

University of Nevada, Reno Foundation

Established in May 1981, the foundation is the central fund-raising organization for all academic and public service programs at the university. The foundation is governed by a 60-member board of trustees comprised of alumni, community leaders, business leaders and other friends of the university.

The foundation is responsible for the coordination, cultivation, solicitation and processing of all private funds and gifts donated to the university. In addition to its own accounting and computer services staff, the foundation offers consultation and assistance to all colleges, schools and departments with fund-raising goals. The office also oversees several major programs, including the annual fund campaign, the President's Associates program, major and planned giving, scholarship solicitations, and the university's Century Campaign.

Through the efforts of its staff and volunteers, and through community assistance, the foundation is able to secure financial support for a number of important services and activities, including: major endowed programs; scholarships; new equipment, buildings and libraries; the Alumni Association; the Graduation Celebration; Foundation professorships; and the Faculty Enhancement Program.

The Foundation office is located at 102 Morrill Hall. For further information, call 784-6622. To reach Foundation Accounting Services, call 784-1587.

Financial and Administrative Services

The finance and administration division provides essential planning and operational services for the university community.

The six units involved in these efforts include the offices of Business Affairs, Controller, Facilities Management, Financial Services, Lawlor Events Center, and Planning, Budget and Analysis.

Business Affairs

Business Affairs, located in the Artemesia Building, is an organizational unit comprised of the Business Center North Personnel Services, Central Services, Printing Services, Purchasing, Real Estate, Safety and Loss Control, University Inn, and University of Nevada, Reno Personnel Services departments.

Business Affairs provides services to the University and Community College System of Nevada's Business Center North institutions (UCCSN administration, Desert Research Institute, Northern Nevada Community College, Truckee Meadows Community College, University of Nevada, Reno, and Western Nevada Community College).

Central Services

Central Services, located in the Central Services Building, provides mail, receiving, shipping and stores services to the university.

The mail service includes distribution of the university's incoming and outgoing mail (including UPS, Federal Express, etc.) and the free distribution of intracampus and intrastate agency mail and facsimile service. The receiving service includes receipt and delivery of all non-mail freight and packages. The shipping service includes the packaging and dispatch of all non-mail freight and packages. The stores service includes the ordering, stocking and delivery of commonly used office products, computers and laser printers that are inconvenient to purchase off-campus, require lengthy delivery times, or are less expensive when purchased in bulk quantities.

Personnel Services

The University of Nevada, Reno Personnel Services department is responsible for the development and administration of the university's personnel programs, and maintains the official employee records for university faculty (however, the Vice President for Academic Affairs is ultimately responsible for the academic program.). Personnel Services also offers individual counseling to all university faculty and staff on financial and benefit matters.

The Business Center North Personnel Services department is responsible for administering the BCN classfied personnel program and for processing benefit-related documents for BCN faculty and staff.

The offices of both departments are located in the Artemesia Building.

Postal Services

The University Station branch of the U.S. Postal Service is located adjacent to the university campus at the corner of North Sierra Street and Artemesia Way. All of the standard U.S. post office services, except general delivery, are available at the branch. Mail boxes may also be rented.

Students living on campus in residence halls must have a post office box to receive mail, because mail addressed to residence halls cannot be delivered by the Postal Service and is returned to the sender.

For further information, refer to the "Central Services" description in this section of the catalog.

Printing Services

Printing Services, located in the Artemesia Building, provides offset printing, photo-direct duplicating, typesetting, darkroom facilities and bindery services to all university departments, faculty, staff and students.

The Copy Center, located in the Business Building, supplies high-speed copying services. The copier program, also available through Printing Services, provides for the placement of copy machines on a cost-per-copy basis.

Purchasing

The Purchasing department, located in the Artemesia Building, provides centralized buying services for the institutions in the University and Community College System of Nevada's Business Center North.

Purchasing also processes university insurance claims, provides for short-term risk insurance for special occasions and handles the registration and licensing of all university motor vehicles and trailers.

The property inventory office in the Purchasing department maintains a computerized listing of all Business Center North equipment and handles the disposal of excess property for all BCN institutions.

Real Estate

The Real Estate department, located in the Artemesia Building, maintains the real estate records and an inventory of property owned by the University and Community College System of Nevada's Board of Regents. The department also handles the purchase, sale, rental and leasing of property for the institutions in Business Center North.

Safety and Loss Control

The Safety and Loss Control department, located in the Artemesia Building, directs the worker's compensation and employee safety programs for units within the University and Community College System of Nevada's Business Center North.

University Inn

University Inn is administered by the Business Affairs office. It is a hotel/residence/conference facility serving the university and the community.

For a complete description of the facility, refer to the "Housing" description in the Services and Activities for Students section of this catalog.

Controller

The controller's office provides a system for the financial reporting and accountability of all university and university-related funds, and is responsible for collection, disbursement and custody of these funds.

The controller's office provides a number of services, including: cashiering (fee assessment and collection, and other cash collections); accounts payable; payroll; sponsored project management and reporting; financial aid disbursement for students and loan collection; accounting services for plant funds, endowment funds and auxiliary funds; and agency-funds custodianship.

Facilities Management

Facilities Management is responsible for overseeing the operation of university facilities. The department's responsibilities include: facilities services, parking services, physical plant operations and maintenance, and scheduling services.

Facilities Services

The Office of Facilities Services maintains the inventory of university instructional and non-instructional space, and prepares evaluations on space information at the university for the Facilities Planning and Management Board. The office also processes long-term, space assignment requests presented to the board and provides alternative instructional settings on an emergency basis. Facilities Services also offers its input in campus master planning, the chief responsibility of the Facilities Planning and Management Board.

For further information, call 784-6948.

Parking Services

The Parking Services department handles the distribution of official parking permits for the university community. The department also regulates the use of parking spaces on campus.

Students, faculty and staff are permitted to park their vehicles in specified areas on university property, in accordance with the University Parking and Traffic Regulations. Such vehicles must be registered with Parking Services and have official parking permits.

Metered parking, visitor parking and parking for the handicapped are also available in designated areas.

The University Parking and Traffic Regulations, approved by the Board of Regents, govern all vehicles operated on campus. Vehicles parked in violation of the regulations are subject to citation and/or impounding.

Permits and parking information are available at the department office, located at 1305 Evans Ave. For further information, call 784-4654.

Physical Plant

The Physical Plant department provides services for operation and maintenance of the university's facilities and grounds. The department oversees the planning, engineering, design and construction of new facilities. It also manages building repairs and maintenance; heating, air conditioning and custodial services; building and room key assignments; motor pool services; and utility services.

Scheduling Services

The Office of Scheduling Services coordinates all off-campus, faculty and staff requests for use of university facilities. The office also handles classroom changes after classes begin. For further information, call 784-6837.

Financial Services

The Financial Services office assists the university community by offering financial projections and analysis, assistance to campus departments in financial management, assistance in preparing written agreements and contracts, and monitoring of capital projects and their funding. The office also reviews written agreements and contracts before approval by campus and/or system administrators.

Lawlor Events Center

The Lawlor Events Center is a multi-purpose, public facility capable of accommodating university-sponsored athletics, entertainment, educational and cultural events, as well as non-university events. The 12,000-seat center opened in the fall of 1983.

For further information about the facility or for event information, call 784-4659.

Planning, Budget and Analysis

The Office of Planning, Budget and Analysis coordinates the development of academic and fiscal planning at the university, and handles the development and allocation of the university budget. The office prepares the university's biennial budget request and the annual operating budget. The office conducts studies that describe, analyze and evaluate the operations and outcomes of the university, and produces the University of Nevada, Reno *Databook*. The office also serves as the staff to the university planning and budget committee.

Affiliated Research, Service Organizations

Desert Research Institute

As a full-time, environmental research and development organization, the Desert Research Institute (DRI) is the only one of the University and Community College System of Nevada's seven operating divisions that does not award degrees. The institute's faculty supports graduate student instruction and supervises research on the two university campuses. DRI's mission is to conduct important research for the state, the nation and the international scientific community—supporting the needs of industry and Nevada's economic-diversification objectives.

Established in 1959, the Desert Research Institute currently conducts scientific investigation dealing with some of the following fields: atmospheric physics, air quality, water resources, archaeology, environmental and ecological responses to climatic change, and the development of technology in support of research applications.

Members of DRI's research faculty teach selected, technical subjects at the University of Nevada, Reno and the University of Nevada, Las Vegas, an arrangement that provides the universities with additional expertise in highly technical curricula without the corresponding, full-time staffing requirements. Selected graduate students at the universities are also hired to support DRI researchers on contracted projects, providing underwritten topics for theses and dissertations.

DRI receives more than 90 percent of its funding in the form of research grants and contracts. The state of Nevada funds the remaining amount to underwrite the salaries of the institute's core administrative staff. From time to time, various state research efforts are also funded on an individual basis. The DRI president reports to the University and Community College System of Nevada chancellor and to the Board of Regents.

The institute is currently staffed by approximately 300 full-time professional scientists, technicians and support personnel housed in DRI office and laboratory facilities at Stead and in the Dandini Research Park in Reno, as well as in Las Vegas, Boulder City and Laughlin in southern Nevada.

Each of DRI's five research centers concentrates on a distinct area of environmental science that complements and interacts with the research areas addressed by the other centers. In contrast to the traditional academic organization into classic disciplines, i.e., chemistry, physics, geology, mathematics, each DRI center features a combination of several scientific disciplines related to the topics being investigated. It is common for DRI research teams to be assembled from several centers, and also from faculties of the university campuses in Las Vegas and Reno and other universities, depending upon the research requirements.

The Research Centers

The five DRI centers are the Atmospheric Sciences Center, Biological Sciences Center, Energy and Environmental Engineering Center, Quaternary Sciences Center and Water Resources Center. Though they are based in Nevada, DRI research teams regularly travel throughout the United States and other countries as required.

The **Atmospheric Sciences Center** has achieved an international reputation in the fields of cloud physics, air motions and weather-modification research. Its scientists participate worldwide in projects ranging from the formational processes of Gulf and Atlantic hurricanes and High Plains hail suppression, to the development and application of weather-modification techniques to increase the winter snowpack in the Sierra Nevada range and elsewhere.

The center is a pioneer in conducting basic research on the effects of cloud formation on global climates, ice-crystal formation and boundary-layer air turbulence. Parallel studies include the design, management and evaluation of cloudseeding efforts to increase precipitation. ASC also operates the federally-funded Western Regional Climate Center, coordinating climatic research and data analysis for 11 Western states.

The **Biological Sciences Center** conducts research designed to improve society's understanding of the interactions of environmental systems in the earth's biosphere. The center's goal is to prompt more effective management of biological resources. The center's research focuses on global climatic change and the implications those changes have on environmental conditions in the intermountain West. With the anticipated development of an

advanced, controlled-environment research greenhouse, the center will expand experiments involving environmental simulation and modeling, in cooperation with other DRI centers and related university departments.

The **Energy and Environmental Engineering Center** conducts research on the nature of air pollution conditions in urban settings, as well as the relationship of urban, air pollution sources with downwind, rural, air quality areas. The center has developed and applied advanced, "source receptor" techniques to characterize air quality conditions in Reno, Las Vegas, Phoenix, Tucson, Denver, and central and southern California. The center's advanced instrumentation and air sampling capabilities have led to its involvement in national studies of acid deposition. The center has become the primary research agency in the state of California's study of acid deposition.

The center is involved in a new effort to determine the influence of pollutant plumes from major urban areas in the Southwest on the air quality of rural, desert and mountain regions, particularly where the pollution may affect the scenic visibility of national parks and recreation areas.

The **Quaternary Sciences Center** focuses its research on the natural paleoenvironmental record of climatic change in the western United States over the last 1.8 million years (the Quaternary Period), and the more recent development of human cultures in arid lands. This research emphasizes an anthropological approach to historic, prehistoric, geologic and archaeological studies concentrated in the western and southwestern United States. The center's interdisciplinary program includes specialists in the following fields: paleobotany, faunal analysis, geology, geomorphology, palynology, paleoclimatology and climate modeling, in addition to the core subjects of archaeology and anthropology.

Major research projects include an examination of the technological change of Native Americans from a hunter-gatherer culture, agriculture in the American Southwest, and cultural-resources surveys and analyses designed to preserve and interpret the archaeological record in the event of industrial or givernmantal activity. Other investigations involve studies of prehistoric and Neolithic societies in Jordan and Cyprus.

The **Water Resources Center** staff investigates the hydrologic, chemical, engineering, economic and legal aspects of water resources with regard to both quality and quantity. These investigations include some of the following activities: development of computer-simulation models used in planning, managing and evaluating groundwater flow; geothermal resources; hydroelectric application; and other water-related topics.

The center features a strong, water-quality program examining the effects of radionuclide transport at the Nevada Test Site. A related program investigating the environmental pollution of groundwater seeks new techniques for detecting, identifying and containing hazardous wastes. Other research efforts examine existing, water-management systems and the feasibility of new, management techniques for conserving or increasing water supplies. The center also seeks to improve water analysis.

The center's facilities include: an Enviromental Protection Agency-certified, water-quality laboratory to support hydrogeologic, geochemical and biological studies; an isotope laboratory for groundwater-recharge investigations; extensive computer facilities; field analytical equipment; and a technical library.

The Alessandro Dandini Research Park, a 470-acre tract overlooking the Truckee Meadows on Reno's northern boundary, contains the offices and laboratories of several Desert Research Institute centers, the institute's administration and the adjacent Truckee Meadows Community College. The park is designed as a site for private, corporate or government research groups, or for agencies that collaborate scientifically with DRI and take advantage of the institute's facilities and expertise.

For further information, contact the institute's President's Office, P.O. Box 60220, Reno, 89506. Contact DRI by phone at (702) 673-7311 in Reno or (702) 798-5771 in Las Vegas.

National College of Juvenile and Family Law

The National Council of Juvenile and Family Court Judges, founded in 1937, is the oldest and largest judicial membership organization in the country. The council is dedicated to improving the standards and effectiveness of the nation's juvenile and family courts through continuing judicial education, research, technical assistance and publications.

The council's headquarters and its training branch, the National College of Juvenile and Family Law, are located at the University of Nevada, Reno. Its research center, the National Center for Juvenile Justice, is located in Pittsburgh.

The National College of Juvenile and Family Law, the nation's largest training center for judges and other professionals in the juvenile justice system, conducts a variety of programs on campus for judges and court administrators from all parts of the United States, its territories, Canada and other countries. In addition to the resident programs, the college also conducts regional and state institutes across the nation. Since 1969, more than 170,000 judges and professionals in the juvenille and family law system have participated in its continuing education programs.

From its headquarters at the university's Midby-Byron National Center for Judicial Education, the council publishes books and several periodicals, including *Juvenile and Family Court Journal*, a quarterly journal devoted to the behavioral and legal problems of juvenile delinquency; the *Juvenile and Family Law Digest*, a monthly review of major court decisions affecting juveniles and families; and the *Juvenile and Family Court Judges Newsletter*, published six times annually.

The council is supported by a number of corporations and foundations, as well as local, state and federal agencies. Past supporters include: the Max C. Fleischmann Foundation, the United States Department of Justice, the Office of Juvenile Justice and Delinquency Prevention, the American Bar endowment and a broad group of individuals concerned with the improvement of justice for children.

The National Judicial College

The university is the academic home for The National Judicial College. The NJC's objective is to improve the administration of justice by providing judicial education and training programs for the nation's judges. An affiliate of the American Bar Association, the college offers formal classes covering such topics as evidence, sentencing and judicial writing, which are taught by judges and specialists from across the country. After class, judges also share ideas and experiences in informal discussion groups.

The college conducts one- to four-week resident programs, as well as extension, special and innovative programs on a year-round basis. Each year, some 2,500 state court trial judges, administrative law judges, special court judges, tribal judges, federal magistrates, court administrators and other court personnel participate in college programs. Numerous judicial officers from foreign courts also visit the college each year, many attending "Transition to Democracy" programs developed by NJC. The college, founded in 1963, has graduated a number of distinguished judicial officers, including U.S. Supreme Court Justices David Souter and Sandra Day O'Connor.

NJC participates in the unique master of judicial studies degree program, which is conducted by the university for trial judges.

Admission Information

For footnote explanation, see page 30

General Admission Requirements

Age: Applicants for admission to the university must be at least 15 years old.

Diversity: The university actively seeks women, nontraditional, minority, handicapped and international student applicants. The university encourages diversity among its student population.

Placement Tests:[1] American College Test (ACT) or Scholastic Aptitude Test (SAT) scores are required for freshman admission to the university. The scores are used for evaluation, academic advisement and proper course placement. Special testing arrangements may be made for handicapped applicants.

Applicants who are at least 25 years old are exempt from the ACT/SAT requirement.

The English, foreign language and mathematics placement tests are special examinations required prior to registration. Students who register for beginning, foreign language courses are not required to take placement testing.

Admission Filing Dates: Application forms must be submitted with proper credentials not later than July 1 for admission to the fall semester and by Dec. 1 for admission to the spring semester. Applications received after these dates will be processed on a first-come, first-served basis.

Application for Admission: Application forms are available in the Office of Admissions and Records. Individuals who are interested in attending the university are responsible for submitting complete credentials to the Office of Admissions and Records. These credentials become the property of the university and are not returnable. **The following items are required:**

1. A completed Application for Admission, dated and signed;
2. A nonrefundable $20 application fee;
3. An *official transcript*[2], sent directly from the student's high school;
4. A separate official transcript (if the student is applying with advanced standing), to be sent directly from each college or university that the student attended, whether credit was earned or not;
5. ACT or SAT scores;
6. Official documentation of immunization for measles, mumps, rubella, diptheria/pertussis/tetanus.

International applicants must submit the following additional credentials:

(a.) Satisfactory scores on the Test of English as a Foreign Language (TOEFL), indicating the student's ability to speak, write and understand the English language sufficiently to pursue full-time study. The Test of Written English (TWE) is required for potential, graduate teaching assistants;

(b) Adequate proof of financial responsibility or sponsorship by a reputable U.S. citizen or organization for all obligations the students incurs while attending the university.

(c) A recently completed medical history and examination (taken within the last six months) conducted in the United States and signed by a U. S. medical doctor.

Application for Resident Fees: Individuals eligible for resident fees are required to submit a completed application to the Office of Admissions and Records. Students registering for at least seven credits, who have not proven resident status, are charged nonresident tuition.

Cancellation of Admission or Registration: The university reserves the right to cancel the admission or registration of an individual whose attendance at the university, in the opinion of the appropriate administrative offices and the president, is not mutually beneficial to that person and to the institution.

Individuals who have registered at other educational institutions may *not* disregard such records and apply for admission to the University of Nevada, Reno on the basis of their high school or selected college transcripts.

If you are an ineligible applicant and gain admission to the university on the basis of incomplete or fraudulent credentials, or misrepresentations in your written application for admission:

- Your admission and registration shall be cancelled without refund of any fees;
- The total credits you have earned will be rescinded;
- Future registration at the university will be prohibited.

The director of admissions and registrar is responsible for the verification of documents and credentials. If it is determined that the student sought admission on the basis of incomplete or fraudulent credentials, or misrepresentations in the written application for admission, the student is notified in writing of the director's intention to take action as listed above. The student then has 10 days to reply in writing. The director makes a determination and then takes appropriate action, notifying the student in writing. The student may file a written appeal to the university president within 10 days. The president's decision is final.

Early Admission

Early admission consideration is given to applicants based upon their official, six- or seven-semester transcript and their ACT or SAT scores accompanying the application for admission.

All students accepted for admission must submit a final, official, high school transcript indicating their successful graduation and date of graduation prior to registration at the university.

Students who are at least 15 years old may be permitted to enroll as nondegree students in a maximum of six undergraduate credits per semester.

Undergraduate Academic Requirements

Admission to Bachelor's Degree Programs

The minimum academic requirements for admission to all undergraduate degree programs are the same. Specific programs may have additional admission requirements.

High School Graduation: Each applicant for admission to freshman classification must present satisfactory evidence of graduation from an accredited or approved high school. Graduates of nonaccredited or nonapproved high schools may be considered for special admission.

FALL 1993 ADMISSION:

Grade-point Average: A minimum, overall, high school grade-point average of 2.5 is required. A 2.5 average in all academic subjects is also required.

High School Courses (Units) Required: Students are required to successfully complete specific courses (13.5 units), in addition to the fulfillment of graduation and GPA requirements, as listed below:

English (four units): emphasis on composition, rhetoric and American, English and world literature.

Mathematics (three units): includes algebra, geometry, trigonometry or advanced mathematics.

Social Studies (three units): including world history and geography, U.S. history, economics, government, and law.

Natural Science (three units): including biology, chemistry and physics (with at least two years in laboratory science courses).

Computer Literacy (1/2 unit): understanding computers and their use.

Approved Alternatives That Satisfy the Undergraduate Academic Requirements:

• Transfer applicants with at least 15 acceptable, semester credits in transferable, general education courses with a cumulative GPA of at least 2.0 (C) may be accepted for admission.

• Appeals: Students who are denied admission to the university may petition, in writing, to the director of admissions and registrar within 10 days of receipt of their denial letter. The Special Admissions Committee will review the petition and make a determination of admissibility.

Admission for International Students

The minimum academic requirements for international applicants are:

1. Official evidence of an educational-level equivalent to graduation from an accredited, American high school.

2. Evidence of above-average ability (B or higher) in an academic curriculum as verified by official transcripts or satisfactory test scores. Applicants who cannot submit official transcripts of record may obtain specific information upon request from the Office of Admissions and Records.

3. Applicants with advanced standing must submit evidence of above-average achievement in their college-level courses.

4. All new international students must report to the international student adviser and the Intensive English Language Center for an English placement test before registering. The center is located at 127 Mackay Science Building. To reach the office by phone, call 784-6075. Based on the results of the test, the student may be required to take additional English language courses during the first semester on campus.

Admission to Advanced Standing

Admission with advanced undergraduate standing is granted to a student transferring from another accredited college or university, provided the applicant meets two conditions. First, the applicant must be in good standing at the educational institution last attended; and second, official transcripts must be presented from each college or university attended, indicating that the student compiled an overall GPA of at least 2.0 on all acceptable transfer credits. An applicant transferring to the university with less than 15 acceptable transfer credits is required to satisfy both the transfer and high school graduation admission requirements.

Applicants from accredited institutions ordinarily are granted credit for all work completed at the previous institutions, provided such courses are equivalent or comparable to those in the curricula offered at the University of Nevada, Reno. Credit is evaluated by the Office of Admissions and Records and granted in accordance with established university regulations, as well as the following guidelines:

1. The accreditation of the institution and the listing published in the current American Association of Collegiate Registrars and Admissions Officers "Transfer Credit Practices" govern the acceptance of the student's transfer credit.

Regionally Accredited Institutions: Credits earned in institutions that are accredited, or are approved candidates for accreditation, by one of the six, regional accrediting associations (MSACS, NCACS, NEASC, NWASC, SACS, WASC) recognized by the Council on Postsecondary Accreditation (COPA), are normally transferable – provided the courses are comparable to those offered by the University of Nevada, Reno, or other regionally accredited colleges and universities, and the courses are relevant to the student's academic program.

Nationally Accredited Institutions: Credits earned in specialized institutions offering associate, bachelor's, or advanced degrees that are accredited, or are approved candidates for accreditation, by one of the *five*, national accrediting associations (AABC, AICS, ATS, NATTS, NHSC) recognized by the Council on Postsecondary Accreditation (COPA), are evaluated on an individual, course-by-course basis with transfer credit granted for those courses that are comparable to those courses offered by the University of Nevada, Reno, or by other regionally accredited colleges and universities. Such courses must be relevant to the student's academic program. Joint approval by the dean of the college concerned, in consultation with the appropriate department chairman and the director of admissions and registrar, is required to grant transfer credit from these specialized institutions.

Unaccredited Institutions: Credits earned in U.S. institutions of higher education that are *not* accredited by one of the regional or national accrediting associations recognized by the Council on Postsecondary Accreditation (COPA), are *not* accepted in transfer by the university. The policies permitting advance course placement and the earning of credit for nontraditional learning provide adequate opportunities for the objective evaluation of knowledge acquired through a variety of learning experiences, including military schools.

2. Elective credit may be granted for individual courses that are not offered in the university program, provided the courses are clearly baccalaureate-level. Joint approval by the dean of the college and director of admissions and registrar is required.

3. The specific credit that may be applied toward satisfying degree requirements in the assigned college is determined by the adviser and/or dean of the college.

a. Sixty-four semester credits must be earned from a regionally accredited, four-year educational institution.

b. Thirty-two, upper-division semester credits must be earned at the University of Nevada, Reno in residency.

c. Credit may be granted for lower-division courses from other institutions, if the courses are comparable to upper-division courses at the University of Nevada, Reno. Such credit may be applied toward satisfying the individual college's upper-division credit or specific course requirements, if approved by the dean of the college concerned.

d. Repeated credit is not allowed.

e. Graduates from the Federal Bureau of Investigation's National Academy are granted a maximum of eight semester credits that are applicable toward the criminal justice program. Documentation is required for evaluation by the Office of Admissions and Records.

f. A summary of acceptable, advanced-standing credits earned at each of the institutions that the student has attended, and the student's transfer grade-point averages (computed relative to the university grading system), are noted in the Student Information System (SIS). The credit and grade-point totals earned at the University of Nevada, Reno are recorded separately.

Correspondence Study and Continuing Education: A maximum of 60 semester credits earned in acceptable, correspondence study courses, completed through a regionally accredited correspondence division [including U.S. Armed Forces Institute (USAFI)/Defense Activity for Nontraditional Education Support (DANTES)] and/or in extension or off-campus courses, may be applied toward a baccalaureate degree.

Credit for Nontraditional Learning

Examinations

Five types of examinations are approved for students attempting to earn university-level credit:

1. College Board Advanced Placement Examinations (CBAPE);
2. College-Level Examination Program (CLEP General and Subject);
3. ACT Proficiency Examination Program (ACT PEP);
4. National League for Nursing Placement Examination (NLN), Profile II, and Pharmacology;
5. National Occupation Trades and Industry Examination (NOCTI);
6. Special examinations administered by university departments.

The maximum number of credits that may be earned in any combination of these examinations is 60 semester credits toward a bachelor's degree. Credit earned by examination does not apply toward satisfying the university's resident-credit requirement for graduation.

Each student is responsible for completing the various examinations and for requesting that official score reports be sent directly to the university's Office of Admissions and Records.

Information regarding test dates, costs and registration may be obtained from Testing Services, University of Nevada, Reno, 89557. Or by phone, call 784-4638. Students may also gain examination information by writing directly to the respective testing organizations:

1. CBAPE, Box 23060, Oakland, CA 94623-2306

Advanced Placement (AP) examinations are administered each May in high schools, but not at the colleges. High school students must make arrangements through their school principals or AP coordinators by January to take the AP examinations.

For the University of Nevada, Reno, the CBAPE institutional code to receive score reports is 4844.

2. CLEP, Box 23060, Oakland, CA 94623-2306

College-level examinations are administered only by colleges. Individuals may take the examinations during the third week of each month at any of the 700 test centers in the United States, including at the University of Nevada, Reno. Individuals taking the college-level examinations should note that certain examinations require an essay in addition to the objective section of the test.

3. ACT PEP, Box 168, Iowa City, IA 52240

Military personnel may contact the Base Education Center for test information.

For the University of Nevada, Reno, the ACT institutional code to receive score reports is 2494.

4. NLN Examinations, 10 Columbus Circle, New York, NY 10019

National League for Nursing examinations (Profile 11) may be taken at selected sites. Contact an adviser in nursing for more information.

The Testing Services office is responsible for coordinating an annual evaluation of all revised and new national examinations with the related university departments, and for reporting the results to the director of admissions and registrar for reference and publication. The evaluation status of any examination may be modified when there is adequate justification to change the amount of credit to be granted.

It is the student's responsibility to request that score reports and essays, as required, are sent to the Office of Admissions and Records.

Special Department Examination

A regular, currently registered student in good standing, who has gained the knowledge and skills taught in a university course, may qualify to take an examination for credit, subject to these regulations:

1. Credit may not be earned in a course that covers, at an elementary level, the subject matter of a more advanced course for which the student has already received credit.
2. Credit by special examination may not be attempted in a particular course more than once.
3. Credit by special examination may not be earned in a course the student has failed or audited until one calendar year after issuance of the final grade.

Each department is responsible for determining and identifying the specific course offerings that are appropriate for credit by examination, and for providing such information to students. Each special examination should be equivalent to the quality, content and grading standard as applied to the examination that is administered to students who enroll in the course.

Procedure: A student who seeks to earn credit by examination must apply in the Office of Admissions and Records, where the examination is reviewed to determine eligibility. Each authorized applicant must then obtain written approval to take the examination from the adviser, the dean of the college in which the student is registered and the chairman of the department offering the course. A $25 per-course, examination fee is payable to the university controller. The completed application is submitted to the faculty member named by the department chairman. That faculty member administers the examination.

Grading is on a satisfactory/unsatisfactory (S/U) basis, with the following exception: a student may receive a letter grade from A to F for a required course in the student's major or minor, upon the advance written approval of the adviser.

The final assigned grade and each completed examination must be filed in the Office of Admissions and Records by the student's instructor. The grade is entered in the student's permanent academic record, where it is considered in the same manner as other grades. In order for the student to receive credit for that particular semester, the grade must be filed prior to the last day of instruction. Each examination is retained in the Office of Admissions and Records, where it may be examined by any faculty member.

For further information, direct specific questions regarding credit by examination policies and procedures to the Office of Admissions and Records.

Noncollegiate Learning Experiences

Credit may be granted and a grade "S" assigned for selected courses or programs recommended in the *Guide to the Evaluation of Educational Experiences in the Armed Services* and the *National Guide to Credit Recommendations for Noncollegiate Courses.* The awarding of credit is subject to the approval of the director of admissions, in consultation with the dean of the college concerned.

The documentation required for evaluation by the Office of Admissions and Records includes:

1. A copy of the Report of Separation, DD214, or the DD295 for active-duty personnel;
2. An official transcript of the courses or program completed.

USAFI/DANTES courses completed by the group-study method may be accepted in accordance with the advanced-standing regulations.

Credit is not granted for USAFI/DANTES courses completed by examination (nonenrolled), Military Occupational Specialties (MOS) training programs, or work experience. Credit for these types of learning experiences may be earned by special department examination.

College Board Advanced Placement Examination (CBAPE)

These examinations are primarily for students who complete courses in high school. Upon receipt of an official score report from the College Board and a satisfactory essay when required, the Office of Admissions and Records grants credit as specified and assigns a grade of "S" for scores of 3, 4 or 5.

Those students who successfully complete CBAPE examinations in French, German, Latin or Spanish satisfy the foreign language requirement in the College of Arts and Science.

An "e" notation in the following chart means an essay is required along with the objective test.

Examination	University Course Equivalent	Credit Granted
Art		
History	None	3
Studio	ART 100	3
Biology	BIOL 191	4****
Chemistry	CHEM 101, 102	3 or 6*
Computer Science A	C S 183	3
Computer Science AB	C S 183, 283	6
Economics		
Macroeconomics	EC 101	3
Microeconomics	EC 102	3
English (including essay)		
English Language and Composition	ENGL 101, 102	3 or 6 e**
English Literature and Composition	ENGL 101, 291	6
Foreign Languages		
(French, German, Spanish)		
Language	203, 204	6
Literature	204, 295	6
Latin		
Vergil	205, 209, 295	6
Catullus-Horace	205, 209, 295	6
History		
American	HIST 101***	3
European	HIST 106	3
Mathematics		
Calculus A, B	MATH 181	4
Calculus B, C	MATH 182, 281	8
Music		
Listening and Literature	None	3
Theory	None	3
Physics		
B	PHYS 151, 152	6*****
C (Mechanics)	PHYS 201	3*****
C (Electricity and Magnetism)	PHYS 202	3*****
Political Science		
American Government and Politics	P SC 101***	3
Comparative Government and Politics	P SC 211	3

* With an objective test score of 4 or 5, three credits are granted for CHEM 101. With an objective test score of 5, six credits are granted for CHEM 101 and 102. Credit awarded only after successful completion of the laboratory portion of CHEM 101 and 102 at the University of Nevada, Reno.

** With an objective test score of 3 or 4, three credits are granted for ENGL 101; with an objective test score of 5, six credits are granted for ENGL 101 and 102.

*** Does not satisfy the U.S. or Nevada Constitution requirements.

**** Meets the university's core curriculum, natural science requirement only if the biology department certifies that the student has completed an appropriate, advanced biology laboratory in high school; or after successful completion of BIOL 393 or 394.

***** Meets the university's core curriculum, natural science requirement only after successful completion of appropriate physics laboratory (PHYS 151-153, 152-154, 201-204, 202-205).

College-Level Examination Program (CLEP)

Credit may be granted and a grade of "S" assigned upon receipt in the Office of Admissions and Records of an official score report, showing completion of at least one general examination with a score of 500 or above, or subject examinations with a score of 50 or above. Such credit may need to be supported by a satisfactory essay, where specified.

The general examination(s) should be completed before a student enrolls at the University of Nevada, Reno, and must be completed before the student achieves sophomore classification at the university. Subject examinations may be taken at any time. The University of Nevada, Reno's Testing Services holds exams on Mondays and Tuesdays during the weeks advertised in the CLEP Bulletin. The Testing Services office is located at 105 Thompson Student Services Center. To reach the office by phone, call 784-4638.

An "e" notation in the chart below means an essay is required in addition to the objective test.

Examination	University Course Equivalent	Credit Granted
General:		
English Composition (including essay)	ENGL 101	3 e*
Humanities	None	6
Mathematics	MATH 120	3
Natural Sciences	None	6
Social Sciences	None	6
Subject:		
Biology		
Biology	None	3 e
Business		
Introduction to Business Management	None	3
Introductory Accounting	ACC 201, 202	6
Introductory Business Law	None	3 e
Introductory Marketing	None	3 e
Money and Banking	None	3
Economics		
Introductory Macroeconomics	EC 101	3
Introductory Microeconomics	EC 102	3
Introductory Microeconomics and Macroeconomics	None	6
Chemistry, General	CHEM 101	4 e***
Education, History of America	None	3
English		
American Literature	ENGL 241	3 e
American Literature I	ENGL 241	3 e
American Literature II	None	3 e
Analysis and Interpretation of Literature	ENGL 291	3 e
College Composition (including essay)	ENGL 101	3 e**
English Literature	ENGL 235 or 236	3 e
Freshman English (including essay)	ENGL 101	3 e**
Foreign Languages		
College French—Levels 1 and 2	None	3
College German—Levels 1 and 2	None	3
College Spanish—Levels 1 and 2	None	3
History		
American	HIST 101**	3 e
American I: to 1877	HIST 101**	3 e
American II: 1865 to present	HIST 102**	3 e
Western Civilization I: to 1648	HIST 105**	3 e
Western Civilization II: to present	HIST 106**	3 e

CLEP continued

Human Development and Family Studies		
Human Growth and Development	HDFS 131	3 e
Mathematics		
Calculus with Elementary Functions	MATH 182	4
College Algebra	None	3
College Algebra-Trigonometry	MATH 128	5
Trigonometry	None	2
Medical Sciences		
Anatomy, Physiology, Microbiology	None	6
Clinical Chemistry	None	4
Hematology	None	4
Immunohematology and Blood Banking	None	3
Political Science		
American Government	P SC 101**	3 e
Psychology		
Educational Psychology	None	3
General Psychology	PSY 101	3 e
Sociology, Introductory	SOC 101	3 e
Statistics****	MATH 352	3 e

* General English Examination: Scores earned prior to October 1978 or after April 1986 require a satisfactory essay and a score of 500 to 639 for three credits, or 640 or higher for six credits (which satisfies the English requirement at the University of Nevada, Reno). Scores earned from October 1978 through April 1986 require a satisfactory essay and a score of 610 to 749 for three credits, or 750 or higher for six credits (which satisfies the English requirement at the University of Nevada, Reno).

** English Subject Examinations: With an objective test score of 64 or higher and a satisfactory essay examination, six credits are granted (satisfying the English requirement at the University of Nevada, Reno).

*** Credit awarded only after successful completion of the laboratory portion of CHEM 101 at the University of Nevada, Reno.

**** Does not satisfy U.S. or Nevada Constitution requirements.

ACT Proficiency Examination (PEP)

Credit may be granted for selected PEP examinations that are completed with satisfactory scores. Upon receipt of an official score report, the Office of Admissions and Records grants credit, as specified, and assigns a grade of "S" for a standard score of 50 and above, or a letter grade of "C" or higher. The examinations may be taken at any time. They are offered on the first Thursday and Friday of February, May, June and November. Registration is required through the ACT PEP Registration Packet, available in 105 Thompson Student Services Center. Or call 784-4638.

Examination	University Course Equivalent	Credit Granted
Business		
Accounting: Level I	ACC 201-202	6
Accounting: Level II	None	0
Accounting: Level III, Areas I, II, III	None	0
Business Environment and Strategy	None	0
Finance: Level I	None	3
Finance: Levels II, III	None	0
Management of Human Resources: Level I	None	3
Managment of Human Resources: Levels II, III	None	0
Marketing: Level I	None	3
Marketing: Levels II, III	None	0
Operations Management: Level I	None	3
Operations Management: Levels II, III	None	0
Statistics	EC 261	3

CLEP continued

Examination	University Course Equivalent	Credits Granted
English		
Freshman English	ENGL 101, 102	3 or 6
Education		
Educational Psychology	None	3
Nursing		
Adult Nursing	None	13
Commonalities in Nursing Care, Areas I and A, II and B	None	0
Differences in Nursing Care, Area I, II, III	None	0
Fundamentals of Nursing	None	0
Health Restoration I	None	0
Health Restoration II	None	0
Health Support, Area I	None	0
Health Support, Area II	None	0
Maternal and Child Nursing, AA Degree	None	0
Maternal and Child Nursing, BS Degree	None	10
Nursing Health Care	None	0
Occupational Strategy/Strategies, Nursing	None	0
Professional Strategies	None	0
Psychiatric/Mental Health Nursing	None	0
Psychology, Abnormal	PSY 441	3
Science		
Anatomy and Physiology	None	6
Microbiology	None	3
Physical Geology	GEOL 101	3*

Meets the university's core curriculum, natural science requirement only if the geology department certifies that the student has completed appropriate laboratory experience in high school, or after the student has successfully completed GEOL 103.

National League for Nursing Placement Examination (NLN), Mobility Profile II

A total of 26 credits may be granted for NLN Mobility Profile II examinations, completed with a decision score of 100 and/or an advising score of 70 percent. Upon receipt of an official score receipt, the Office of Admissions and Records grants credit, as specified, and assigns a grade of "S." The examinations may be taken at any time; scores are accepted for five years from the date of testing.

Examination	University Course Equivalent	Credits Granted
Care of the Adult Client	None	13
Care of the Client During Childbearing and Care of the Child	None	10
Pharmacology in Clinical Nursing	None (satisfies the pharmacology requirement in nursing)	3

Graduate Admission Requirements

Students who wish to enter graduate study must first be admitted to the university in either graduate standing or graduate special classification. Each applicant is responsible for filing required credentials with the Office of Admissions and Records.

A maximum of nine graduate credits earned as a graduate special may be applied toward an advanced degree.

Early Admission: A student who has completed at least one quarter or semester in the final year before graduation with a baccalaureate or higher degree may apply for early admission to graduate standing.

Two final, official transcripts indicating the student's graduation must be received in the Office of Admissions and Records. In order for the student to be granted early admission, the transcripts must be sent directly from the institution that has awarded the degree.

General Requirements: Each applicant must submit the following:

1. A completed Application for Admission, properly dated and signed;
2. A nonrefundable, $20 application fee;
3. Graduate-standing applicants must request that each college or university they have attended send *two*, official transcripts directly to the Office of Admissions and Records. A University of Nevada, Reno graduate is not required to submit transcripts of the credit earned at this university;
4. Graduate-standing applicants should contact the department/program to which they are applying in order to learn whether standardized test scores (e.g., GRE, GMAT) are required for admission consideration. Applicants should then follow the instructions given to them by the department/program;
5. Individuals eligible for resident fees are required to submit an Application for Resident Fees along with their admission credentials.
6. International student applicants must submit satisfactory scores on the Test of English as a Foreign Language (TOEFL) and a recently completed, medical history and examination (taken within the last six months) signed by a medical doctor.
7. Potential, international graduate teaching assistants must submit scores from the Test of Written English (TWE).

Test Score Requirements: Each student is responsible for completing the required examinations and for requesting that the official score reports be sent directly to the university's Office of Admissions and Records. The university's institutional code for test score reports is 4844.

Students may obtain information regarding test dates, costs and registration by contacting: Testing Services, Thompson Student Services Center, Room 105, University of Nevada, Reno, 89577. To contact the office by phone, call 784-4638. Students may also write directly to the respective testing organizations:

Graduate Record Examinations (GRE)
Educational Testing Service (ETS)
C N 6000
Princeton, NJ 08541-6000

Graduate Management Admission Test (GMAT)
Educational Testing Service (ETS)
C N 6104 Princeton, NJ 08541-6104

Test of English as a Foreign Language (TOEFL)
Test of Written English (TWE)
Educational Testing Service (ETS)
Regular Service C N 6153
Princeton, NJ 08541-6153

Students who tested at an earlier date and did not designate the University of Nevada, Reno to receive their score report(s), must request that the proper ETS agency forward an official score report directly to the Office of Admissions and Records. ETS requires a score report fee.

Academic Requirements: The academic requirements for admission to graduate study are noted, in detail, in the Graduate School section of this catalog.

Transfer Graduate Credit: Each graduate-standing student who plans to apply graduate credit earned at *another* institution toward an advanced degree at the University of Nevada, Reno must complete a Graduate Credit Transfer Evaluation Request form. Evaluation results are distributed to the student, adviser and graduate dean for reference in program planning. The forms are available in the Admissions and Records office.

Admission to Institutions Within the University and Community College System of Nevada

Individuals who wish to transfer to another institution within the state's university and community college system are required to submit an application for admission, payment of fees and supporting credentials directly to the appropriate admissions office, in accordance with established policy.

Admission of the transferring applicant and the acceptance of that student's transfer credit are governed by the advanced-standing regulations of the institution that receives the application for admission.

Footnotes

[1] The American College Testing Program (ACT), P.O. Box 168, Iowa City, Iowa 52243, and the Scholastic Aptitude Test (SAT), CN 6200, Princeton, New Jersey 08541-6200.

[2] Transcript note: All academic records must be submitted in the English language. Applicants who are enrolled in other educational institutions at the time of application may submit incomplete transcripts and end-of-course grade reports, but official, final transcripts of the work in progress must be submitted before final admission status may be determined.

Registration and Records

eriod of Registration

Instructions and specific dates for registration are published in ıe class schedule, which is available in the Office of Admissions ıd Records before the beginning of each semester. *Fees are due cording to the instructions listed each semester in the schedule of asses. Registration will be cancelled for nonpayment of fees.*

Returning Students: Students returning to the university after ı absence of one or more semesters are required to resubmit an pplication for admission by July 1 for the fall semester or Dec. 1 for ıe spring semester.

Each individual who attends another educational institution nce last enrolling at the university must submit official transcripts om each school attended whether credit was earned or not.

If you are an ineligible student and are approved for registra- on on the basis of incomplete or fraudulent credentials, or misrep- esentations in your written application for registration:

- Your registration shall be cancelled without refund of any fees;
- The total credits you have earned following readmission will e rescinded;
- Future registration at the university will be prohibited.

The director of admissions and registrar is responsible for the erification of documents and credentials. If it is determined that student sought registration on the basis of incomplete or fraudu- nt credentials, or misrepresentations in the written application r registration, the student is notified in writing of the director's ıtention to take action as listed above. The student then has 10 ays to reply in writing. The director makes a determination and ıen takes appropriate action, notifying the student in writing. The ıdent may file a written appeal to the university president within) days. The president's decision is final.

Late Registration Fee: A regular student who enrolls for seven redits or more (or the equivalent) after instruction begins is ıarged a late registration fee.

Clearance of Accounts: Students with records that indicate a elinquent indebtedness to the university are not permitted to gister, or receive a transcript of record, certification of enroll- ıent, or diploma.

dvisement for University Course equirements

Planning and Scheduling Classes: Prior to registration, stu- ents should seek academic advisement from their college adviser.

Required Courses: (Refer to the University Core Curriculum ction of this catalog.)

uthorized exemptions:

1. An ACT English standard score of at least 30 (or SAT verbal cores of at least 600), verified by a satisfactory written composition dministered and evaluated by English department personnel, ualifies a student for exemption from ENGL 101 and placement in NGL 102. Students do not receive credit for ENGL 101 as a result f this advanced placement.
2. The English requirement may also be satisfied by:

(a.) a College Board Advanced Placement Examination CBAPE) in English with a score of 3, 4 or 5;

(b.) a College-Level Examination Program (CLEP) general examination in English composition with a score at the 92nd percentile or higher;

(c.) a CLEP subject examination in college composition or freshman English with a score of at least 64 (92nd percentile);

(d.) an ACT Proficiency Examination (PEP) in freshman English with a score of at least 50, or a grade of at least "C";

(e.) satisfactory completion of a special department examination;

(f.) or acceptable transfer credit equivalent to ENGL 102. Each examination *must be supported by a satisfactory written essay.*

Each student is expected to complete the university's English requirement during the freshman year so that the aquired knowledge can be applied to the remaining courses in the degree program.

English as a Second Language (ESL): All undergraduate students for whom English is not their native language are required to complete the Test of English as a Foreign Language (TOEFL) for placement within the ENGL 111, 112, 113, 114 course sequence. A TOEFL score of at least 500 is required for placement in ENGL 111; a score of at least 550 is required for placement in ENGL 113. In order to meet the requirement for graduation, students must display a demonstrated proficiency in English by satisfactorily completing ENGL 114 or the equivalent.

International undergraduate students must register for the proper English course each semester until the ENGL 114 requirement is satisfied.

International graduate teaching assistants must achieve an acceptable score on the Test of Written English (TWE).

Mathematics: Students must complete three credits of 100- to 200-level (University of Nevada, Reno) mathematics courses at at least the MATH 120 level to satisfy the requirement for graduation. Excluded courses are MATH 122, 123, 210 and 480. Courses that meet the core curriculum requirement are MATH 120, 128, 176, 178 and 181.

The mathematics requirement may also be satisfied by earning three credits through the following examinations or transfer credit: (1.) CBAPE; (2) CLEP, general and subject; (3) special department examinations; or (4) by receiving equivalent transfer credit in comparable mathematics courses.

Requirements for Registration

Registration instructions appear each semester in the schedule of classes, which may be obtained from the Office of Admissions and Records.

Credit Load: The maximum number of credits students may take each semester, with the approval of the assigned faculty adviser, is 21 undergraduate credits or 16 graduate credits. Non-credit courses are considered as credit equivalents. Any exception to these regulations requires the advance written approval by the dean of the student's college. Graduate students must obtain the approval of the graduate dean.

Addition of Courses: Students may add courses or change course sections until the late registration period closes. Exceptions for individual cases involving illness, accident or similar emergencies may be allowed after this date, if approved by the dean of the student's college.

Audit to Credit: Students who initially register for a course as auditors and then seek to take the course for credit must make the change before the end of the late registration period.

Dropping a Course: Students may drop courses during the first *eight* weeks of the semester.

Students are not permitted to drop individual courses or change courses from grade to audit during the ninth week through the end of the semester. Under extenuating circumstances, including illness, accident or similar medical emergency or other hardship, as described in the incomplete policy, students have the option of either requesting an incomplete grade in one or more courses, or withdrawing from the university. In both cases, students must follow the rules listed in sections of the catalog regarding policy for the incomplete grade and withdrawal from the university.

Credit to Audit: Students may change courses from credit to audit during the first *eight* weeks of the semester. After the eighth week of the semester, no changes are acceptable.

Withdrawal from the University: Students wishing to withdraw from the university for the semester should contact the office of the special assistant to the vice president for student services, located at 105 Thompson Student Services Center, for an exit withdrawal interview and assistance in finalizing their withdrawal from the university. Consult the schedule of classes for specific information regarding exit withdrawal procedures. Students who leave the *university without officially withdrawing receive a failing grade in all courses.*

Change of College, Major or Adviser: Students may change their college, major or adviser by obtaining the proper form from admissions and records (or their college dean) and securing the required signatures. The completed form must be filed in admissions and records before it becomes final.

Students must satisfy the course requirements of the college or major to which they are transferring.

Removal from a Major: Students may be removed from a major at any time if found in violation of university conduct regulations or of the ethical standards of a professional program in which they are majoring. This action must be approved in writing by the dean of the college concerned, upon recommendation of the department faculty, and filed with the registrar.

Change of Name: A student may change his or her name by completing a change of name form in admissions and records, and then submitting a copy of appropriate, supporting documentation.

Cancellation of Courses: The university reserves the right to cancel any course in which the enrollment is insufficient to warrant offering the course.

Satisfactory/Unsatisfactory: Students pursuing a bachelor's degree may earn a maximum of 30 semester credits in courses graded on a satisfactory/unsatisfactory (S/U) basis, subject to the approval of each college.

1. Transfer students may earn a maximum of one-fourth of their remaining credits at the university on an S/U basis, providing the total does not exceed university policy.
2. Transfer students with more S/U credits than allowed by university policy are ineligible for additional S/U registration, except for required courses offered on an S/U basis only.
3. Each course taken to satisfy a university requirement must be completed with a regular letter grade.
4. Each college is responsible for determining the total number of credits earned with grades of "S", "P" or "Cr" and the specific courses (transfer, elective or required) that are acceptable toward a degree in that college, within the limits of the university maximum.
5. Each course that is approved for S/U grading *only* is so designated in this catalog for reference.
6. Credits and grades recorded in accordance with the satisfactory/unsatisfactory policy are applicable toward meeting graduation requirements, but are excluded when calculating the grade-point average.
7. Credit by exam is S/U only.

Procedure: Students are responsible for requesting the S/U grading option at the time of registration. Grading options other than a letter grade require approval by the adviser.

The instructor assigns an "S" or "U" grade to each student registered for this grading option.

Categories of Students

Regular: An individual who is admitted to a degree program is defined as a *regular* student and is classified according to the total number of semester credits completed.

A *regular* student may enroll either full time or part time for any given semester.

Nondegree: An individual who is not admitted to a degree program is defined as a *nondegree* student. Anyone who is at least 15 years old may register as a nondegree student. A nondegree student may register for a maximum of six undergraduate-level semester credits (or equivalent) in classroom instruction in one semester. This includes students in noncredit courses and those students registered as auditors. Although there is no limit to the number of credits that may be earned as a nondegree student, a maximum of 32 semester credits is acceptable toward a baccalaureate degree.

All *nondegree* students are governed by university regulations, including suspension and disqualification, and are encouraged to seek official admission at the earliest possible date.

Nondegree students may also register in courses offered through the Division of Continuing Education and in correspondence study.

Auditor: Students who wish to enroll for no credit may register as *auditors* with the approval of the department offering the course. While no credit or grade may be earned, auditors may, at the discretion of the instructor, receive the same class privileges as other students.

Auditing students whose performance in class is considered unsatisfactory may be dropped from the university, if a written authorization, signed by the instructor, department chairman and college dean, is filed in the Office of Admissions and Records.

Classification of Students

Undergraduate: Regular students are classified by the Office of Admissions and Records based upon the number of semester credits they have completed:

Freshman	29 credits or less
Sophomore	30-59 credits
Junior	60-89 credits
Senior	90 credits or more

Students usually must be classified as juniors or seniors in order to register for courses numbered 300 through 499.

Graduate: Regular students are classified at the time of official admission as either graduate special (those not seeking a degree) or graduate standing (those in graduate degree programs).

Full-time and Part-time Students

Undergraduate: Regular students who register for at least 12 redits in a given semester are defined as full-time. Those students egistering for 11 credits or less are defined as part-time.

Graduate: Regular students who register for at least nine cred-s are defined as full-time. Those students enrolled in eight credits r less are part-time.

Nondegree: Nondegree students are limited to a maximum of ix undergraduate credits or equivalent of classroom instruction ach semester.

Grades and Examinations

Grades and Marks

"A," the highest grade, is given for work of exceptional quality. Each credit earned with a grade of A carries four grade points.

"B" is awarded for better-than-average work. Each credit earned vith a grade of B carries three grade points.

"C" represents average work. Each credit earned with a grade of C carries two grade points.

"D" is the lowest passing grade for which credit is allowed—ach credit earned with a grade of D carries one grade point.

"F" represents failure. No credit or grade points are earned vith a grade of F. Failed courses count as credits attempted.

"S" and "U" indicate satisfactory or unsatisfactory perfor-nance in courses offered with this grading option, noncredit ourses and completed graduate courses involving a thesis or lissertation. A grade of S indicates achievement equivalent to an A, 3 or C for undergraduate courses. A grade of U represents perfor-nance equivalent to a D or F.

For graduate courses, a grade of S indicates achievement equiva-ent to an A or B. The grade of U represents performance equivalent o a C, D or F. Neither the S nor U grades are assigned a grade-point alue.

"AD" indicates audit and is given when a student registers in course for no credit.

"W" signifies that a course has been dropped or that a student has vithdrawn from the university with passing grades. The grade of W s not included in the grade-point average. After the first eight weeks f the semester, an F is given to students who are failing when they lrop courses or when they withdraw from the university.

"I" is a neutral mark and represents **incomplete**. An I is given vhen a student is performing passing work, but for some uncon-rollable reason is unable to complete the course requirements luring the instructional period. The I mark is excluded from grade-oint average computation.

An I mark given before the 1990 fall semester that is not made up vithin one calendar year from the date of issuance remains an I indefi-nitely. In such a case, students may only earn credit for the course by egistering for and then successfully completing that course.

Beginning with the 1990 fall semester, students are responsible or completing a Request for Incomplete form and for providing dequate evidence of their uncontrollable reason for issuance of he I mark. The form must be presented to the student's instructor efore assignment of final grades. Non-attendance, poor perfor-nance or requests to repeat the course are unacceptable reasons for ssuance of the I mark.

When the student's request for an incomplete mark is deemed cceptable, the instructor is required to indicate the specific work hat is necessary to complete the course. The instructor is also equired to indicate the student's approximate grade at the same ime as the issuance of the I mark. The department chair must pprove issuance of the I mark before the instructor files the ompleted Request for Incomplete form with the final class list. An assigned, incomplete mark that is not accompanied by an approved Request for Incomplete form is unacceptable. When this occurs, the student's grade will be recorded as an F.

Marks of I are automatically changed to F if they are not made up by the last day of the next regular semester (Summer Session excluded). Students are not permitted to graduate with an outstanding incomplete mark issued under this policy.

The extension of an incomplete mark for one semester may be requested. A completed and approved Request for Incomplete form must be filed by the instructor in the Office of Admissions and Records at least two weeks before the end of the semester in which the approved I mark expires.

Students may make up incomplete marks by completing outstanding course requirements before the end of the next regular semester. The requirements must be submitted to the student's instructor, who is responsible for reporting the final grade and acquiring the approval of the department chair and college dean. The written approvals must appear on the Grade Report for Incomplete form before the form can be filed in the admissions and records office.

"IP" signifies a course that is in progress, such as a master's thesis or doctoral dissertation. The grade is reserved for special courses that require more than one semester to complete. Students may not graduate with grades of IP on their record.

"NR" signifies that an instructor has failed to assign a grade to a student's course work. This grade is assigned by the registrar until the proper grade is determined. Students may not graduate with grades of NR on their record.

All grades of NR must be resolved by the last day of the following semester. Unresolved grades of NR become grades of F.

Repeat: Students may repeat a maximum of 12 lower-division credits. The course(s) must be repeated during the next regular semester in which the course is offered and the student is enrolled. The most recent grade earned in the course will be used in the grade-point calculation. Previous grades remain on the transcript. Students who wish to repeat courses must file an application in the Office of Admissions and Records.

Other university courses may be repeated to gain additional grade points. The number of credits repeated are added to those attempted, but no additional credits are earned.

Grades and Grade-point Average

Examinations: Instructors are responsible for the proper evaluation of enrolled students throughout the instructional period.

Final Grades: Instructors are responsible for determining and submitting final grades to the department chair concerned who, in turn, files the grades in the Office of Admissions and Records, where they become official records of the university. The grades shown on the student's grade report are considered final unless the student notifies the registrar within six months of the date of issuance that an error has occurred.

Grade-point Average: The grade-point average (GPA) is determined by dividing the sum of the earned grade points by the total number of attempted credits for a regular letter grade. The I, AD, W, NR, IP, S and U marks are excluded in computing the GPA.

Grade Changes and Appeals

Changing a Final Grade: After the final grades are filed in admissions and records, a grade may normally be changed only to correct a clerical error. For these changes, the instructor must file a completed Change of Grade form in admissions and records. The form must be approved by the department chair and the dean of the college.

Appealing a Final Grade: Students may appeal a final grade by filing an Intent to Appeal a Grade form with the appropriate department chair within 20 days of issuance of official grades by the registrar. Students who do not file the proper forms within the specified deadlines forfeit the right to appeal that grade. Appeal forms and specific regulations for this policy are available upon request in the Office of Admissions and Records.

Appealing Grades Received for Improper Withdrawal: Under certain circumstances, students who do not withdraw from the university in accordance with official procedures may appeal the grades they have received that semester. The appeal procedure applies *only to emergency or hardship situations, defined as follows:*

1. Personal illness or accident involving extended hospitalization, or
2. Sudden and unexpected departure from the area resulting in the student's inability to return to the university, e.g., death in the immediate family, induction to military service.

The appeal must be made for all course work in the semester in question and must be made within six months of the issuance of final grades, unless the student can demonstrate incapacity beyond that date.

It is the student's responsibility to support the appeal with written, documented evidence, such as an official hospital record, to substantiate the claimed hardship. In addition, if the date of departure from the university came after the free drop period, the student must also provide documented evidence from each instructor that he/she was passing each course listed on the record for that semester.

Students who meet the specified criteria and elect to file an appeal must submit a written statement with supporting documentation to the director of admissions and registrar. The appeal is then reviewed by the college dean.

Academic Renewal: Under certain circumstances, undergraduate students may petition the registrar for academic renewal. If the petition qualifies, students may have a maximum of two consecutive semesters of course work disregarded in all calculations regarding academic standing, grade-point average and graduation eligibility. If summer work is to be included in the disregarded course work, then a five-week summer term shall count as one-half semester.

Eligibility for academic renewal shall be subject to the following conditions:

1. At the time the petition is filed, at least five years shall have elapsed since the most recent course work to be disregarded was completed.
2. In the interval between the completion of the most recent course work to be disregarded and the filing of the petition, students shall have completed at least 15 credits of course work at an accredited institution of higher education with a grade-point average of at least 2.50 on all work completed during that interval. Courses taken during the interval may be repeats of previously attempted college work.

The student's filed petition shall specify the semester(s) or term(s) to be disregarded. If more than one semester or term is to be disregarded, the semester(s)/term(s) shall be consecutive, shall be completed within two calendar years and shall include no intervening enrollments at the universty.

If the petition qualifies under this policy, the student's permanent academic record shall be suitably marked to indicate that no work taken during the disregarded semester(s), even if satisfactory, may apply toward graduation requirements. However, all course work will remain on the academic record, ensuring a true and accurate academic history.

Academic renewal may be used once during a student's academic career and applied only to the first undergraduate degree.

Academic Recognition

Distinction at Graduation: Students who graduate with a GPA of at least 3.75 receive the bachelor's degree with high distinction, or with distinction if the GPA is between 3.50 and 3.74, provided these additional requirements are satisfied:

- At least ninety-six (96) semester credits are earned in courses graded A through F.
- At least sixty-four (64) semester credits are earned in residence at the university in courses graded A through F.
- Transfer students must satisfy the GPA requirement at the university and have a combined, transfer-university GPA of at least 3.75 for high distinction, or 3.50 to 3.74 for distinction.

Honors at Graduation: The requirements to graduate in the honors program are:

Cum laude, magna cum laude or *summa cum laude* is awarded to a graduating bachelor's degree student who completes the honors program and all university, college and major requirements with the specified GPA (both in the major program and overall), based upon at least 96 credits in courses graded A through F:

- *cum laude:* GPA of 3.50 to 3.69;
- *magna cum laude:* GPA of 3.70 to 3.89 with grade of A on senior honor thesis;
- *summa cum laude:* GPA of at least 3.9 with grade of A on senior honors thesis.

At least 64 semester credits must be earned in residence at the university in courses graded A through F. Each transfer student must satisfy the university requirements and have a combined transfer-university GPA that satisfies the minimum, specified total.

In order to complete the honors program, students must earn 18 or more honors points with at least nine points earned in major courses numbered 300 and above. For additional information, refer to the "Honors Program" description in the Interdisciplinary and Special Programs section of this catalog.

The Gold Medal: Awarded annually at Commencement, the Gold Medal for scholarship is presented to the graduating senior who has achieved the highest undergraduate grade-point average in all completed college work. Of the student's total number of accumulated credits, at least 120 semester credits must have been completed at the University of Nevada, Reno. The 120 semester credits must have been completed in regularly graded (A, B, C, D, F) courses involving classroom instruction.

Undergraduate Academic Standards

Class Conduct: Students may be dropped from class at any time for negligence or misconduct, upon recommendation of the instructor and with approval of the college dean.

Grade-point Deficiency: Undergraduate students have a deficient grade-point average when less than two grade points are earned for each registered credit, excluding those courses completed with grades of I, AD, W, NR, IP, S or U. A grade-point deficiency endangers students' academic standing and leads to the penalties described in the following sections on probation, suspension and disqualification.

Students pursuing the bachelor's degree may not earn credits or grade points in university courses numbered below 100 in an attempt to apply those credits toward a four-year degree or to remove a grade-point deficiency.

Probation

Conditions: Undergraduate students are placed on academic probation when the following circumstances occur:

1. The student's cumulative GPA is below 2.0.

2. The GPA for each of two consecutive semesters is below 2.0, even though the cumulative average is 2.0 or above.
3. The GPA for any semester is below 1.0.

Restriction: The credit load of a student on probation is determined in consultation with the assigned faculty adviser and, when necessary, the dean of the appropriate school or college.

Release from Probation: Undergraduate students who have increased their GPA to 2.0 on the cumulative record are no longer on probation. Students who had an overall GPA of 2.0 or above at the time probation occurred are no longer on probation when their final semester grades indicate they have achieved at least a 2.0 average for the last semester.

Suspension

Conditions: Undergraduate students who are deficient by at least 15 cumulative grade points at the end of any semester are suspended from the university. In addition, if the student's class preparation, attendance or progress toward a degree is deemed unsatisfactory, the student may be suspended from the university at any time.

Penalty: Suspended students may not register du*ring the fall or spring semester for any university course that involves classroom instruction* for credit. Noncredit or audit enrollment is permitted.

Requirements for Readmission: To qualify for readmission, undergraduate students must earn a minimum of six or more acceptable semester credits if on first suspension, or at least 12 acceptable semester credits if on second suspension, with at least a 2.5 GPA. These credits may be earned in correspondence study, university summer session or at another regionally accredited, educational institution. Courses that are not acceptable as a basis for readmission include: those courses in which credit has already been earned, courses failed previously, courses completed for audit and nonbaccalaureate, nontransferable courses. The university's suspension and disqualification regulations do not apply to a suspended student until official readmission occurs.

Students seeking readmission following their first suspension from the university who have not attended the university for a period of at least five (5) years, and who do not meet the stated readmission requirements, may be considered on the individual merit of each case by the director of admissions and registrar. Readmission under this procedure requires the joint approval of the appropriate academic dean.

Student who are readmitted after suspension are on probation. Students will be suspended a second time whenever their GPA at the end of any semester is less than 2.0 and their total grade-point deficiency is at least 15.

When the student's grade-point deficiency is reduced to 14 or less, regular probation and suspension rules apply.

Readmission Procedures: Student under academic suspension may apply for readmission whenever credit and grade requirements are satisfied as stated. Students must submit an application for readmission to the director of admissions and registrar by June 15 to be considered for the fall semester or by Dec. 1 for the spring semester.

Students also must submit official transcripts for evaluation if they have attended other educational institutions after being suspended from the University of Nevada, Reno.

Applications for readmission are available upon request from the Office of Admissions and Records, located in the lower level of the Clark Administration Building.

Disqualification

Conditions: Students readmitted after a second academic suspension are on probation. Disqualification occurs whenever the student's undergraduate GPA, at the end of any semester, is less than 2.0 and the total grade-point deficiency is at least 15. When the grade-point deficiency is reduced to 14 or less, regular probation and disqualification rules apply.

Penalty: Disqualified students may register only as auditors or in a noncredit course. After a period of two years from the date of disqualification, students may apply for readmission by filing a letter of appeal in admissions and records. Each case is considered on its own merits, and no individual case is considered as establishing a precedent.

If the student's appeal is upheld, registration for credit is authorized in Summer Session or correspondence study at the university. Upon completion of at least 12 acceptable semester credits with an overall GPA of at least 2.5, the student qualifies for readmission on probation.

Graduate Academic Standards

Graduate students are subject to the academic standard regulations published in the Graduate School section of this catalog.

Graduate special students who are suspended because of graduate credit grade-point deficiencies may register in *undergraduate courses only*.

Requirements for Graduation

Catalog: Students may elect to graduate under the degree requirements for their year of admission and registration, the requirements for the year in which they were accepted to their major (at graduation), or the requirements for their year of graduation. Students may not use a combination of these graduation requirements.

In the case of re-entry after a leave of absence of more than five years, students may use the requirements of their year of re-entry, the requirements for the year in which they were accepted to their major (at graduation), or the requirements for their year of graduation. Students may not use a combination of these graduation requirements. When course offerings or prerequisites within the student's academic major have changed, the major department shall determine acceptable alternatives.

Community college students in the University and Community College System of Nevada (UCCSN) may use the catalog in effect during the year of their admission to the community college—provided admission to the University of Nevada, Reno is within a five-year period from the student's initial enrollment in a baccalaureate-level program at the community college.

Students who matriculate to the university beginning in the 1987 fall semester, or those who elect to graduate under the requirements listed in the 1987-88 catalog or later, must satisfy the mathematics graduation requirement, as specified in the "Advisement for University Course Requirements" description in this section of the catalog.

Degrees, diplomas or certificates may not be granted unless all university requirements are fulfilled. A degree, diploma or certificate that is awarded in error, or upon fraudulent claims, will be withdrawn immediately and the student's record will be corrected accordingly.

Academic Requirements: In order to graduate, students are required to have a minimum cumulative GPA of 2.0, including all postsecondary course work attempted. In addition, students must earn a University of Nevada, Reno GPA of at least 2.0. This requirement includes all repeated courses and excludes those

courses in which the student has received marks of AD, I, NR, IP, S, U and W (Audit, Incomplete, Not Reported, In Progress, Satisfactory, Unsatisfactory and Withdrawal). Additional academic requirements may be established by the dean of an individual college.

Course Requirements (For students entering the university before the 1989 fall semester): In addition to the courses specified by each school or college, university course requirements in constitution (U.S. and Nevada), English, mathematics, natural science, and social science or humanities must be satisfied by each degree. Specific course information is available in the appropriate college dean's office.

The three-credit natural science course and the three-credit social science or humanities course are determined by the individual college from which the student is graduating.

Credits earned by examination are applicable, except for the U.S. and Nevada constitution requirement, which must be satisfied by the completion of an appropriate course. A single course may satisfy only one university requirement in English, mathematics, natural science, and social science or humanities.

Any course offered for credit by the university may be used to fulfill degree requirements, provided the course is at a proper level and is deemed acceptable by the appropriate college dean as part of the student's approved program of study. Mere accumulation of credits does not assure fulfillment of degree requirements.

Each first-time freshman student entering the university, beginning with the 1989 fall semester, must satisfy the university core curriculum along with the college, department and major requirements for graduation.

Each transfer student entering the university, beginning with the 1990 fall semester, must satisfy the university core curriculum along with the college, department and major requirements for graduation. Transfer students who began transfer course work at a UCCSN institution before the 1990 fall semester do not have to satisfy the university core curriculum requirements.

Resident Credit Requirements: Candidates for a bachelor's degree at the University of Nevada, Reno must complete 32 upper-division credits in residence. Students who have completed the residency requirement and have no more than 12 credits remaining to complete their degrees may petition to graduate *in absentia*. Students must obtain permission from their college deans to graduate *in absentia*. Students must not exceed the total number of transfer credits allowed toward the bachelor's degree.

Authorized exceptions to this rule include:

1. Preprofessional students who complete at least 96 credits in residence at the university may transfer a maximum of 32 semester credits of satisfactory course work from an accredited professional school toward a bachelor's degree. In order to apply the transfer credits, such students *must satisfy all* department, college and university requirements for graduation.

2. Prephysical therapy students who complete the required 96 credits of prephysical therapy curriculum, with the last 40 credits in approved residence at the university, may complete the remaining 32 credits required for graduation by satisfactorily completing a 12- to 24-month certification course at an approved school of physical therapy.

3. Any course that is satisfactorily completed at the university for credit, except credit earned by special examination or correspondence study, is considered resident credit at the campus sponsoring the course. (Off-campus courses do not satisfy the on-campus resident credit requirement.) Credit earned by correspondence study, special examination, or enrollment in another institution within the University and Community College System of Nevada does not constitute an interruption of resident credit.

Application for Graduation: University of Nevada, Reno students should follow these instructions in applying for graduation:

1. Upon payment of the $25 graduation application fee* to the Cashier's Office in Ross Hall, students will be given an Application for Graduation form.

2. Students should complete the application carefully and thoroughly.

3. Students should take the completed application to the assigned adviser in their major department. The adviser and department chair will review the student's eligibility for graduation and then forward the application to the college dean's office for approval. The dean's office then will forward the application to the Office of Admissions and Records for a final graduation check.

4. The appropriate college dean's office must receive the student's completed and approved application by the following dates:

- Feb. 5 for May graduates
- May 1 for August graduates
- Sept. 10 for December graduates

5. Late applications will not be accepted. It is the student's responsibility to make sure that the appropriate dean's office receives the completed and approved application on time. Students should meet with their advisers early enough to ensure that their applications are processed adequately.

6. Students who do not graduate during the graduation period for which they have applied must submit a new graduation application, along with the graduation application fee. Students must meet the appropriate application deadlines.

7. Note on diplomas: Diplomas are mailed to students approximately 12 to 16 weeks after graduation.

8. The Office of Admissions and Records maintains one address listing for each student. Students who want their diploma and *all* future correspondence from the university mailed to a different address than the listing currently on file, should contact the Office of Admissions and Records.

* Students with severe financial hardship may petition the registrar for fee substitution. If the petition is approved, the student will work voluntarily in the Office of Admissions and Records.

Credit Requirements for Bachelor's Degrees

Students must complete a minimum of 124 semester credits to graduate with a bachelor's degree from the University of Nevada, Reno. Individual schools and colleges at the university may require additional credits.

Second Undergraduate Degrees

Students may earn a second bachelor's degree, provided all specified requirements are satisfied.

Candidates for a second degree must earn at least 32 additional upper-division credits in residence after receiving the first degree and must satisfy specific course requirements prescribed by the appropriate school or college.

Under certain circumstances, students may be approved to pursue two bachelor's degrees simultaneously, subject to the same requirements, as long as the dual degree has a different name. Students must file a dual (or second) degree declaration form in admissions and records. The dual degree declaration form should be supported by a copy of the additional degree program as approved by the department adviser and dean of the college concerned.

The regular graduation application and fee payment procedures apply for each degree that the students seeks.

ual Undergraduate Majors

Students may complete two majors within the requirements of ıe bachelor's degree program. The request to plan a second major ust be made to the assigned faculty adviser before the student's nior year. The second major program must be approved in nsultation with the appropriate department and college dean.

Upon approval, students must complete a dual major declara- ın form in admissions and records, along with a copy of the pproved, second major program. Upon completion of all degree quirements, the two majors are listed on the student's application r graduation. The student's adviser and the appropriate college ean then approve the application before it is filed in admissions d records.

ndergraduate Minors

Each department offering an approved major, or any university terdisciplinary committee or board, may propose a minor for ficial program approval. A minor program requires students to mplete at least 18 credits, including nine or more credits in pper-division courses.

The program requirements for approved minors are specified in e college and department sections of this catalog. Students who mplete the program requirements must list the minor on the pplication for graduation. The application must be approved by the udent's adviser and the appropriate college dean before it is filed in lmissions and records. The student's minor is indicated on his/her ficial records when all graduation requirements are satisfied.

Undergraduate Thesis

Whenever a thesis is required for an undergraduate degree in any department, school, or college of the university, and such thesis is to be filed in the university.

Advanced Degrees

For specific information about graduate and professional degrees at the university, refer to the Graduate School section of this catalog.

Transcript of Record

Upon the written request of eligible students and the payment of proper fees, the Office of Admissions and Records issues official transcripts of the student's permanent records. (Refer to the Fees and Expenses section of this catalog for transcript fee payment instructions and the university's statement on payment of accounts.)

Transcripts of record do not show grades or credit earned on work in progress until the respective semester or registration period officially closes. Transcript orders must be placed in advance to provide adequate time for processing.

Regulations for Student Records

Confidentiality and Release of Information

The confidentiality and security of student educational records are of primary importance to the university.

As amended, the Family Educational Rights and Privacy Act of 1974 ensures that eligible students have the right to inspect and review educational records, files and other data; to waive the right of inspection and review of confidential letters and statements of recommendation filed since Jan. 1, 1975; to challenge the content of educational records to ensure that it is not misleading or inaccurate; and to preclude any or all directory information from being released.

Student access is **not permitted** to the financial statements of parents; to confidential statements and recommendations filed prior to Jan. 1, 1975; to records that the student has waived the right to inspect; to records of instructional, supervisory and administrative personnel; to records of the law enforcement unit of the university, which are kept separate from educational records, maintained solely for law enforcement purposes and available only to law enforcement officials of the same jurisdiction; to records that are created and maintained by a physician, psychiatrist, psychologist or other recognized professionals or paraprofessionals acting or assisting in a professional or paraprofessional capacity; or to university records that contain only information relating to a person after that person is no longer a student. Requests for review of educational records are processed within 45 days of submittal.

The university does not allow access to, or the release of, educational records or other personally identifiable information without the written consent of the student, except that the university must disclose information to students requesting review of their own records and to authorized governmental officials or agencies for audit and evaluation of state and federally supported programs.

The university may disclose, without a student's written consent, educational records or other personally identifiable information to full-time university employees having authorized access; to the director of admissions and registrar and/or appropriate officials of another school or school system in which the student intends to enroll; to people or organizations providing student financial aid; to accrediting agencies involved in accrediting functions; to parents of a student whose status as a dependent has been established according to the Internal Revenue Code of 1954, Section 152; in compliance with a judicial order or lawfully issued subpoena; to authorized officials in connection with an emergency, if knowledge of the information is necessary to protect the health or safety of a student or other people.

The written consent must be signed, dated and should include the birthdate of the student. The written consent must specify the educational records to be disclosed, the purpose or purposes of the disclosure and the party or parties to whom the disclosure may be made.

Directory information is considered public and may be released without written consent unless specifically prohibited by the student concerned. Data defined as directory information includes: student names, major fields of study, student participation in officially recognized activities and athletics, weight and height measurements for members of athletic teams, dates of attendance, degrees and awards received, and listings of the most recent educational agency or institution that students have attended. In general, directory information *is not* available until each registration period closes.

A student may restrict the publication of information that appears in the fall semester campus directory, and the release of directory information, by completing the proper section of the registration form, or by notifying the Office of Student Relations, located at 104 Jot Travis Union, immediately following registration.

Each office in which students' financial records are filed maintains a record of requests for the release of personally identifiable information.

Retention and Disposition

The maintenance, retention and disposition of documents relating to student educational records are governed by institutional policy.

A listing of documents and disposition schedules filed in the Office of Admissions and Records includes:

1. The permanent academic records of students are retained indefinitely.

2. Applications for admission and/or readmission; transcripts issued by other institutions; applications for resident fees; military service documents; undergraduate admission evaluations; advanced standing admission evaluations, including CBAPE, CLEP and ACT-PEP; changes of college, major or adviser; and pertinent correspondence are retained for one year following graduation or one year after the student's last date of attendance.

3. The admission files of students who do not register, disapproved or incomplete admission files, registration changes, withdrawal forms, transcript requests and disciplinary action notices are retained in admissions and records for one year.

The fee for document reproduction is $2 per copy. University policy prohibits reproduction of transcripts and similar documents issued by other educational institutions.

Regulations for Determining Residency for Tuition

Regulations for Tuition Charges

The Office of Admissions and Records is responsible for determining, for tuition purposes, the residence status of students enrolled at the University of Nevada, Reno.

Each student claiming legal residence in Nevada must submit an Application for Resident Fees form. Recent Nevada high school graduates, whose parents' permanent address is listed as being in Nevada, are exempt from this procedure.

Information and application forms are available upon request in the Office of Admissions and Records.

The following regulations are Board of Regents' policy for all institutions in the University and Community College System of Nevada:

SECTION 1. Purposes

It is the purpose of these regulations to provide uniform rules throughout the University and Community College System of Nevada and all member institutions thereof, in determining whether students shall be classified as in-state students or out-of-state students, for tuition purposes.

SECTION 2. Definitions

1. The word *tuition* means a charge assessed against out-of-state students which is in addition to registration fees or other fees assessed against all students.
2. The term *bona fide resident* designates a person who resides in the state of Nevada with the intent of making it his true, fixed and permanent home and place of habitation, having clearly abandoned any former residence and having no intent to make any other place outside of Nevada his home. It also includes a person who is a member of the armed forces of the United States who has previously established a bona fide residence in the state of Nevada, but who has been transferred to a military posting outside of the state of Nevada while continuing to maintain a legal residence in Nevada. When residence for a particular period is required in these regulations, this shall mean that the person has been physically present and residing in the state during all the period for which residence is claimed.
3. The words *he* and *she* shall apply to the female person as well as the male, unless the context clearly requires otherwise.
4. The word *family* means the father or mother of the student, or the legal guardian of the student, if appointed by a court at least six months prior to the date of matriculation and for purposes other than avoidance of tuition.
5. The term *date of matriculation* is the date of the first day of instruction in the semester or term in which enrollment first occurs, except that for a student at the University of Nevada School of Medicine, the *date of matriculation* shall be the date that notice is sent that the student has been admitted to the medical school.
6. The term *legal residence* means a person's place of fixed residence to which he intends to return, despite temporary residences elsewhere or despite temporary absences.

SECTION 3. Tuition Charges

Tuition shall be charged to those persons classified as out-of-state students registering for seven credits or more in a given semester at any member institution of the University and Community College System of Nevada; however, that registration in Community College Division community service courses which are not state-funded shall not cause tuition to be assessed, nor shall such enrollment be included in *date of matriculation* for evaluation of residency.

SECTION 4. Rules for Determining Status

1. A person who is not classified as an in-state student under these regulations shall be classified as an out-of-state student.
2. All students whose families are bona fide residents of the state of Nevada shall be classified as in-state students.
3. For the purposes of determining tuition, a student who, at the date of matriculation, as defined in Section 2.5 of this chapter, is and has been a bona fide resident of the state of Nevada for at least six (6) months prior thereto, shall be classified as an in-state student.
4. An applicant for admission to the University of Nevada School of Medicine who has been a bona fide resident of the state of Nevada for at least six (6) months prior to the last day for filing an application for admission to the school (Nov. 1 of each year) shall be classified as a Nevada resident for the purposes of being considered for admission to the University of Nevada School of Medicine.
5. A student who is a member of the armed forces of the United States, stationed in Nevada, or whose spouse, parent or guardian (as defined in the word *family*) is a member of the armed forces and stationed in Nevada, shall be entitled to classification as an in-state student.
6. A person who has attended a member institution of the University of Nevada as an in-state student may continue or return in that status without subsequent reclassification because of changed circumstances, unless he has abandoned his Nevada residence and established residence elsewhere.
7. When a student who has been classified as an out-of-state student becomes eligible for classification as an in-state student, such reclassification shall become effective at the next registration period.
8. All public school teachers who are employed full time by the school districts in the state of Nevada are classified as in-state students.
9. All full-time teachers in private schools in the state of Nevada whose curricula meet the requirements of NRS 394.130 shall be classified as in-state students.
10. A student who matriculates as an out-of-state student and thereafter resides in the state while attending the university is presumed to be residing in the state temporarily for the purpose of attending school and not as a bona fide resident. The student may qualify for reclassification as an in-state student only if the presumption is rebutted by clear and convincing evidence that the student has resided continuously in the state of Nevada for a period of at least 12 months as a bona fide resident with the intention of making Nevada his true, fixed and permanent home, having clearly abandoned his former residence and domicile, and having no intention of making any other place outside of Nevada his residence and domicile.
11. A student who registers and enrolls but does not attend classes may, for purposes of these regulations, withdraw from the university and be deemed not to have matriculated. Any determination concerning his residence status will be voided until such time as he shall again apply for admission.
12. An alien student holding a permanent immigrant visa and otherwise meeting the requirements for in-state student status shall be classified as an in-state student. Alien students holding other types of visas shall not be classified as in-state students, except as may be required by federal law upon due consideration of evidence of in-state residence.

13. A student who is attending the University of Nevada, Las Vegas or the University of Nevada, Reno through the National Student Exchange Program shall be entitled to classification as an in-state student for tuition purposes, and for tuition purposes only, during the time of the exchange. Time spent in Nevada while a student is on exchange shall not be counted toward satisfying the residence requirements as described in Section 4.3 above, nor shall such enrollment be included in the *date of matriculation* for evaluation of residency.

GUIDELINES FOR DETERMINING CHANGE IN TUITION STATUS

The following are guidelines to assist University and Community College System of Nevada personnel in making determinations on applications for changes in tuition status under Section 4.10 of these regulations:

Residence in Nevada While Attending Any Institution of the University and Community College System of Nevada: A student attending any institution of the University and Community College System of Nevada who has matriculated as an out-of-state student is eligible for reclassification as an in-state student if the student has resided continuously in the state of Nevada for a period of at least 12 months and the student can present evidence of intention to become a bona fide resident:

a. Registering to vote in Nevada;
b. Obtaining a Nevada driver's license, if the student drives an automobile;
c. Registering in Nevada any vehicles owned by the student;
d. Filing a federal income tax return in Nevada.

If the student does not provide all of the evidence stated in paragraphs a. through d. above, the system will consider other convincing, independent evidence which the student may wish to present to prove intent to become a bona fide resident.

SECTION 5. Application of Regulations

It is the intent of the Board of Regents to apply these regulations, effective immediately. The application of these regulations shall not affect the status of any student now classified as an in-state student. Any person who is now classified as an out-of-state student, but who, under these regulations, is eligible for reclassification as an in-state student shall, upon application, become eligible for such classification at the time of the next registration period. No reclassification under these regulations shall give rise to any claim for refund of tuition already paid to the University of Nevada.

SECTION 6. Determination of Status

Each member institution of the University of Nevada affected shall implement these regulations through the Office of Admissions and Records on each campus, under the direction of the president. The president of each member institution shall establish an appellate procedure, whereby the student may appeal decisions of the admissions office concerning tuition or his status as an in-state or out-of-state student to an appellate board, which will hear evidence and make a final determination. The student may appeal the decision to the appellate board within 30 days from the final determination by the admissions office. In the event the appeal is not taken within that time, the decision of the admissions office shall be final for that school term.

In determining whether a person is a resident of Nevada for tuition purposes, the appellate boards may consider such available evidence as may demonstrate permanent, bona fide residence in the state for purposes other than going to school. A person who leaves home from another state to attend an institution of the University and Community College System of Nevada with the intention of doing so as a student and remaining in the state until the student's education is completed does not acquire Nevada residency. The student's intention to remain permanently in the state even after his education is completed must be demonstrated.

The presentation by a person of one or more items of evidence as indications of bona fide residence is not conclusive on the issue of residency. Instead, in making determinations on the question of residency, the appellate boards shall consider each such matter on case-by-case basis and shall give the evidence presented as indications of residence the weight and sufficiency it deserves, after taking all available evidence into consideration.

SECTION 7. Exceptional Cases

In exceptional cases, where the application of these regulations works as an injustice to an individual who technically does not qualify as an in-state student, but whose status, either because of the residence of the student or his family is such as to fall within the general intent of these regulations, then the Appellate Board shall have the jurisdiction to recommend that such students be classified as in-state students. If the recommendation is approved by the president, the student shall be so classified. The intent of this provision applies only in the infrequent, exceptional cases where a strict application of these regulations results in an obvious injustice.

Regulations for Reduced Nonresident Tuition

On Feb. 23, 1990, the University of Nevada Board of Regents approved the following policy to be effective beginning with the 1990 fall semester:

Children of University of Nevada, Reno Alumni: Children of University of Nevada, Reno alumni, who graduated with a baccalaureate degree, and who reside outside the state of Nevada, are eligible for reduced nonresident tuition of $200 per semester upon application, when enrolling in undergraduate studies only at the university.

On Jan. 26, 1988, the University of Nevada Board of Regents approved the following policy to be effective beginning with the 1988 fall semester:

Good Neighbor Nonresident Tuition Policy: A graduate of a high school or community college in a northern California county, bordering on Nevada, may be charged reduced nonresident tuition when enrolling at the University of Nevada, Reno; Northern Nevada Community College; Truckee Meadows Community College; or Western Nevada Community College. Furthermore, an individual who resides in a qualifying county, and who has maintained a legal, bona fide, resident status for a period of at least 12 consecutive months prior to the first day of the semester in which enrollment is sought, may also be charged reduced nonresident tuition.

The reduced nonresident tuition for approved applicants is $200 per semester. The policy is effective for each qualified student who is approved for admission and enrollment effective for the next semester. Students approved under this policy are ineligible for any claim for refund of nonresident tuition already paid to the University of Nevada, Reno.

The list of approved California counties includes: *Alpine, El Dorado, Inyo, Lassen, Modoc, Mono, Nevada, Placer, Plumas and Sierra counties.*

Application forms are available upon request from the Office of Admissions and Records, Lower Floor, Clark Administration Building, or by calling the Office of Communications, (702) 784-INFO.

Western Undergraduate Exchange (WUE): Students who claim residence in a state that participates in the Western Undergraduate Exchange may be eligible to attend the university at reduced tuition cost. For further information, contact the Western Interstate Commission for Higher Education (WICHE) office in your state. In Nevada, contact the WICHE office at 784-4900.

Fees and Expenses

All assessed fees are subject to change by the Board of Regents. The Board of Regents uses the Western Interstate Commission for Higher Education (WICHE) average rates of member states for the primary guide to establish tuition and fees. Every effort is made to keep the fees as low as possible and still provide the desired level of service.

Statement on Students' Payment of Accounts

Students or former students having a delinquent account with the university are not permitted to register, receive a transcript of record, receive a certification of enrollment or earn a diploma.

Accident and Health Insurance

An accident and health insurance plan is available to all students who pay the Health Center fee. Students can purchase coverage during registration or at the Cashier's Office in Ross Hall. Further information about the insurance plan is available at the Student Health Center.

Admission to Intercollegiate Athletic Events

Undergraduate students registered for at least seven credits are entitled to admission to intercollegiate athletic events according to regulations established by ASUN and the university's athletic department.

Application Fee

Prospective students making application for admission to the university are charged a fee of $20, which is not refundable nor applicable to any other fee. The fee is payable at the Cashier's Office in Ross Hall.

Fees for Senior Citizens

Individuals who are at least 62 years old are permitted to register for credit or as auditors in any course without fee, except as noted below. However, lab fees and special instruction fees are not waived. Such registration does not entitle a person to any privileges usually associated with registration, e.g., student association membership, health service or intercollegiate athletic tickets.

Enrollment in Summer Session or off-campus credit courses is permitted for half the regular registration fee, which does not cover lab fees or special instruction fees. Programs must be self-sustaining for reduced fee benefits to be applicable.

There is no fee reduction nor waiver for courses in Independent Study by Correspondence, field study programs, Elderhostel, ElderCollege or noncredit classes, as these programs are totally self-supporting and have no state underwriting for older students.

Nondegree students who are native speakers of a foreign language may be permitted to register without fee for credit or audit in literature courses in their native languages.

Four-year Medical Program

The registration fee for medical students is $2,783 per semester. Nonresident students are charged tuition of $6,594.50 per semester.

Graduation Fee

Students who graduate with a bachelor's, master's, professional or doctoral degree, or those students who receive an education specialist certificate, are required to pay a $25 graduation fee. Students are required to pay the $25 graduation fee each time they file a graduation application.

Housing and Food Service Fees

Double-occupancy residence with a 15-meal plan at the University Inn and the five university residence halls ranged from $3,460 to $3,600 in the 1991-92 school year. The Board of Regents approves all fees annually. There is a wide range of meal plan options in combination with single- or double-room accomodations. A new residence hall with suites and kitchenettes is scheduled to be completed in 1993.

Currently the license agreement for residence halls and food service is for the entire academic year. Fifty-five percent of the annual rate for housing and food service is payable for the fall semester; 45 percent is payable for the spring semester. For the spring semester-only agreement, the rate is 50 percent of the annual payment.

The Board of Regents permits students to make deferred payments of room and board fees under certain conditions. For further information about approved fees and payment options, contact the Housing office at 784-1113 or the University Inn at 323-0321.

Cancellations and Refunds

Once the student has signed the housing/food license agreements, the student is obligated to pay these fees for the academic year.

If a student cancels the license agreement before Aug. 1, all fees except the deposit will be refunded. Students who cancel license agreements between Aug. 1 and the opening date of the residence halls will forfeit the $100 deposit, in addition to 25 percent of the room charge for the semester. If a student cancels his/her license agreement for reasons authorized by the university, after the student has officially checked into a university residence hall or apartment, refunds will be made only to those people who receive approval in accordance with Residential Life and Housing policy.

Refunds for room and board are issued according to the following schedule:

- Cancellation through the second week of classes – 75 percent refund;
- Cancellation from the third through sixth week of classes – 50 percent refund;
- Cancellation from the seventh through eighth week of classes – 25 percent refund;
- Cancellation after the eighth week of classes – no refund issued.

Registration Fees

The registration fee for undergraduate-level courses (001-499) is $54.50 per credit. Graduate-level courses (500-799) are $74 per credit. Students who are exceptions to this fee policy include medical school students and students who are at least 62 years old. Summer Session fees are published in the summer school publications.

Continuing education fees vary by course and program. Information about specific charges is available upon request from the Division of Continuing Education.

Late Registration Fee

Students are expected to complete registration during the designated period and are assessed a late fee if they do not meet registration deadlines. The late fee is $5 for each day to a maximum of $25 for the fifth day or later. The late registration fee is applicable only to undergraduate and graduate students registered for at least seven credits during the fall and spring semesters.

In the event the university does not provide adequate time for registration, the registrar may defer the assessment of this fee one day. This decision is made during the final hours of the scheduled registration period.

Special Instruction Fees

The fees assessed for specialized instruction depend entirely upon current costs. Special instruction fees are required for:

1. Courses requiring equipment, facilities or materials not available on the university campus; for example, bowling, golf or certain field courses;
2. Private instruction in music and in similar arts;
3. Noncredit courses, conferences, workshops, postgraduate professional seminars and similar educational offerings;
4. Personal expenses of students incurred in connection with field trips or laboratories.

Student Associations

All students registered for at least seven semester credits are members of Associated Students of the University of Nevada (ASUN) as undergraduates and Graduate Student Association (GSA) as graduate students.

Student Health Center

Students may pay an optional fee of $50 per semester to be entitled to the services offered by the Student Health Center. A $10 late fee applies to those students who pay the health center fee after the late registration period ends. Health Center services are available at the same rate to students' spouses. Students must pay the Health Center fee in order to purchase the supplemental accident and health insurance coverage.

Transcript of Record Fee

A fee of $2 must be paid in advance for each transcript of record. The fee is payable at the Cashier's Office, located in Ross Hall.

Tuition for Nonresidents

Tuition of $2,025 per semester is charged undergraduate and graduate students (excluding four-year medical students), registered for at least seven credits, if those students are nonresidents of Nevada. This policy is in conformity with Sections 10.020 a 396.540, Nevada Revised Statutes. Each student is responsible providing documentary proof of Nevada residence on the appli tion provided through the Office of Admissions and Records. T tuition fee is in addition to the per-credit registration fee. Tuitio $200 per semester is charged to nonresident students who approved under the "Good Neighbor" policy.

Other Fees

Students may incur other fees while attending the univers including the following:

- American College Testing Program (ACT) examination, $2 taken at a time other than national test dates;
- Special examination fee, $25 per course;
- SOAR orientation fee, $20 for students, $15 for parents family members, $5 per child under 16;
- Placement Office fee for opening placement files, updat files or reactivating credentials, $10 (Placement Office fee computer use is $15);

Deferred Payment Option

Deferred payment is available to students who are registe for at least seven credits. Special course fees, the health center and accident and health insurance fees are not deferrable portion of the residential hall and food service fees may als deferred.

Approximately one-half of the total payment due is pay upon registration. The balance is due in two equal installments first due at the end of the sixth week of instruction and the sec due at the end of the 10th week of instruction. This optio available during the fall and spring semesters only.

Any unpaid balance on a deferred fee payment becom student accounts receivable on the due date and is treated a official fee hold for future registration and transcript privileg penalty fee of 10 percent (minimun of $10) is charged on deferred balance not paid by the due date.

Grant-In-Aid and Accounts Receivable

Students are expected to pay all assessed fees during registra unless they are entitled to a grant-in-aid, elect the deferred pay plan or make arrangements, prior to the day of registration, wit Controller's Office for an accounts receivable procedure.

Payment by Credit Cards

MasterCard, VISA or Discover Card are accepted for pay of registration and housing fees. Payment may be made in pe or by mail.

Payment by Personal Check

Personal checks are accepted for payment of fees or bills du university. The university does not furnish counter checks, checks altered in any way are not accepted. A $15 collection assessed for any check returned unpaid by the bank. Such ch must be made good within 10 calendar days after notificati suspension procedures are instituted.

efund of Fees

egistration Fees

1. All registration fees are refunded for net credit-load reductons made on or before the last day of registration. No refund of gistration fees is granted for courses dropped after the last day of te registration.

2. All registration fees are refunded when students withdraw om the university by the last day of registration. When students ithdraw from the university after the last day of late registration nd before the sixth calendar week of instruction, a 50 percent fund of fees is granted. No refund of fees is granted thereafter. ees must be paid in full to be eligible for a refund.

Ionresident Tuition

1. All nonresident tuition is refunded for net credit reduction to x credits or less in a semester. All nonresident tuition is also funded when students officially withdraw from the university n or before the last day of late registration.

2. No refund of nonresident tuition is granted when students rop courses after the last day of late registration.

3. A 50 percent refund of nonresident tuition is granted for fficial withdrawal from the university, if completed after the last ay of late registration and before the end of the sixth calendar eek of instruction. No refund of fees is granted thereafter. Tuition ust be paid in full to be eligible for a refund.

Date of Refunds

Refunds of registration fees and nonresident tuition are issued near the end of the first six weeks of instruction.

Insurance and Special Fees

1. The optional hospital and accident insurance premium is nonrefundable, but remains in force for the duration of the policy.

2. Refund of course-related special fees are prorated on the basis of actual usage. Authorization for a refund of special fees must be originated by the department chair.

Refunds for Exceptional Circumstances

Upon presentation of documentation to the special assistant to the vice president for student services and approval of the vice president for student services, a full refund of registration fees and nonresident tuition is given upon official withdrawal from the university at any time during the first eight weeks of the semester in the following instances:

1. Induction of the student into the United States armed forces.
2. An incapacitating illness or injury that prevents the student from returning to school for the remainder of the semester.
3. Death of the student.
4. Death of the student's spouse, child, parent or legal guardian.

No refund is made if withdrawal is after the eighth week of instruction, regardless of circumstances.

Note: The office of the special assistant to the vice president of student services is located at 105 Thompson Student Services Center.

Financial Aid

For footnote explanation, see Page 46

Financial Aid[1]

The university administers an extensive financial aid program, ensuring that qualified students will not be denied an education because of financial need. Various forms of financial aid, such as scholarships, fellowships, assistantships, awards, grants, loans, student employment and deferred payment are granted in order to encourage continued academic success and to assist needy, capable students in financing their college educations.

Financial aid is offered to qualified students who hold promise or have demonstrated their ability to successfully pursue their higher education goals, and who need assistance in meeting educational expenses. Students may gain assistance through a single financial aid plan or through a combination of available financial aids.

Most university financial assistance for students is administered by the director of student financial services, whose office is located in the Thompson Student Services Center.

Qualifications

In order to be eligible for financial aid, the applicant must maintain at least a 2.0 average (for undergraduate students) or at least a 3.0 average (for graduate students). With the exception of the Pell Grant, students must be regularly enrolled at least half-time (at least six semester credits for undergraduates, at least five graduate credits for graduate students). Except for the Stafford Student Loan Program, students receiving financial aid must be admitted into a degree program. Students enrolled at least half-time are eligible for all federal financial aid contingent upon their need and the availability of federal funds.

Students receiving financial aid must maintain satisfactory progress toward completion of their respective degree or certificate in order to remain eligible for financial aid. Satisfactory progress, as defined by university policy, means each student must complete and receive credit for at least the *minimum* number of credits in each category listed below for which they were funded each semester.[2]

Full-time:	Undergraduate—12 or more credits
	Graduate—nine or more graduate credits
3/4 time:	Undergraduate—nine through 11 credits
	Graduate—seven through eight graduate credits
Half-time:	Undergraduate—six through eight credits
	Graduate—five through six graduate credits

Students who do not complete the required number of credits are ineligible to receive federal financial aid until the deficit is made up. Appeals concerning the university's *satisfactory progress* requirements may be made to the Student Financial Services Appeals Committee.

Time Limitations: Students receiving federal financial aid are expected to complete their educational objectives within a reasonable period of time. The time limitations are as follows:

Undergraduates: maximum of five[3] years of assistance.

Graduate students: maximum of two[3] years of assistance for students seeking a master's degree; maximum of three[3] years for students seeking a doctoral degree (any degrees beyond a master's degree).

Financial aid eligibility is prorated for transfer students or students who have completed credits at the University of Nevada, Reno.

The use of financial need as a major factor in determining student eligibility for assistance is an effort to offer more equitable distribution of the limited funds available to qualified students.

Financial aid is considered a supplement to the funds provided by the student and his/her family. The university evaluates all outside sources of income available to the student and expects the student to utilize them completely. The director of student financial services attempts to make available the assistance necessary to provide for the balance of the student's legitimate educational expenses.

Applicants for the Stafford (Guaranteed) Student Loan, Perkins Loan, Nursing Student Loan, Health Professions Student Loan, Exceptional Financial Need Scholarship for Freshman Medical Students, Disadvantaged Health Professional Scholarship, Supplemental Educational Opportunity Grant, Nevada Student Incentive Grant and the College Work-Study Program are required to submit a completed ACT Family Financial Statement (ACT-FFS) or other approved need-analysis application. In addition, applicants must submit a completed University of Nevada, Reno Data Form and financial aid transcripts. Entering freshmen may secure the ACT-FFS from their local high school counselor. All other students may obtain the form from the university's Student Financial Services office.

Loans

Three primary types of loans are available to qualified university students from funds provided by interested donors. The loans include the following:

1. Emergency loans involving small amounts of money for short periods of time are readily available to qualified students;
2. University loans are available to qualified students, who have completed at least one semester at any University and Community College System of Nevada campus, for education-related expenses while they are enrolled as at least half-time students.
3. Long-term loans on a low-interest basis are available for qualified students through these programs:
   (a) Perkins Loans;
   (b) Stafford Student Loans;
   (c) Nursing student or health professions loans;
   (d) Health Educational Assistance Loans;
   (e) Supplemental loans for students/parent (PLUS).

In the event of the student's death, the vice president of student services may, if circumstances warrant, authorize the cancellation of any or all financial obligations due the university. This policy does not supersede existing federal regulations governing Perkins Loans, nursing loans or other federal financial aid that already includes cancellation provisions.

For further information about loans, contact the Office of Student Financial Services at 784-4666.

Grants

Grants such as the Pell Grant, Health Professions-Exceptional Financial Need Scholarship Program, Disadvantaged Health Professional Scholarship, Nevada Student Incentive Grant and the Supplemental Educational Opportunity Grant are outright gifts to help students defray educational expenses. Grants are awarded primarily on the basis of need and are utilized in conjunction with other financial aid resources. For further information, contact the director of student financial services.

udent Employment

An employment referral service for all campus part-time jobs l numerous off-campus positions is available to qualified, regu- students. The service is for those students who are enrolled on east a half-time basis in a degree program and are making sfactory academic progress. The Student Employment office s hundreds of part-time jobs each semester. Full-time summer ernship program opportunities are also available through the ce.

The coordinator of job location and development is responsible developing additional jobs, particularly those that are career- ented.

Further information may be obtained from the Student Em- yment office, located at 200 Thompson Student Services Center.

The *Work-Study Program* is available to those entering or return- students who are enrolled on at least a half-time basis and who qualify on the basis of financial need. Through this program dents may obtain work in jobs that relate to their educational or ational objectives.

The university makes all decisions regarding recruitment, hir- and all other terms and conditions of employment without crimination on the basis of race, color, creed, sex, national gin, physical or mental handicap, or other factors that are not a ful basis for employment decisions.

Financial aid consumer information brochures are available on request from the Office of Student Financial Services.

cholarships and Prizes

All scholarship inquiries should be addressed to the Office of dent Financial Services, Room 200, Thompson Student Services nter. All applications are due on or before March 1.

Scholarships are awarded primarily on the basis of scholastic ficiency, with factors of need, character, service and certain cialized talents also determining selection. Scholarship applica- ns are available in January and are due by March 1 of the year ceding the academic year for which the awards are sought.

olarship recipients are notified each year by letter at approxi- tely the time of commencement. *Each recipient must be officially nitted and register full time at the University of Nevada, Reno to ive the award. Students must maintain their regularly enrolled status ring the academic year.*

Scholarship stipends are divided into two equal parts. Half of award total is made available to the student on registration day the fall semester. The second half of the award total is released he student on registration day for the spring semester, provided recipient has maintained a proficient grade-point average ring the fall semester. Students are eligible for their spring olarship stipends if they complete at least 12 credits in the fall nester and remain in good academic standing.

Applicants for regular undergraduate scholarships are gener- y students with a minimum 3.0 grade-point average (on a four- nt scale) for all earned college credit, and those students who ve completed at least 12 credits at the University of Nevada, no.

Applicants for regular freshman scholarships usually have npleted high school in Nevada with at least a 3.0 grade-point erage. In order to qualify for a scholarship, applicants must earn eptable scores in the American College Test (ACT) examination.

nounts of Awards

Scholarship award levels vary, but extend to $2,500 annually.

pes of Awards

There are three types of scholarships available to students at the versity, as follows:

Type I Awards: These awards are made to students from any division of the university, usually without respect to class level or academic interest. Applications for Type I scholarships are made available in January from the Office of Student Financial Services. The deadline to apply is March 1.

Type II Awards: These awards are scholarships granted to students pursuing work in a particular college or department. In addition to meeting general scholarship criteria, qualifying students have the endorsement of the faculty scholarship representative in the college or department concerned. Students interested in receiving a Type II award should contact the Scholarships office at 784-4666. It is the policy of the Scholarship Committee to coordinate Type I and Type II awards to prevent excessive awards of scholarships.

Type III Awards: These awards are presented to students by individuals or organizations that are independent of the university. Funds associated with the awards are held in trust by the university and administered by the Scholarships office. The office distributes a limited number of Type III scholarship applications and offers information about other independent scholarships. Further information about scholarships may be obtained in the Office of Student Financial Services, 200 Thompson Student Services Center.

Special Prizes and Awards

Each year the university distributes a number of prizes and awards to students who have made unique and outstanding achievements. Recipients are selected on the basis of these achievements and not through application.

Presidential Scholarship ($10,000)

To qualify for the President's Scholarship, students must earn both high grade-point averages and ACT or SAT test scores.

On the ACT exam, students must earn a score of at least 31. The ACT test score must be supported with at least a 3.5 grade-point average.

On the SAT exam, students must earn a score of at least 1,350 on combined mathematical and verbal tests. The SAT score must be supported with at least a 3.5 GPA.

National Merit Finalists will also be considered for the university's Presidential Scholarship.

Registration Fee Grants-in-Aid

1. Each semester the university awards a number of registration fee grants-in-aid to approximately three percent of the university's enrollment. Recipients of these grants-in-aid must be residents of Nevada. Selected students are not required to pay a portion of the registration fee for the semester in which they receive the award.

2. Twenty registration fee grants-in-aid may be awarded each semester to American Indian students who are residents of the state of Nevada. Selected students must be certified as American Indians by the Bureau of Indian Affairs.

3. Widows of Nevada servicemen killed in action on or after Jan. 1, 1961, may receive registration fee grants-in-aid for a period of up to eight semesters.

In general, the awarding of these grants-in-aid is based upon sound scholastic achievement, financial need and the rendering of special service to the university. Application forms may be obtained from the director of scholarships at the university. Each award is made for one semester and is renewable only following submission of a new application. Applications for fall semester must be received not later than June 1. Applications for the spring semester must be received not later than Jan. 5.

Recipients must have an overall GPA of at least 2.0 when they receive their awards. They must complete at least 12 credits each semester with a GPA of at least 2.0 to be considered for successive awards.

Out-of-State Tuition Grants-in-Aid

Each semester the university awards a number of out-of-state tuition grants-in-aid. These awards are available only to undergraduate students; they are not available for applicants who are graduate students. The value of the out-of-state grant-in-aid is usually $1,250 per semester. Applications should be directed to the coordinator of scholarships. Each award is made for one semester and is renewable only following submission of a new application.

Awards are based upon scholarship proficiency, as well as students' special service to the university. A proportion of these awards is set aside for students from foreign countries.

Applications for the fall semester must be received not later than June 1. Recipients must have an overall GPA of at least 2.0 when they receive awards. They must complete at least 12 credits each semester with a GPA of 2.0 or higher to be considered for successive awards. Applications for the spring semester must be received not later than Jan. 5.

Graduate Teaching and Research Awards

To be eligible for a graduate assistantship, an individual must first be admitted to the Graduate School and be classified as a graduate standing student. Application should be made to the dean of the appropriate college or the appropriate department chair.

Graduate Assistant Awards—the graduate assistant includes the subcategories of teaching and research assistant, and contractual positions for teaching or research services. Stipends may be accompanied by fee and tuition grants-in-aid. The availability of grants-in-aid are clarified when the contract is issued. A full-time graduate assistantship is based on a 20-hour workweek; however, appointments may be offered for less time with salary and grants-in-aid proportional to the time commitment.

A teaching assistant on appropriated monies is allowed to be on contract for a maximum of three years while pursuing a master's degree and five years while pursuing a doctorate. Maximum time for a teaching assistant obtaining both a master's and doctoral degree at the University of Nevada, Reno is six years.

To ensure satisfactory progress toward the degree, graduate teaching assistants are required to earn at least 10 graduate credits each year in order to maintain eligibility for the assistantship.

International students must score at least 550 on the TOEFL examination, or its equivalent, to be eligible for a teaching assistantship.

Graduate assistant stipends vary among the academic disciplines and are competitive with other universities in the same fields.

Graduate Fellow Awards—designates individuals receiving a stipend that would be treated as a scholarship.

Financial Aid Calendar

Type of Financial Aid	*Deadline Date for Applications*
Scholarship applications	March 1
Departmental scholarships	Check deadline with appropriate college or department
Regents Grants-in-Aid (tuition and fee waiver applications)	
Fall semester	June 1
Spring semester	Jan. 5
Federally Funded Financial Aid (Loans, Grants, Work)	
Fall, spring semesters and summer session	Feb. 15*
Stafford Student Loans	Three months prior to time needed.
Emergency loans (Processing time is less than one hour)	During semester in which emergency occurs
University loans	Minimum of one week to process
Deferred payment of fees, tuition, room and board	Before last day of registration
Student employment	When class schedule is established and you are available

*Note: The ACT Family Financial Statement (ACT-FFS) application should be completed and mailed to the American College Testing Program by this date to allow for sufficient processing time. If the Feb. 15 deadline is met, all forms should be received in the Office of Student Financial Services by the April 1 priority funding deadline.

Footnotes

[1] Refer to the Financial Aid Calendar at the end of this section for deadline dates.

[2] Courses numbered 1-99 may not be used toward the minimum number of credits since they do not apply to a bachelor's degree.

[3] Exceptions to these time limitations may be considered on an individual basis, if extenuating circumstances warrant such consideration. For further information, contact a financial aid officer in 200 Thompson Student Services Center.

Services and Activities for Students

The Office of Student Services is administered and coordinated by the vice president of student services. Major program areas are administered by the assistant vice president, enrollment services (outreach, recruitment, admissions, records, registration, student financial aid, student employment and scholarships); the Associated Students of the University of Nevada manager (associated students, student activities and bookstore); the special assistant to the vice president for student services, who coordinates the Student Mediation Center, exit withdrawals and testing services; the assistant vice president, student life (residential life and housing, food services, discipline and judicial boards, student union, campus police, and planetarium); and the assistant vice president, student development (academic advising, orientation, counseling services, career advisement, substance abuse prevention and the Women's Resource Center).

The vice president of student services also works in cooperation with the vice president for academic affairs, the academic deans and the Graduate School in the areas of admissions, student recruitment, retention, academic support, student affirmative action and the student code of conduct and due process.

Absence Explanations

There are no official absences from any university class. It is the student's personal responsibility to consult with the professor regarding missed classes. However, in the event that a student misses a class because of an official university function, or because of serious personal considerations, members of the Student Development staff may, at their discretion, send an absence explanation to the appropriate instructor at the student's request. The instructor makes the final determination as to whether missed work can be completed at a time other than during the regularly scheduled class period. For further information, contact the Office of Student Development, located at 103 Thompson Student Services Center, or call 784-6116.

Academic Advising Services

The Academic Advising Services staff provides official academic advising for undeclared majors in the College of Arts and Science. The office's primary function is to help undecided students define their academic goals and select a major field of study that best matches their interests and abilities. Nondegree students and students who have questions about the university's academic programs are encouraged to visit the office. For further information, call 784-1537.

Academic Skills Center

The Academic Skills Center provides special advisement and academic support services to undergraduate students, helping them succeed in the academic environment. The office provides the following services:

- Educational Opportunity Program awards
- workshops for GRE preparation
- Bureau of Indian Affairs grants
- individual advisement
- readers for blind students
- interpreters for deaf students
- notary services
- individual and group tutoring in a wide variety of courses
- learning disabilities services
- counseling for handicapped students
- assistance in basic English and writing.

A typing lab, located at 107 Thompson Student Services Center, is also open to all students from 8 a.m. to 8 p.m. Monday-Thursday, and from 8 a.m. to 5 p.m. on Fridays. Tutoring services for undergraduates are also available during the same hours.

The listed services are designed to help students overcome the four major obstacles to higher education: financial, communicational, cultural and physical barriers. For further information, contact the Academic Skills Center staff at 107 Thompson Student Services Center, or call 784-6801.

Handicapped Students: A handicapped student is defined as an individual with a physical, sensory, learning or emotional impairment that substantially limits the person from participating in and/or securing the benefits of a postsecondary education. The handicapped condition may be temporary or permanent. Handicapped students who need temporary parking permits, assistance in scheduling classes or special academic support services should call 784-6801 or visit 107 Thompson Student Services Center for further information.

Campus Tours and Visitations

The Office of Outreach Services encourages prospective students and their families to visit the University of Nevada, Reno campus. Tours are offered by Student Ambassadors (a volunteer organization) who provide a student's perspective of the university. Tours are offered weekdays at 10 a.m. and 3 p.m. Special tours (for weekends, holidays, large groups, etc.) require at least one-week advance notice and may be arranged by calling (702) 784-4865. High school and community college faculty and counselors are encouraged to use the Office of Outreach Services to assist students in planning their education. The office provides a number of services, including school visitations, campus visits, tours, printed materials and special events programs.

Career Development

The university's Career Development Center serves as a centralized link between the student and the professional community, giving students an opportunity to find placement in jobs where they can best utilize their talents. The Career Development staff provides individualized career counseling and job search workshops, including resume and cover letter writing, videotaped mock interviews, and application techniques. Students who have not declared a major are encouraged to seek career counseling. Off-campus job listings help students explore employment options and environments, allowing them to develop both professionally and financially.

A career library is maintained in the Career Development Center, helping students familiarize themselves with corporations and institutions in which they wish to seek employment. Potential employers may place information and advertising for their organizations in the office. Job vacancies may also be posted for student use. In addition, career planning and placement services are available to alumni.

The university encourages students to establish placement files. Students may establish a placement file by completing regis-

tration forms and paying a $10 registration fee. When the fee is paid, the file remains active for one calendar year. This fee entitles the student/alumnus/alumna to all on-campus recruitment or to place letters of recommendation in the file for educational or graduate school placement. For those opting to place letters of recommendation in their file, the $10 fee includes two free mailings of documents in the file (subsequent mailings cost an additional $2). In order to reactivate the file for any additional placement year, students/alumni must pay the $10 registration fee. Placement files that have been inactive for 10 consecutive years will be destroyed.

Additionally, the Career Development Center now offers a phone-in job posting system. Students and alumni who wish to access the service pay a $15 computer access fee, allowing them unlimited access to job postings, recruitment schedules, etc. The free access level enables all students to gain information about workshop schedules, off-campus job postings and special events notices.

The Career Development Center organizes special events, such as workshops, career fairs and job fairs, which are scheduled throughout the year to provide students and alumni with opportunities to explore careers and to secure professional employment.

For further information, contact the Career Development Center at 784-4678. The Career Development Center office is located at 207 Thompson Student Services Center.

Counseling Center

Professional Counseling

The Counseling Center is the primary counseling office for students at the University of Nevada, Reno. The center offers both individual and group counseling services. Its staff members are professionally trained counselors and counseling psychologists with expertise in helping students with a variety of concerns. At the Counseling Center, students may discuss personal problems as well as career and educational objectives. Typical student concerns include: adjustment problems, resolution of conflicts, interpersonal relationships, career development, and self-discovery.

All counseling sessions are confidential, and counseling records are available only to the student and the counselor. The Counseling Center is not affiliated with, and does not report to, any academic or disciplinary agency on campus.

Appointments may be made by calling the Counseling Center at 784-4648, or by visiting the office, located at 206 Thompson Student Services Center.

Fleischmann Planetarium

The Fleischmann Planetarium is operated by the University of Nevada, Reno as the community's science education/entertainment center. Located at the northern end of campus, its focal point is a domed theater containing a planetarium instrument, a sophisticated array of special effects equipment and a Cinema 360 projector. The projector is an all-sky, motion-picture system that recreates daytime environments in the theater, just as the planetarium shows objects in the nighttime sky.

The Hall of the Solar System, located on the upper level, contains six-foot-diameter globes of the earth and moon, a meteorite collection, and other exhibits about the sun, planets and their satellites.

A small observatory houses several telescopes that are regularly used for public viewing of celestial objects.

Multimedia planetarium shows and hemispheric films are presented for school groups and the general public throughout the year. In addition, a museum containing exhibits and displays on astronomy is open daily. For schedule information, call 784-4811. To place reservations, call 784-4812.

Food Services

The university dining commons, which overlooks Manzanita Lake, is located in Jot Travis Student Union. Snack bars are located in the Student Union and in the Education and Business buildings. Students on university meal plans may transfer a fixed-dollar portion of a meal to one of the snack bars during certain hours. The dining commons is open every day during the academic year, except during university recesses, Thanksgiving, Christmas and Easter.

The University Inn, a university-administered residence facility, has its own dining room.

A faculty/staff dining room, located next to Manzanita Lake, serves lunch on school days. It is also available to students and the general public for light food and entertainment during evening hours.

For further information about university food services, call the Student Activities office at 784-6505.

Housing Information

Living on campus can be a very special and rewarding part of your experience at the University of Nevada, Reno. The Residential Life and Housing Office provides students with a number of residential opportunities as well as several food service plans. The core of the housing program is the university residence halls, which supply complete living facilities for approximately 1,000 men and women. In addition, a number of national fraternities and sororities maintain chapter houses near the campus. The University Inn assigns a limited number of rooms for student use with a preference given to graduate students.

An off-campus housing option for students is the university-administered Stead Apartments. Students with children are given priority at this facility.

General Policy

All regular, full-time students are eligible to live in university residence halls. Undergraduate student residents should be enrolled for at least 10 credits each semester. On-campus living is available to part-time (seven credits or more) students on a space-available basis; however, priority is given to full-time students.

Students are encouraged to request housing information immediately after they have been officially admitted to the university. The demand for on-campus housing usually exceeds the space available.

Currently all students living in the University Inn and in residence halls are required to purchase one of several meal plans for the duration of their housing license agreement.

Residence Halls

Male and female students are assigned to different areas in Nye, White Pine and Juniper Halls. While the traditional personality of men's or women's floors is maintained, student government and some social, recreational and cultural activities are coeducational.

Nye Hall is a high-rise building accommodating 560 students with two students assigned to each room. There are lounges on each floor with a larger reception and lounging area in the main floor lobby. A computer lab and weight training room are located on the lower level.

White Pine Hall accommodates 160 students in an innovative suite style. Each suite consists of four bedrooms, a living room and bathroom facilities. There are no hallways or corridors in the building, as all suites open directly to the outside. The spacious study lounge is available for special events. Laundry facilities are available on the ground floor.

Juniper Hall, which houses 141 students, also offers a suite arrangement, including two bedrooms and a common foyer/dressing area. As with Nye Hall, all public areas are carpeted and laundry facilities are available.

Manzanita Hall has a long tradition as the women's residence hall on campus. A study lounge and comfortable living room help create a homelike environment shared by 100 women.

Lincoln Hall, another longtime university residence hall, houses the Honors Program. The 66 residents of this tradition-filled campus hall enjoy the distinctness of their rooms, as well as a recreation room.

How to Apply for Housing: Each new student requesting university housing receives an application after official admission to the university. Completed license agreements should be returned as soon as possible to the Office of Residential Life and Housing.

Rooms are assigned in the order in which license agreements are received. In most cases, all space is assigned several weeks before the fall semester begins.

For further information, write to the Office of Residential Life and Housing – 060, University of Nevada, Reno, 89557-0039, or call (702) 784-1113.

Married Student Housing

The university maintains 40 one-bedroom, unfurnished apartments that share central laundry facilities. Applications for married student housing may be requested at the Office of Residential Life and Housing, located in Nye Hall.

Additional married student housing is available at the Stead Apartments. Refer to the description below for further information.

Other Housing Options

The Housing Office maintains a listing service for the university community. The listings include off-campus, privately managed apartment and house rentals, as well as listings of rooms in private homes and students seeking roommates.

While the university endeavors to assist students in locating suitable housing in the Reno-Sparks area, it does not inspect or approve such off-campus facilities. Therefore, all rental arrangements are made between the parties involved and the university does not assume any responsibility in this area.

Landlords utilizing the services of the Office of Residential Life and Housing are required to abide by the university's policy on nondiscrimination. All reported acts of discrimination are subject to investigation and referral to the Nevada Commission on Equal Rights of Citizens. Those establishments found guilty of discrimination are denied listing privileges and are subject to legal action initiated by the injured party and/or the state.

Stead Apartments: One- and two-bedroom unfurnished apartments are available at Stead for students who are enrolled full-time, as well as for university faculty and staff. Students with children are given priority. The facility is administered by the university's Business Affairs office. The Stead apartment manager oversees the apartments. For further information, call 972-0781.

University Inn: University Inn is a 173-room hotel/residence/conference facility with full food-service capabilities. Located at 1001 N. Virginia Street, University Inn currently assigns approximately 50 rooms for student use.

Secured by the university through a grant from the Fleischmann Foundation, University Inn serves adult continuing education programs, the National Judicial College, National Council of Juvenile and Family Court Judges, as well as other organizations, faculty and staff of the University and Community College System of Nevada. The University Inn may be used, at reduced rates, for both personal and university needs. The facility is administered through the university's Business Affairs office. For further information, call 323-0321.

Intercollegiate Athletics

There has been a long tradition of intercollegiate athletics at the University of Nevada, Reno. Nevada has produced college All-Americans, professional athletes and outstanding coaches, as well as noteworthy graduates in a multitude of academic disciplines.

The intercollegiate athletic program at the university offers a variety of individual and team sports for men and women with a commitment to the development and education of the student athlete.

The men's program competes under the auspices of the National Collegiate Athletic Association (NCAA) in eight intercollegiate sports: football, basketball, baseball, track and field (indoor and outdoor), cross country, tennis and golf. Nevada is a member of the highly competitive Big West Conference in all sports except skiing. The Wolf Pack skiing team competes as a member of the National Collegiate Ski Association.

The Nevada women's intercollegiate athletic program is also a member of the NCAA and the Big West Conference. Women's intercollegiate sports at the university include: volleyball, basketball, skiing, swimming, tennis, cross country, and track and field (indoor and outdoor).

Additional information about specific sports is available by calling the Intercollegiate Athletics Office at 784-6900. The office is located in the Lawlor Annex.

International Students and Scholars

The Office of International Students and Scholars provides a variety of services to nonimmigrant students and scholars at the university. Students and scholars are advised on personal and immigration matters. Cultural adjustment programs and informational workshops are sponsored on an ongoing basis. Social and cultural programs are also sponsored on campus and in the community to foster interaction between international students and Americans, as well as to help develop greater awareness and understanding of cultural diversity.

New international students and scholars are required to check in at this office immediately upon arrival at the university. Students holding F-1 and J-1 visas must be aware of the following regulations:

1. Enrollment in a full course of study is required for each semester during the student's entire program of study (at least 12 credits for undergraduates; at least nine credits for graduate students);
2. Financial obligations must be met in a timely manner;
3. Enrollment in the Student Health Center service and supplemental health insurance plan is mandatory;
4. Authorization must be obtained from the Immigration and Naturalization Service or the OISS before the student will be allowed to work off-campus.

The Office of International Students and Scholars is located at 204 Thompson Student Services Center. To gain information by phone, call (702) 784-6874.

Jot Travis Student Union

The Jot Travis Student Union is the social and recreational center of the university.

The facilities at the union include: lounges, a game room, a snack bar, dining commons, The Cellar (a faculty-staff dining room), space for banquets and luncheons, three auditoriums for programs and discussion groups, meeting rooms for campus and off-campus groups, and gallery arrangements for art exhibitions. A number of services are offered at the union, including ticket sales, check cashing, notary service, foreign travel information and international student identification cards, campus-wide lost and found, distribution of student identification cards, and scheduling for all student activities and events.

The university bookstore and the Associated Students of the University of Nevada (ASUN) offices are also located in Jot Travis Student Union.

Minority Student Affairs

The Minority Student Affairs (MSA) Office is dedicated to the advancement, recruitment and retention of minority students at the University of Nevada, Reno. The office provides career counseling, scholarship information, grants and fellowships directed to minorities, academic advisement, personal guidance, and information about the Graduate School. MSA also offers job referral services and hosts a number of free workshops covering such topics as resume writing, interviewing techniques, self-esteem and success. For further information, call 784-4936. The Minority Student Affairs office is located at 104 Thompson Student Services.

New Student Orientation

The university's orientation programs are designed to provide information, academic advisement, class scheduling opportunities and social activities for new students of all ages and from all walks of life. All programs are voluntary and selected programs require payment of a fee in order for new students to participate.

Orientation information is sent to all newly admitted students prior to the semester in which they plan to enroll. The information packet contains timely, important details for new students, as well as the orientation program schedule and reservation form. New student orientation, staff assistance, and guidance is available from members of the Student Orientation staff (SOS) and the Prime Time Network (PTN), a service for adult students. Members of SOS and PTN are trained to conduct information sessions and answer questions about the university.

New students and their parents/family members are encouraged to contact the Orientation Office for more information by calling (702) 784-6116.

Student Government and Organizations

ASUN (Associated Students of the University of Nevada)

Student government on the University of Nevada, Reno campus is a strong voice with delegated authority to assume a responsible leadership role within the university community.

The university's undergraduate student body is organized into a unified, self-governing body known as the Associated Students of the University of Nevada—ASUN. This body, an integral part of the university community, acts as a student voice to the faculty, administration, Board of Regents, and community to ensure student input in policy decisions. ASUN is recognized by the university president and the Board of Regents, and functions under the ASUN constitution. Copies of the ASUN constitution are available to all members of the student body at the ASUN office, located upstairs in the Jot Travis Student Union.

ASUN's areas of responsibility and jurisdiction are as follows:

ASUN **President:** The ASUN president is the chief executive officer, serving as the chairman of the executive council and the fiscal allocations board. The president is also a member of all ASUN committees and a member of many university committees and boards, including Faculty Senate and the Board of Regents.

Executive Vice President: The executive vice president serves as chairman of the publications board and grievance board, is treasurer for ASUN, and liaison to clubs and organizations.

The publications board is composed of one-third of the members of the ASUN Senate, as selected by the executive council; the editors of the three major university publications; the ASUN president (nonvoting); the publications advertising manager (nonvoting); and nonvoting advisers. The board acts as the legal publisher for the three publications, the Sagebrush (campus newspaper), the "Artemisia" (campus yearbook) and the Brushfire (literary magazine), and allocates funds for each publication. Student publications provide opportunities for students to develop writing skills and provide information services to the university community.

The grievance board is composed of one-third of the senate and acts as a student hearing board for students, faculty and the community. The board hears grievances and then works toward resolving disputes. The ASUN executive vice president also acts as a liaison between student organizations and ASUN.

Vice President for Programming: The vice president for programming acts as chairman of the programming board. The board consists of the ASUN speaker of the senate and eight other student members, who serve as chairs of the eight committees and represent a specific area of programming. The committees that constitute the board include: Arts, Comedy, Forum, Multicultural, Music, Nooners, Recruitment and Special Events. The board is also responsible for establishing policies and procedures that affect student activities, as well as encouraging programming by student organizations.

Fiscal Allocations Board: This committee is responsible for control of all ASUN funds and the initial allocation to all ASUN programs and boards at the beginning of the fall semester. The fiscal allocations board also implements policy decisions relating to the ASUN Bookstore, which is wholly owned and operated by ASUN.

ASUN Senate: The ASUN Senate is the final authority of the ASUN organization. The senate consists of 22 senators elected from each of the 10 undergraduate colleges. The ASUN Senate is chaired by the speaker of the senate, who is elected each year by the members of the senate. All action taken by the boards and the program and budget committees must be reviewed and approved by the senate. The senate also reviews and approves groups for ASUN recognition. For further information, call 784-6589.

ASUN Judicial Council: The ASUN Judicial Council is composed of a chief justice, an associate chief justice and three associate justices. A nonvoting member of the university faculty serves as adviser.

The primary purpose of the council is to provide students with a greater voice and responsibility in maintaining high standards of conduct. Its major function is to hear all cases referred to its jurisdiction—to investigate, adjudicate and assess sanctions for violations of the Student Conduct Code and the "Rules and Disciplinary Procedures for Members of the University Community."

Legal Information and Referral Service: This office provides free consultation and referral for legal cases in the areas of: landlord/tenant relations, domestic relations (marriage, divorce, child support and custody, and paternity rights), traffic violations, consumer complaints, small claims court matters, criminal charges, university-related problems and other legal inquiries.

For more information, visit the ASUN Legal Aid Office in Jot Travis Student Union, or call 784-6132.

GSA (Graduate Student Association)

The Graduate Student Association is an organization that represents the graduate student population at the University of Nevada, Reno. Students have representation from each academic unit offering advanced degree programming. The GSA has voting representation on the Graduate Council and cooperates with the Associated Students of the University of Nevada. For further information, see the Graduate School section of this catalog.

Other Student Organizations

Students at the University of Nevada, Reno have an opportunity to participate in or apply for membership in more than 100 organizations. These groups include religious, social, scholastic, honorary, service and recreational organizations, as well as clubs for students in specific fields of study.

Any student organization that wishes to use on-campus facilities or apply for financial assistance must petition for ASUN recognition. Information regarding this procedure is available in the ASUN office through the ASUN executive vice president. Lists of active organizations and information regarding these organizations are also available in the ASUN office. All organizations are required to have a faculty or staff adviser. Membership in student organizations is based upon the student's scholarship, college or class affiliation, and his/her individual skills and interests, or on any other basis consistent with the aims of the university. Any practice excluding individuals from membership in organizations on the basis of race, creed, color, national origin, age, handicap, sex or sexual orientation is inconsistent with university and ASUN policies.

For further information, contact the ASUN office at 784-6589.

Fraternities and Sororities: There are 10 social fraternities and four social sororities active at the university.

Social fraternities

	Date founded locally
Sigma Nu	1914
Sigma Alpha Epsilon	1917
Alpha Tau Omega	1921
Lambda Chi Alpha	1929
Phi Delta Theta	1972
Tau Kappa Epsilon	1981
Sigma Pi	1983
Pi Kappa Alpha	1986
Delta Chi	1989
Kappa Alpha Order	1991

Social sororities

	Date founded locally
Delta Delta Delta	1913
Pi Beta Phi	1915
Gamma Phi Beta	1921
Kappa Alpha Theta	1922

The Interfraternity Council and the Panhellenic Council coordinate the activities of their respective groups. Information regarding fraternities and sororities and rush procedures is available from the university's Greek adviser. Visit the adviser's office at 102 Thompson Student Services Center or call 784-4306.

Student Health Center

Students and spouses of registered eligible students at the University of Nevada, Reno, Truckee Meadows Community College and Western Nevada Community College may purchase Student Health Center services.

The Student Health Center is located in the Speech Pathology and Audiology/Student Health Center building, which is on the north end of campus near the School of Medicine. The center is open from 8 a.m. to 5 p.m. weekdays throughout the year, except for holidays.

General outpatient medical care is provided by physicians and nurse practitioners. Other services offered include: sports medicine, women's health, colposcopy, immunizations and allergy shots. Part-time consultants hold weekly dermatology and mental health clinics. Appointments are recommended, and patients who have not made appointments are generally seen in the order of arrival. Patients needing emergency treatment are seen immediately.

Physicians from the university's family and community medicine department provide after-hours, weekend and holiday health care for students. Call 784-6598 to reach a physician for after-hours treatment. If medical care is necessary after hours, then this care is provided at the student's expense.

The health center fee is $50* per semester payable through late registration. The fee is $60* from late registration until the last day students are allowed to drop classes. Students cannot purchase the Student Health Center services or the supplemental health insurance plan after the final date for dropping classes. However, students who have not purchased health center services may be seen at the Student Health Center for a per-visit fee. The Student Health Center fee covers **only** eligible care at the center.

The Student Health Center fee covers the costs of some medications, X-rays and laboratory tests for the treatment of acute illness and injury. Additional fees may be necessary for other medications and tests. Additionally, students who are required to have physical examinations for personal needs may have the exams completed at a reduced rate.

The center also provides health care services for students during semester breaks. Students enrolled for classes during the summer sessions are eligible for care only during the session for which they enroll. Students who are not enrolled during the summer session, but who were enrolled the previous semester, may purchase summer health care. The summer health care fee is $50*.

Students who purchase student health care services are eligible to purchase supplemental health insurance. This additional insurance provides some coverage toward expenses for hospitalization, consultation and services that are not available at the center. Insurance coverage remains in effect during the entire semester, whether the student is at the university or away from the campus. Additional coverage is available for non-enrolled spouses of university students and/or children of students. This supplemental coverage is available for those individuals who do not have other medical insurance coverage. The supplemental insurance may be purchased during the enrollment period in which the Student Health Center services are offered.

*Fees are subject to change.

Student Information Services

The Activities Office and campus Food Service office at the Jot Travis Student Union serve as a university clearinghouse for information, especially for extracurricular and cocurricular activities. Students who seek information about campus activities may obtain assistance by calling these offices. The Activities Office phone number is 784-6505 and the campus Food Service office phone number is 784-6143.

Students may be referred to an appropriate agency if a specialized problem exists.

Student Mediation Center

The Student Mediation Center facilitates communication when conflict arises between students, faculty and administrators. The center adheres to the principles of impartiality, independence and confidentiality. Appointments may be made by calling 784-4177. The Mediation Center office is located at 105 Thompson Student Services Center.

Substance Abuse Program

A professional counselor from the university's Counseling Center is responsible for developing and sponsoring services and activities designed to positively resolve concerns about substance abuse on campus. The substance abuse program includes prevention, education, awareness, intervention, treatment and rehabilitation services. Workshops, inservice trainings, conferences and consultation services are also available for students. Educational programs about substance abuse are sponsored in conjunction with recognized student groups living on campus (residence halls,

fraternities, sororities, etc.), ASUN and campus organizations. All information and services are confidential, and are offered at no charge to the university community. For more information, visit the Counseling Center, located at 206 Thompson Student Services Center, or call 784-4648.

Testing Services

The Testing Services office schedules and administers national and institutional tests (ACT, GMAT, GRE, LSAT, MCAT, NTE, TOEFL) that are required for admission to undergraduate and graduate programs and professional schools. CLEP, NLN and ACT PEP tests are also scheduled for students who wish to qualify for advanced placement or credit by examination. Information pertaining to test dates, registration, etc., and free test bulletins offering sample exams are available in the Testing Services office, located at 105 Thompson Student Services Center. For information by phone, call 784-4638.

University Police

Emergency Number: 911. Non-emergency service calls: 334-2121. Campus Escort Service: 784-1573. Police Office: 784-4013. Office Hours: 8 a.m. to 5 p.m., Monday-Friday.

The University Police Department is an agency of the university community. Its purpose is to serve and protect the students, staff, faculty, and all other people and property within the jurisdiction of that community.

Police officers and personnel are on duty 24 hours a day, every day of the year, and their services and facilities are available at all times.

The University Police Department has the exclusive responsibility of acting upon law enforcement matters and performing police functions for the main campus of the University of Nevada, Reno; the Stead Apartments; and the university's agricultural facilities in the Truckee Meadows. The police also have jurisdiction at the Sierra Nevada Job Corps, Truckee Meadows Community College and the Desert Research Institute.

Police personnel are sworn peace officers, performing the same services as those of any municipal police agency. They investigate all crimes and enforce federal, state and local laws within their jurisdiction, as well as university regulations.

All sworn university police officers have successfully completed training at a Nevada POST (Peace Officer Standards and Training) academy or equivalent training recognized by Nevada POST organizations. All officers are certified in first aid and CPR. Many University Police Department officers hold either associate or bachelor's degrees in the sciences that relate to criminal justice, sociology, psychology, community relations and other public service-related fields. In addition to this extensive training, the officers also attend many short courses and training seminars throughout the year.

Campus Escort Service: The University Police Department, in cooperation with the Residential Life and Housing office, coordinates a limited campus escort service during the Getchell Library's evening operating hours (6:30 p.m.-12:30 a.m.). The service, which operates Sunday through Thursday, is staffed by a core of civilian campus safety officers and volunteers.

Community Relations Specialist: The University Police Department recently created the position of community relations specialist. This position will allow the police department to involve the university community in crime prevention and related issues. The following programming areas will be addressed through the new position, including: personal safety, sexual assault, substance abuse and general crime prevention, as well as racial awareness and culturally sensitive topics.

Contacting the Police for Emergencies and Non-emergencies: Any member of the university community who needs emergency help or medical assistance may contact police personnel, day or night, by dialing 911.

The non-emergency dispatch number (334-2121) contacts the 24-hour dispatch center, which has direct contact with other emergency centers in the area.

The University Police Department is located at 1305 Evans Ave., on the east side of the main campus. Police personnel may be contacted at this address between the hours of 8 a.m. to 5 p.m., Monday through Friday. If you need to contact the police after hours or on weekends, call the non-emergency dispatch number or 911.

Upward Bound

The Upward Bound program, funded by the U.S. Department of Education, is designed to identify and assist 65 high school students who have the potential to succeed in postsecondary education programs. These students must meet eligibility requirements, which include a limited family income and/or first-generation college status. Assessment, counseling, tutoring, cultural events and career planning activities are provided during the academic year. During the summer a six-week instructional program is offered for credit on campus. Program graduates attend the summer session for university credit. For further information or to make a referral, call 784-4978. The program office is located at 103 Thompson Student Services Center.

Veterans Services

The Veterans Services staff strives to assist veterans in achieving their academic goals. Referral services for advisement are available, as well as information on housing, career counseling and financial aid. The Veterans Services office serves as a liaison for students with the Department of Veterans Affairs office in Reno.

The University of Nevada, Reno is fully accredited by the Department of Veterans Affairs for educational benefits to qualified veterans under existing, applicable public laws. Discharged veterans, or those currently in service, who plan to attend the university must apply for veterans' educational benefits when they pay registration fees.

The university is also accredited for war orphans and widows under Chapter 35, Title 38, USC (a program of financial assistance for the education of men and women whose parents or spouses are deceased or completely disabled as a result of injuries or diseases received during their military service).

Each individual receiving benefits under any of the public laws must complete the Veterans Educational Benefits Application immediately after paying fees for each semester, summer session or other instructional period. Payment may be made at the place of registration or at 203 Thompson Student Services Center. Students who fail to present the Advance Registration Schedule Fee form when completing their application may face a six- to eight-week delay in receiving their educational benefits.

It is the beneficiary's responsibility to notify personnel at the Veterans Services office immediately if he/she drops or adds a course, withdraws from the university for any reason, or stops attending any or all classes. Failure to notify the office of these changes will delay monthly checks and subject the student veteran to financial liability for an overpayment or incorrect payment of benefits. If changes in the student's program affect his/her status (from full-time to half-time or three-fourths time, etc.), the effective notification date will be registration day, unless mitigating circumstances are accepted by the Regional Veterans Administration.

Student veterans are subject to the university's normal academic standards and must maintain *satisfactory progress* toward the VA-certified degree objective in order to continue receiving Veterans Educational Benefits.

The amount of monthly educational subsistence is determined (except for Vocational Rehabilitation Benefits) by: (1) the number of credits for which the student veteran is registered, as certified by the Veterans Office to the Department of Veterans Affairs; and, (2) the number of dependents the student veteran claims. Only courses leading to the certified degree objective apply and courses that are repeated or audited are not applicable.

Teaching assistants or graduate assistants must obtain a statement from the Academic Personnel Office verifying their precise status as an assistant before seeking certification, if they are registering for less than nine graduate credits and desire full-time subsistence.

Tutorial benefits for qualified veterans are administered through the Veterans Services office. The maximun benefit is $76 per month for a period of no more than 12 months.

For further information, call 784-4664.

Women's Resource Center

The university's Women's Resource Center offers referral services, peer counseling, advocacy for female students, programs on women's issues and career choices, cultural events and exhibits, a lending library of more than 300 volumes featuring female authors and topics of interest for women, and topical resource files and information on women's activities, events, organizations and services in the Reno-Sparks area.

The center also helps female students get involved in campus activities and assists students in research about women's topics.

Regular office hours at the center, located at 1201 N. Virginia St., are 9 a.m.-5 p.m. weekdays. The office is open occasionally during the evening. For further information, call 784-4611.

Student Conduct Information

Student Conduct

Enrollment in the university carries with it obligations regarding conduct. Not only within but outside the classroom, students are expected to conduct themselves in such a manner as to be a credit both to themselves and to the university. They are accountable to the laws governing the community as well as to the policies and regulations of the university and directions of university officials, and they are expected to observe the standards of conduct approved by the university.

The administration of student conduct follows the procedures outlined in the *Rules and Disciplinary Procedures for Members of the University Community*. Copies of the procedures are available in 102 Thompson Student Services Center. The procedures are summarized in the *Student Handbook*.

University Policies

I. **Use of University Facilities**

University facilities, including campus grounds, are provided primarily for the support of the regular educational functions of the university and the activities necessary for the support of these functions. The university's functions take precedence over any other activities in the use of university facilities.

Freedom to speak and to hear is maintained for students, faculty and staff and university policies and procedures are used to provide a full and frank exchange of ideas. An effort is made to allow a balanced program of speakers and ideas.

An invitation to speak at the university does not imply that the university endorses the philosophy or ideas presented by the speaker.

University facilities may not be used for the purpose of raising monies to aid projects not related to some authorized activity of the university or of university groups, and no efforts at conversion and solicitation by uninvited non-campus groups or individuals is permitted on campus.

Regulations concerning the use and scheduling of university facilities are available in the university Activities Office and the Scheduling Services office.

II. **Search and Seizure**

A. The university reserves the right for maintenance personnel or authorized university personnel to make entry and inspection of university premises occupied by students for purposes of health, safety, maintenance or repair. Such entry is normally limited to a visual room inspection of the premises. Entry for reasons other than health, safety, maintenance or repair must conform with Section B of this general policy.

B. The vice president of student services may authorize an actual search of university premises occupied by students. Such search is normally limited to instances where reliable information is submitted to the vice president of student services from which it is reasonable to believe that a designated university facility is being used for an unlawful purpose or in violation of university regulations. Searches without prior authorization must conform with Section 3 of the Search and Seizure Policy Guidelines, available in the office of the vice president of student services.

III. **Firearms—Fireworks**

A. Nevada state law expressly prohibits possession of explosive or incendiary devices, switchblades, firearms and other weapons on university property. The law specifically excepts police officers and security guards from this restriction and also requires the president of the university to give written permission for possession of a weapon.

B. Possession and use of fireworks or pyrotechnics in university buildings, on university grounds, or fraternity and sorority houses are prohibited.

C. Students who bring firearms and ammunition must make provision for proper safeguards.

D. Occupants of university housing, which includes fraternities and sororities, are within the city of Reno and are subject to city ordinances governing the use of firearms within the city limits.

E. Failure to abide by these rules may result in arrest, confiscation of firearms, ammunition and pyrotechnics, and appropriate disciplinary action.

Student Judicial Code

The University of Nevada, Reno is dedicated to the discovery and dissemination of knowledge. These ends require free inquiry and discussion, which means the willingness and power to agree and disagree without coercion. The regulations and procedures which follow establish conditions necessary to preserve the proper ends of the university, including the rights of all its members to pursue these ends. In addition, it must be recognized that while the university is willing to advise and guide Greek organizations (fraternities and sororities), these organizations are independent corporations, legally distinct from the university, and the university has no legal authority to exercise control over them. Nevertheless, these organizations have established a code of conduct for their members which is referred to in this document for informational purposes.

The university exists in a continual interaction with a larger community of people, state and nation. The university must live in harmony not only with itself but with the community at large and, in turn, must enjoy the support of the community it serves if it is to succeed in the pursuit of its proper and distinctive ends.

These regulations are designed not to infringe upon any student's rights to express his or her opinions or demonstrate peacefully, but rather to ensure that the rights of all members of the university community are preserved.

Scope of the Document

The procedures and sanctions established in this document are applicable to the resolution and determination of charges against students at the University of Nevada, Reno for allegedly engaging in specified prohibited conduct. Except as otherwise provided in the University and Community College System of Nevada Code (UCCSN Code) and in these regulations, the University of Nevada School of Medicine may also establish written policies, procedures and sanctions for the discipline of its students which may be used in lieu of the policies, procedures and sanctions of the UCCSN Code and these regulations, subject to prior review by the General Counsel of the University and Community College System and with the approval of the president of the institution in which the School of Medicine is based.

Students are expected to participate in the University of Nevada, Reno, campus community and its sponsored activities in cordance with local, state and national law. The enforcement of ese laws remains the responsiblity of the legal and judicial thorities duly established to that end.

Student conduct alleged to have violated both university regulions and policies and civil/criminal law may be handled concurntly through university disciplinary proceedings and through e courts. The person filing the complaint of student misconduct ay choose to file charges against the student in both arenas: ternally, through the university student judicial system, or exterlly, through the legal system.

rohibited Conduct for Students

The University of Nevada, Reno has established regulations for udent conduct that augment those established system-wide. The iversity regulations define which conduct by students is prohibed on the University of Nevada, Reno campus or at universityonsored events. "University-sponsored" does not mean any ent sponsored by a fraternity or sorority.

ubsection A: University of Nevada, Reno Regulations

The examples of student misconduct described in this section all result in university disciplinary action and may lead to the rocedures and disciplinary sanctions established in the Univerty and Community College System of Nevada Code. Students rolled in the University of Nevada School of Medicine are also bject to the prohibitions contained in the procedures and discinary sanctions which may be established by the School of edicine, as authorized by the University and Community Colge System of Nevada Code.

Students charged with involvement in any of the activities entified in these regulations may be reported to the Office of udent Judicial Affairs for an investigation of the activity in uestion, and the appropriate disciplinary procedures will be ursued in accordance with this document.

The following prohibited activities apply to the student commuty at large and to every student at the University of Nevada, Reno.

1. Conduct which endangers the health or safety of any member guest of the university community.

2. Violation of university policies and regulations governing sidence in university-owned or controlled property, including sponsibility for the conduct of guests.

3. Failure to comply with the directions of university officials in e performance of their duties.

4. Failure of the student to present proper credentials, such as: udent identification card, driver's license or parking registration university officials upon their request.

5. Resisting or obstructing such university or other public fficials in the performance of their duties.

6. Gaining access to restricted areas, such as ledges, roofs or any part a university facility's outside structure. Being on these areas or storing ems on them is considered a personal and community safety risk.

7. The unauthorized possession, loan or distribution of keys; or nauthorized entry into or use of university facilities, including uildings and grounds.

8. The reproduction, manufacture or duplication of any key or nlocking device for use on university facilities or locks without roper authorization.

9. Setting off a fire alarm for reasons other than actual fire or mergency; tampering with any fire protection equipment or deice; involvement in setting or causing any unauthorized fire in or n university property; failure to evacuate a university building hen a fire/emergency alarm occurs.

10. False reporting of any emergency situation, including misse of campus emergency telephone equipment.

11. Carrying, possessing or using firearms on university-owned r university-controlled property, except as required for: (1) eduational programs; (2) authorized use in establishing rifle and istol ranges; and, (3) police and military purposes.

12. Possession and use of fireworks or pyrotechnics in university buildings or on university grounds.

13. Hazing (any action taken or situation created to produce mental or physical discomfort, harassment or ridicule) made by an individual student or a student group against another student or group of students. These actions/situations would include any which would degrade, endanger or otherwise compromise the dignity of the student or student(s) involved.

14. The use of, or threat to use, force or violence of a sexual nature, defined as sexual assault, against any member or guest of the university community on university-owned or university-controlled property or at any university-sponsored program.

15. Use or possession of alcoholic beverages without authorization; use or possession of illegal and/or unauthorized drugs and drug paraphernalia; providing alcoholic beverages to a minor while on university property or at university-sponsored activities. Any action which is contrary to the "Alcoholic Beverage Policy" for University of Nevada, Reno, student groups or is in violation of Nevada state law.

16. Being under the influence of a controlled substance, including alcohol, while on university property or at a university-sponsored activity; the exhibiting of offensive behavior while under the influence of alcohol or other controlled substances.

Subsection B: University and Community College System of Nevada Student Conduct Code

In addition to regulations for student conduct for the University of Nevada, Reno campus, all students are responsible for following the regulations for the entire university and community college system. The 19 prohibited activities, as found in the University and Community College System Code, Section 6.2.2, are listed below:

1. Commission of any acts specified in subsection 2.1.4 of the code:

(Subsection 2.1.4 of the code provides as follows: "Acts interfering with academic freedom. Acts of physical force or disruptive acts which interfere with the University of Nevada activities, freedom of movement on the campuses or freedom for students to pursue their studies are the antithesis of academic freedom and responsibility, as are acts which in effect deny freedom of speech, freedom to be heard, and freedom to pursue research of their own choosing to members of the faculty or to invited guests of the University of Nevada.")

2. The use of, or threat to use, force or violence against any member or guest of the system community, except when lawfully permissible.

3. Interference by force, threat or duress with the lawful freedom of movement of persons or vehicles on university premises.

4. The intentional disruption or unauthorized interruption of functions of the system, including but not limited to classes, convocations, lectures, meetings, recruiting interviews and social events, on or off premises of the system.

5. Willful damage, destruction, defacement, theft, or misappropriation of equipment or property belonging to, in the possession of or on premises occupied by the system.

6. Knowing possession on any premises of the system of any firearms, explosives, dangerous chemicals, or other instruments of destruction, or other dangerous weapons as defined by the laws of the state of Nevada without the written authorization of the president of any system institution or the president's authorized agent, unless such possession reasonably relates to duly recognized system functions by appropriate members of the faculty, other employees or students.

7. Continued occupation of buildings, structures, grounds, or premises belonging to or occupied by, the system after having been ordered to leave by the president of a system institution or the president's designee.

8. Forgery, alteration, falsification, or destruction of system documents or furnishing false information in documents submitted to the University and Community College System of Nevada.

9. Making an accusation which is intentionally false or is made with reckless disregard for the truth against any member of the system community by filing a complaint or charges under this code or under any applicable established grievance procedures in the system.

10. The repeated use of obscene or abusive language in a classroom or public meeting of the system where such usage is beyond the bounds of generally accepted good taste and which, if occurring in a class, is not significantly related to the teaching of the subject matter.

11. Willful incitement of individuals to commit any of the acts herein prohibited.

12. Disorderly, lewd, or indecent conduct occurring on system premises or at a system-sponsored function on or off such premises.

13. Any act prohibited by local, state, or federal law which occurs on system premises or at a system-sponsored function on or off such premises.

14. The use of threats or violence against a faculty member or the faculty member's family in order to secure preferential treatment for grades, loans, employment, or other service or privilege accorded by the system.

15. Any act of unlawful discrimination based on race, creed, color, sex, age, handicap or national origin.

16. Any act of sexual harassment when submission to a request or demand of a sexual nature is either an explicit or implicit term or condition of employment or of academic grading, or where verbal or physical conduct of a sexual nature has the effect of creating an intimidating, offensive, or hostile work or classroom environment.

17. Acts of academic dishonesty, including, but not limited to, cheating, plagiarism, falsifying research data or results, or assisting others to do the same.

18. Willfully destroying, damaging, tampering, altering, stealing, misappropriating, or using without permission any system, program or file of the University and Community College System of Nevada.

19. Any other conduct which violates applicable stated prohibitions, policies, procedures, rules, regulations or bylaws of a system institution.

Subsection C: University of Nevada, Reno Policies

In order to maintain an academic climate conducive to each member's success in the pursuit and transmission of knowledge, the University of Nevada, Reno has established a set of policies and standards for all of its members to adhere to. For student members of this community, enrollment at the university carries certain obligations related to activities in the academic setting, including behavior inside and outside of the classroom.

Every student is accountable to the policies and regulations of the university and the directions of university officials. Students are expected to conduct themselves in such a manner as to be a credit to themselves and the university. The student enrolled at the University of Nevada, Reno agrees to abide by, and make every effort to meet, the academic and behavioral standards of the university.

The following policies for student members of the community may also be the same, or similar to, policies affecting all members of the university. These have been included within this student judicial code to allow all students to familiarize themselves with these standards of behavior as well as the rights to which every student is a party.

Academic Standards: Specific to the academic pursuits of students, the University of Nevada, Reno believes the maintenance of academic standards is a joint responsibility of the students and faculty of the university. Freedom to teach and to learn are dependent upon individual and collective conduct to permit the pursuit and exchange of knowledge and opinion. Faculty have the responsibility to create an atmosphere in which students may display their knowledge. This atmosphere includes an orderly testing room and sufficient safeguards to inhibit dishonesty. Students have the responsibility to rely on their knowledge and resources in the evaluation process. The trust developed in the maintenance of academic standards is necessary to the fair evaluation of all students.

Academic dishonesty is against university as well as the system community standards. Academic dishonesty is defined as: cheating, plagiarism or otherwise obtaining grades under false pretenses. Plagiarism is defined as submitting the language, ideas, thoughts or work of another as one's own; or assisting in the act of plagiarism by allowing one's work to be used in this fashion. Cheating is defined as (1) obtaining or providing unauthorized information during an examination through verbal, visual or unauthorized use of books, notes, text and other materials; (2) obtaining or providing information concerning all or part of an examination prior to that examination; (3) taking an examination for another student, or arranging for another person to take an exam in one's place; (4) altering or changing test answers after submittal for grading, grades after grades have eeen awarded or other academic records once these are official.

Disciplinary procedures for incidents of academic dishonesty may involve both academic action and administrative action for behavior against the campus regulations for student conduct. The procedures involve the determination by the faculty member pursuing concerns over alleged cheating or plagiarism as to whether administrative action is warranted, in addition to making a determination as to any academic consequence. Academic action may include: (1) cancelling the student's enrollment in the class without a grade; (2) filing a final grade of "F"; (3) awarding a failing mark on the test or paper in question; (4) requiring the student to retake the test or resubmit the paper.

If the student wishes to appeal the academic action of the faculty member a special hearing board will be constituted to investigate the incident and determine whether the student is responsible for dishonesty and, if so, the appropriate academic action as a consequence for this act. The student will be entitled to receive notice of the academic charges and the opportunity to reply to or to rebut the charges before an unbiased board.

Alcoholic Beverages: The University of Nevada, Reno has an alcoholic beverage policy for students which establishes the standards of behavior and the circumstances under which alcoholic beverages are allowed to be possessed, consumed or distributed by students. Included within this policy are specific policies for students attending athletic events where alcoholic beverages are sold as part of concessions; for students hosting university-sponsored events where alcoholic beverages may be served and/or sold; and for students residing within or visiting the university residence halls.

In compliance with state law, no student may possess or consume alcohol if under 21 years of age; neither may a student offer alcoholic beverages to a minor (under 21 years) or have a minor as a guest in his or her residence hall room while alcoholic beverages are present and/or being consumed by anyone present.

The president has the authority to designate the time and place for special events where alcoholic beverages shall be served on the university campus (for student groups as well as the entire university community and guests). Students who are of legal age may consume alcohol at these events. Except as provided above, and as provided in the alcoholic beverage policy of the residence halls, the storage, possession, or use of alcoholic beverages shall not be permitted on university-owned or university-supervised property.

In addition, any student who exhibits offensive behavior on university-owned or university-supervised property, or while attending a university-sponsored event while under the influence of alcoholic beverages, shall be subject to university action.

For information on the residence hall policy for alcoholic beverages, refer to the Residence Halls Community Living handbook,

vailable in the Residential Life and Housing office. For informa-
on on the university's "Alcoholic Beverage Policy" and the policy
or student-group sponsored events with alcohol, contact the Of-
ice of Student Judicial Affairs and Greek Advisement.

Hazing: Hazing is not permitted at the University of Nevada, Reno. Hazing is considered an activity which interferes with scholastic and/or work activities, is demeaning, and may also be against fraternal law, ritual or policies and regulations of national fraternal organizations.

Hazing is defined as: any action taken or situation created to produce mental or physical discomfort, embarrassment, harassment or ridicule. Such activities and situations include, but are not limited to, paddling in any form; creation of excessive fatigue; physical and psychological shocks; road trips, quests, treasure or scavenger hunts outside of university-owned or university-controlled property; wearing apparel which is conspicuous and not normally considered to be in good taste publicly; engaging in public stunts and buffoonery; morally degrading or humiliating games and activities; or any other activity which would degrade or otherwise compromise the dignity of the individual, including forced use/or abuse of alcohol or drugs.

Any individual or group violating the university's hazing policy will be subject to university and/or criminal charges. Any fraternity or sorority violating this policy may also be subject to disciplinary action within the Greek disciplinary program for violating a standard of the "Greek Code of Conduct." (Refer to the Interfraternity Council and/or Panhellenic Council constitutions for information on the code of conduct and procedures for disciplinary action.)

Any person wishing to report activities of hazing by individuals or groups may contact the Office of Student Judicial Affairs and Greek Advisement. Disciplinary action may be taken through this office under procedures related to the student code of conduct and the Greek code of conduct.

Sexual Assault: The university and community college system has a regulation against the use of violence or force, or threats of the same; the University of Nevada, Reno has established a specific regulation against threatened, attempted or actual sexual assault by a student against any member of the university community. This policy was established to promote a community free from intimidation and harassment and to protect students from being subject to sexual assault while on university property or at university-sponsored events.

Sexual assault is defined as any sexual contact forced upon a person, including but not limited to: stranger rape, acquaintance rape, attempted rape, and sexual battery (unwanted touching, holding, kissing and so forth). A sexual encounter is an assault if one person proceeds to have sex with another person without his or her consent to the act. Sexual assault is considered to be committed by force and against another person's will even if that person is: unconscious, asleep, drugged, intoxicated or mentally unstable; and therefore cannot be agreeing to the act while under the use of his or her full faculties.

Any student found responsible for acts of sexual assault within the university community will be subject to disciplinary action. A victim of sexual assault by another student should report the incident and seek the appropriate attention (medical care, emotional support, judicial action) from the campus or community agencies offering resources (health care, counseling center, police department, student judicial affairs, women's center, Reno Crisis Center and other agencies). A student need not officially report an incident in order to be provided assistance. Reports may be confidential, based upon the student's desires.

Sexual Harassment: It is the policy of the University of Nevada, Reno that the sexual harassment of students, employees, and users of university facilities is unacceptable and prohibited. This stance is consistent with the university's efforts to maintain equal educational opportunity; non-discrimination in programs, services, and use of facilities, and the affirmative action program.

Sexual harassment is the introduction of sexual activities or comments into the work or learning situation. Often sexual harassment involves relationships of unequal power and contains elements of coercion—as when compliance with requests for sexual favors becomes a criterion for granting work, study or grading benefits. However, sexual harassment may involve relationships among equals, as when repeated advances or demeaning verbal behavior have a harmful effect on a person's ability to study or work.

As described in the regulation against sexual harassment (Subsection A, above), any student involved in acts of sexual harassment will be subject to student disciplinary action. In addition, any student who is the victim of sexual harassment, whether from another student, or from a university faculty/staff member, should report that harassment by contacting the Affirmative Action Office and/or the Office of Student Judicial Affairs and Greek Advisement. Contacts are confidential; formal complaints will be handled as a disciplinary matter.

A DRUG-FREE CAMPUS COMMUNITY:

LEGAL, HEALTHY, RESPONSIBLE USE OF ALCOHOL

The University of Nevada, Reno has joined other colleges and universities across the nation in encouraging the elimination of alcohol and other drug abuse on our campus and in our community. The substance abuse policy adopted by the University supports the belief that the unlawful possession or use of drugs, including alcohol, and the abuse of alcohol and any drug by students constitutes a grave threat to their physical and mental well-being, and significantly impedes the processes of learning and personal development.

While the majority of adults who drink alcohol do so in an acceptable and responsible manner, there is a substantial number who misuse and abuse alcohol, with resulting problems in health, academic, and vocational performance, social and personal relationships, and financial and legal areas.

With Any Privilege...

We at the Reno campus value the student's right to make his or her own choices. As with any privilege, however, there is a responsibility. In the case of choosing to drink alcoholic beverages comes the duty of doing so in a manner that is consistent with the laws of the state and community norms, and which involves respect for the rights of others.

In order to prevent and reduce alcohol-related problems, and to promote a drug-free and alcohol and abuse-free campus, we have developed a comprehensive substance abuse prevention program, dedicated to the promotion of responsible and appropriate use of alcoholic beverages through a wide variety of educational activities, which are free to all participating students.

University students are also eligible to receive on-campus services without cost, and are protected by federal and state regulations and laws governing their rights to privacy and confidentiality. The following educational activities and services are provided to students on an individual as well as a group basis, via scheduled appointment as well as on a "drop-in" basis:

— identifying the values and attitudes related to drinking alcoholic beverages;

— recognizing personal and societal motives for choosing to drink, developing appropriate decision-making skills;

— presenting information regarding the physiological and psychological effects of alcohol and of its potential effects on the individual and society;

— conducting workshops and training for events where alcoholic beverages are to be disbursed;

— intervention, assessment, and referral counseling for alcohol/drug abuse;

— on-going development of materials and activities that will enhance the quality of university events where alcoholic beverages are sold or available;

— use of a portable alcohol breathalyzer for student groups hosting events and/or educational presentations;

— provision of pamphlets, posters, films, and other information on alcohol and other drugs for student use and distribution;

— presentations required for campus living groups, including: fraternity and sorority chapters and university residence halls; and offered to all new students and the freshman forum;

— presentations to all interested student organizations and to academic classes.

Information on Campus Expectations

In regards to the "Drug-Free Schools and Communities Act," the University informs students about the student code of conduct, which includes standards involving the use and/or abuse of alcohol and other drugs on campus, as well as established university disciplinary sanctions related to these violations.

Standards of Conduct

The Board of Regents Handbook, Title 4, Chapter 20. Section 4 states the university and community college system's alcoholic beverage policy. It governs storage, possession, and use of alcoholic beverages by people of legal age. It also mandates disciplinary action against:

"any student who exhibits offensive behavior on university-owned or -supervised property or at university-sponsored events while under the influence of alcoholic beverages."

In addition, the University of Nevada, Reno Student Conduct Code prohibits the following:

Use or possession of alcoholic beverages without authorization; use of possession of illegal and/or unauthorized drugs and drug paraphernalia; providing alcoholic beverages to a minor while on university property or at university-sponsored activities. Any action which is contrary to the "Alcoholic Beverage Policy" for University of Nevada, Reno student groups or is in violation of Nevada state law.

Legal Standards

In addition to university student conduct standards, a student will be subjected to all local, state, and federal laws related to substance abuse or the possession/use of alcohol. The following state laws are presented which apply to any student conduct on or in the vicinity of the campus, in these instances, the student is being regarded as a resident of the state of Nevada:

NRS 202.020

Purchase, consumption or possession of alcoholic beverage by a minor; (2.) Any person under 21 years of age who, for any reason, possesses any alcoholic beverage in public is guilty of a misdemeanor.

NRS 202.040

False representation by a minor to obtain intoxicating liquor. Every minor who shall falsely represent himself to be 21 years of age in order to obtain any intoxicating liquor shall be guilty of a misdemeanor.

NRS 202.055

Sale or furnishing of alcoholic beverage to a minor; aiding minor to purchase or procure alcoholic beverage. (1.) Every person who knowingly sells, gives, or otherwise furnishes an alcoholic beverage to any person under 21 years of age...is guilty of a misdemeanor.

NRS 205.460

Use of false identification card by person under 21 years; gambling; obtaining liquor; penalty; demand of proof of age as defense. (1.) Every person who shall counterfeit, forge, alter, erase or obliterate, or who attempts to counterfeit, forge alter, erase or obliterate any card, writing, paper or document, or any photocopy print...which is designed for the purpose of personal identification...and (this is) used by a person under the age of 21 years to establish falsely or misrepresent his actual age for the purpose of purchasing alcoholic liquor or being served alcoholic beverages...is guilty of a misdemeanor.

Legal Sanctions

Legal action provides for sanctions ranging from the imposition of fines to incarceration. These sanctions are imposed after due process is pursued. Legal sanctions are governed by the Nevada Revised Statutes (NRS). Such sanctions result from the referral of an alcohol or other drug violation which comes to the attention of the University Police Department, and is referred to the District Attorney's Office. Legal action may take place concurrently with campus disciplinary action.

Campus Disciplinary Sanctions

A student involved in violations of university standards of conduct will be required (unless expelled from the university) to participate in an education and assessment process through the university substance abuse prevention program (or in some other appropriate program to which the student is referred for treatment) as a condition of continued association with the institution.

The following sanctions are presented as guidelines, indicating the range and the progression of sanctions–from educational programs through expulsion. These sanctions are applied on a case by case basis, depending on the specific nature of the alcohol and drug violation. Each student's case is evaluated in terms of that student's level of risk posed (health/danger to self and others) by his or her substance abuse:

A. Alcohol

1. For violations of campus policy related to possession or use: three-hour education seminar
2. For violations of campus policy which include other offensive or recidivist behavior:
   - •counseling and assessment
   - •residence hall or campus probation
   - •residence hall license withdrawal
   - •campus disciplinary probation
   - •extended probation with counseling
   - •suspension, and/or
   - •expulsion

B. Drugs

1. For violations involving possession or use:
   - •housing probation or license withdrawal
   - •disciplinary probation and referral to assessment/treatment
   - •suspension, and/or
   - •expulsion

2. For violations involving sale of drugs:
   - residence hall license withdrawal
   - suspension, and/or
   - expulsion

Drug-Free Schools and Communities Act

As part of the "Drug-Free Schools and Communities Act," college and university campuses are requested to provide all students with information on the campus rules, regulations, sanctions, legal action, and "at-risk behaviors" pertaining to alcohol and other drugs. More information on these topics may be obtained through the Office of Student Judicial Affairs by contacting the director at 102 Thompson Student Services Center; or by calling 784-4306. Information on the education, prevention, assessment and treatment services provided for alcohol or other drug abuse may be obtained through the university's substance abuse prevention coordinator, whose office is at 206 Thompson Student Services Center; or by calling 784-4648.

The University Core Curriculum

All undergraduate students are required to complete the university's core curriculum. Core curriculum requirements DO NOT APPLY to students who began transfer course work at the following University and Community College System of Nevada institutions prior to the 1990 fall semester: Community College of Southern Nevada, Northern Nevada Community College, Truckee Meadows Community College, Western Nevada Community College, University of Nevada, Las Vegas.

The university core curriculum consists of 33-36 credits, selected from the following areas of study:

- English;
- mathematics;
- natural sciences;
- social sciences;
- fine arts;
- the western tradition;
- and capstone courses.

Core Courses

Students are responsible for keeping track of their progress throughout the core curriculum. It is strongly recommended that students meet with their academic adviser each semester before registering for classes. Classes completed at the university to satisfy core curriculum requirements must be taken for a letter grade.

See the Course Offerings section of this catalog for course descriptions and prerequisites.

Core curriculum courses are listed below:

1. ENGLISH (first-year writing courses)—three to six credits

Each student's initial placement in first-year English courses will be based on ACT/SAT test scores.

English Course	ACT English	SAT Verbal
ENGL 1	20 or below	474 or below
ENGL 101	21 to 29	475 to 624
ENGL 102, 102H*	30 or above	625 or above

*Honors level

Students who successfully complete ENGL 102 will satisfy the core curriculum requirement. Normally, students take ENGL 101 during their first semester at the university and ENGL 102 during the second semester. Students who need extra practice in writing skills take ENGL 1 before registering for ENGL 101.

Students whose scores indicate placement in English 1 may opt to write a placement essay. (This does NOT guarantee placement above English 1.) The placement essay will be given the Friday before classes begin and the first day of classes each semester. Contact the Core Writing Program Office (784-6709) if you wish to exercise this option.

The English core requirement must be completed before students begin the western tradition sequence.

International students must complete ENGL 114 and any prerequisite.

	Credits
ENGL 101—Composition	3
ENGL 102—Composition	3

2. MATHEMATICS—three credits

The student's placement in mathematics courses is based on ACT or SAT scores, unless otherwise noted, or the university placement test. In order to be admitted to MATH 120, 128, 176, 178 or 181: it is necessary for students to have attained an appropriate score on the ACT or SAT exams in accordance with the following scale, or to have taken course prerequisites within the last two years with a grade of C or better (at a University and Community College System of Nevada institution).

Math Course	Enhanced ACT Math Score	SAT
MATH 101	20 or below	469 or below
MATH 120, 128	21 to 24	470 to 539
MATH 176, 178, 181	25 or above	540 or above

	Credits
MATH 120—Fundamentals of College Mathematics	3
MATH 128—Algebra and Trigonometry	5
MATH 176—Elements of Calculus	3
MATH 178—Calculus for Science	3
MATH 181—Calculus I	4

3. NATURAL SCIENCES—six credits (at least one course must be taken from Group A. The second course may be taken from either Group A or Group B). Students must complete the previously listed mathematics requirement before taking core courses in natural sciences.

Group A

	Credits
BIOL 100—Biology: Principles and Applications	3
BIOL 191—Organismal Biology	4
CHEM 100—Molecules and Life in the Modern World	3
CHEM 101—General Chemistry	4-5
CHEM 102—General Chemistry	5
CHEM 201—General Chemistry for Scientists and Engineers	4
CHEM 202—General Chemistry for Scientists and Engineers	4
PHYS 100—Introductory Physics	3
PHYS 151—General Physics	3
PHYS 152—General Physics	3
PHYS 153—General Physics Laboratory (to be taken with PHYS 151)	1
PHYS 154—General Physics Laboratory (to be taken with PHYS 152)	1
PHYS 201—Physics for Scientists and Engineers I (to be taken with PHYS 204)	3
PHYS 202—Physics for Scientists and Engineers I (to be taken with PHYS 205)	3
PHYS 203—Physics for Scientists and Engineers III (to be taken with PHYS 206)	3
PHYS 204—Physics for Scientists and Engineers I (to be taken with PHYS 201)	1
PHYS 205—Physics for Scientists and Engineers II (to be taken with PHYS 202)	1
PHYS 206—Physics for Scientists and Engineers III (to be taken with PHYS 203)	1

Group B

	Credits
ANTH 102—Human Origins and Evolution	3
B CH 150—Biotechnology: Science and the Citizen	3
GEOG 103—Geography of Man's Environment	3
GEOL 101—Our Dynamic Planet Earth	3

METE 151—Introduction to Materials	3
NUTR 121—Human Nutrition	3
PHYS 109—Planetary Astronomy	3
PHYS 110—Stellar Astronomy	3

. SOCIAL SCIENCES—three credits

	Credits
ANTH 101—The Human Experience	3
ANTH 200—People and Cultures of the Old World	3
ANTH 201—People and Cultures of the New World	3
ANTH 202—Introduction to Archaeology	3
EC 101—Principles of Macroeconomics	3
EC 102—Principles of Microeconomics	3
GEOG 106—Introduction to Cultural Geography	3
P SC 101—American Politics: Process and Behavior	3
P SC 211—Comparative Government and Politics	3
P SC 231—World Politics	3
PSY 101—Introduction to Psychology as a Social Science	3
SOC 101—Principles of Sociology	3

5. FINE ARTS—three credits

	Credits
ART 100—Visual Foundations	3
ART 116—Survey of the Art of Western Civilization I	3
ART 117—Survey of the Art of Western Civilization II	3
ART 121—Drawing	3
MUS 111—Concert Choir	1
MUS 118—Symphonic Band and Wind Ensemble	1
MUS 119—Symphonic Choir	1
MUS 120—Survey of Jazz	3
MUS 121—Music Appreciation	3
MUS 122—Masterworks of Music	3
MUS 125—University Orchestra	1
MUS 149—Studio Instrument/Voice for the Nonmajor	1
MUS 201—Music History I	3
MUS 202—Music History II	3
MUS 203— Music HistoryIII	3
MUS 204—Chamber Music for the Nonmajor	1
PHIL 202—Introduction to the Philosophy of the Arts	3
RPED 263—Aesthetics and Criticism of Dance	3
RPED 264—History of Dance I: Primitive-19th Century	3
RPED 265—History of Dance II: 20th Century	3
THTR 100—Introduction to the Theatre	3
THTR 110—Theatre: A Cultural Context	3
THTR 118—Orientation to Performing Theatre	3
THTR 221—Interpretation	3

6. THE WESTERN TRADITION—nine credits

All three western tradition courses are required. W T 201 must be taken first. W T 202 and 203 may be taken in any order. W T 203 satisfies the U.S. and Nevada constitution requirements.

	Credits
W T 201—Foundations of Western Culture	3
W T 202—The Modern World	3
W T 203—The American Experience and Constitutional Change	3

7. CAPSTONE COURSES—six credits

Students should take the last two courses in the university core curriculum during their senior year. The pair of required capstone courses build upon the core curriculum and courses in the student's major. The courses deal with ethical and substantive issues, problems and themes that affect the world community; they offer an analysis of different cultures and traditions, or issues relating to science and society.

Students must complete all other core curriculum requirements, including the western tradition sequence, prior to enrolling in capstone courses. One of the student's capstone courses may be a "major capstone course." At least one course must be a "general education capstone course."

Students should contact their academic adviser to identify additional courses that may fulfill the requirement.

General Education Capstone Courses

	Credits
AGEC 466—Natural Resource and Enviromental Economics	3
ANTH 390—The Heritage of Early Civilization	3
ANTH 440—History of Anthropology	3
C I 496—Education for a Changing World	3
C J 411—Comparative Criminal Justice Systems	3
C J 413—Dilemmas in Law and Law Enforcement	3
EC 463—Economic History of Europe	3
EC 464—Economic History of the United States	3
EC 481—History of Economic Doctrines	3
ENGL 467—Women and Literature	3
ENGL 490—Major Texts of the Enviromental Movement	3
ENGL 491—Language, Science and Society	3
FLL 450—Hispanic Women's Literature in Translation	3
H P 403—World Architecture	3
HCS 401—Human Diversity and Multiculturalism	3
HCS 490—Leadership in Contemporary Society	3
HIST 419—Modern American Civilization	3
HIST 480 (also listed as PHIL 480)—Science, Technology and Society	3
HIST 486—The Age of Discovery, 1300-1600	3
HON 443—Science and Culture	3
JOUR 450—Media Technologies and Society	3
MATH 301—Studies in the History of Mathematics	3
MGRS 462—Changing Enviroments	3
MINE 472—World Mineral Economics	3
MUS 321—Exploring World Music	3
NURS 322—Heritage of Nursing	3
P SC 414—Government and Politics in East Asia	3
P SC 415—Government and Politics in Latin America	3
P SC 417—Government and Politics in China	3
P SC 431—Holocaust and Genocide	3
P SC 435—International Political Economy: North-South Relations	3
P SC 436—International Human Rights	3
P SC 460—Politics and Literature in the 20th Century	3
PHYS 400—Energy: Principles, Sources and Problems	3
SPCM 412—Intercultural Communication	3
W S 440—Gender, Science and Technology	3

Major Capstone Courses (Majors Only)

	Credits
B CH 407—Senior Thesis I	3
B CH 408—Senior Thesis II	3
B CH 420-421—Proseminar	1 credit each
CH E 482—Design Project	3
CHEM 497—Senior Thesis I	3
CHEM 498—Senior Thesis II	3
E E 490—Electrical Projects Laboratory	2
E E 491—Engineering Design/Analysis	4
GEOL 451—Summer Field Geology	3
MECH 452—Design Synthesis	4
MECH 465—System Design	3
METE 482—Design Project	3
MGRS 488—Strategic Management and Policy	3
MINE 418—Mine Feasibility	3
NURS 417—Clients at Risk for Alterations In Health: Theory	4
NUTR 480—Nutrition Research and Contemporary Issues	3
PHYS 497—Senior Thesis	3

Max C. Fleischmann College of Agriculture

Bernard M. Jones, *Dean*
Dean's Office: 201 Fleischmann Agriculture, 784-6611

Departments of Instruction:

Agricultural Economics
Animal Science
Biochemistry
Range, Wildlife and Forestry
School of Veterinary Medicine

The agricultural food industry is one of the largest national and international industries, employing more than 20 percent of our nation's work force. The primary goal of the College of Agriculture is to educate people for professional careers in this industry.

The College of Agriculture's mission is to support man's capability for dealing with the enviroment. Central to this mission is the protection, utilization and management of the soil, water, air, plant and animal resources, the economic vitality of the agriculture industry, the development and implementation of technologies, and the quality of the environment. Of equal importance is a concern for the proper utilization of food in promoting healthier diets for man, as well as the social and economic well-being of individuals, families and society.

Instructional Program

The college provides instructional programs that emphasize practical applications of science, technology and theory. Excellent field and laboratory facilities are utilized to provide students with realistic educational experiences. After completing a program at the college, students will be prepared for a variety of professional careers in the agriculture industry or for graduate-level study.

Certificates

The College of Agriculture grants certificates for the successful completion of at least 75 credits toward a bachelor's degree, or for duly-authorized short courses or travel experiences. Students must apply for a certificate at the office of the associate dean.

Bachelor's Degree Programs

The College of Agriculture offers the bachelor of science degree with majors in agribusiness, agricultural education, animal science, biochemistry, resource management, textile and apparel merchandising and veterinary science. The agricultural education degree is offered jointly with the College of Education.

By selecting appropriate study options, students may specialize within their major. Each option includes certain required courses and electives to be selected in consultation with the student's adviser.

University Requirements

The following requirements apply for all students at the university who are working toward a bachelor's degree:

University Core Curriculum Requirements

	Credits
Writing	3-6
Mathematics	3
Natural science	3
Social science	3
Fine arts	3
Western Tradition courses	9
Capstone courses	6
	33-36

Agricultural Education Major

The College of Agriculture and the College of Education have implemented a cooperative agreement to prepare teachers of agriculture. **Students who seek careers as teachers of agriculture should enroll in the secondary education program in the College of Education's curriculum and instruction department.** They should complete the professional teaching courses in secondary education and occupational education.

Students will be required to take at least 36 credits of approved course work in the College of Agriculture to earn a major certification to teach agriculture education. In order to receive a teaching minor in agriculture education, students must complete 24 credits in the College of Agriculture.

For further information, contact either the College of Agriculture's associate dean for resident instruction or the occupational education coordinator in the College of Education's curriculum and instruction department.

AGRICULTURAL ECONOMICS (AGEC)

Department Office: 216 Fleischmann Agriculture, 784-6701

Agribusiness Major

The agribusiness major, offered through the agricultural economics department, is designed to provide students with a broad background in business and economics. The program is flexible, allowing students to specialize in a variety of areas through field electives. These electives include: agricultural economics, international business, marketing, management, finance, enviromental and resource economics, and regional and community economics. The department also offers a minor in agribusiness.

	Credits
University Core Curriculum Requirements	36
(MATH 176 is required; AGEC 466 is a required capstone course.)	
Departmental Core	
AGEC 211, 213, 270, 310, 313, 314, 315, 350, 425, 470	29
ACC 201, 202; EC 101, 102, 303; MGRS 323, 325	18
ENGL 321; JOUR 201; SPCM 113, 315, 329	6
	53
Field Electives	12
(Elective list available from department.)	
Other Electives	27
Total credits required	128

gribusiness Minor

The minor program is designed for students who are interested supplementing their major field with a background in gribusiness.

	Credits
GEC 211, 310, 332	9
vo courses from: AGEC 315, 322, 411, 425, 428, 466	6
C 101, 102	6
	21

extile and Apparel Merchandising Major

The textile and apparel merchandising major, offered through e agricultural economics department, is designed to prepare udents for entry into management positions related to the mer-handising of apparel and other textile and/or fashion-oriented oods. The department also offers a minor in textile and apparel erchandising. *This program will be terminated Jan. 1, 1994. Begin-ng Jan. 1, 1992, no students were admitted to the program.*

	Credits
niversity Core Curriculum Requirements	33-36

extile and Apparel Merchandising Curriculum

CC 201, 202	6
GEC 211, 213, 270	10
GEC 312, 313, 314, 425, 428, 470; MGRS 314, 422, 462, 470, 489; TAM 470	6
C 101, 102	6
GRS 310, 312, 323, 325, 367	15
SY 101	3
OC 101	3
PCM 113 or 329	3
AM 210, 212, 216, 270, 310, 311, 312, 315, 414, 416, 419	27
ectives	13
	92

Textile and Apparel Merchandising Minor

A minimum of 18 credits are required with nine or more credits arned in upper-division courses. *This minor will be terminated Jan. , 1994.*

	Credits
equired courses: TAM 210, 212, 216, 310, 311, 312, 414	15
t least one course from: TAM 315, 416, 419	9
	18-24

ANIMAL SCIENCE (A SC)

Department Office: 103 Fleischmann Agriculture, 784-6644

Animal Science Major

Students majoring in animal science prepare for careers in vestock production, as well as in the business, education, research nd services related to livestock. Professional opportunities in-lude: beef cattle ranching, meat processing and production, live-tock extension, university teaching and research, livestock con-ulting, market livestock analysis, and work as an animal ecreationist.

Animal science majors must complete the Group II core re-uirements listed on this page:

	Credits
University Core Curriculum Requirements	33-36

Group I Core Requirements

A SC 100, 203	6
AGEC 213 (or equivalent)	3
BIOL 191 (or equivalent)	4
CHEM 101, 102 and 142 or 343	11
EC 101 or 102	3
SPCM 113 and 213 or 315	6

Group II Program Requirements

This curriculum is designed to aid students in organizing a plan of study for their specific interests and to provide a sound background in scientific and management principles. Students may follow a course of study emphasizing agribusiness, equine management, livestock production, science, or a combination of these fields. **Programs of study must be approved both by the student's adviser and department chair following the completion of 64 credits.**

Lower-division Requirements

Select 15 credits not taken from the university core or the Group I requirements: A SC 280; AGEC 202, 211, 270; BIOL 190, 251; EC 101, 102; ENV 101, 294; MATH 176, 178, 179, 181, 182; NUTR 223, 225; PHYS 151, 152, 153, 154; RWF 100, 222; SPCM 213, 315; V M 100.

Upper-division Requirements

	Credits
A SC 307	3
A SC 309	3
A SC 325	3
A SC 400	1
A SC 406	4
Select two courses from the following: A SC 412, 413, 416, 423	5-6
V M 413	4

Select an additional 20 or 23 credits from the following:

A SC 316, 411, 412*, 413*, 414, 416*, 423*, 480
AGEC 310, 312, 313, 314, 315, 322, 332, 411, 425, 428, 460, 466
B CH 355, 400, 403, 404, 413, 417
BIOL 313, 314, 330, 370, 378, 404, 446, 460, 480, 481
ENV 457
NUTR 419
RWF 341, 345, 347, 351, 425, 427, 460, 482, 490

*If course was not taken above as a Group II requirement.

Animal Science Minor

The minor program is designed for non-majors who seek a background in animal science.

	Credits
A SC 100	3
A SC 203	3
A SC 307, 309, 325 or 406	9
A SC 412, 413 or 423	3
	18

BIOCHEMISTRY (B CH)

Department Office: Howard Medical Sciences, 784-6031

Biochemistry Major

An undergraduate major is offered in biochemistry and molecular biology through the College of Agriculture and the School of Medicine. The program provides the student with a well-rounded general education emphasizing the biological and chemical sciences and provides specific training in the major field through

a sequence of standard biochemistry and molecular biology courses during the student's junior and senior years. A minor in biochemistry is also available.

The bachelor of science degree with a major in biochemistry prepares students for graduate study, civil service positions, industry and professional fields related to life, health, agriculture and the medical sciences.

The curriculum for biochemistry majors is listed below. Fulfillment of this program satisfies university core curriculum requirements. Students should contact the biochemistry department for advisement.

Freshman Year

	Credits
BIOL 190, 191	7
CHEM 201, 202 recommended; CHEM 101, 102 accepted	8
ENGL 101, 102	6
MATH 181, 182	8
Electives	3
	32

Sophomore Year

	Credits
AGEC 270 or equivalent	3
CHEM 343, 344	6
CHEM 347, 348	4
PHYS 151, 152	6
PHYS 153, 154	2
W T 201, 202	6
Electives	5
	32

Junior Year

	Credits
B CH 400	4
B CH 403, 404	4
B CH 417	4
CHEM 330	4
CHEM 353, 354 recommended; CHEM 357 accepted	6
W T 203	3
Biological science elective	4
Elective	3
	32

Senior Year

	Credits
B CH 407, 408	6
B CH 413	4
B CH 420, 421	2
Biological science elective	4
Electives	7
Fine arts, social science core	6
Capstone course	3
	32

Minor in Biochemistry

Students majoring in another field may minor in biochemistry by completing the following:

	Credits
B CH 400, 403, 404	8
B CH 413 or 417	4
An additional six credits in any course in the physical sciences (including additional biochemistry)	6
	18

RANGE, WILDLIFE AND FORESTRY (RWF)

Department Office: 100D Knudtsen Resource Center, 784-6763

Resource Management Major

The resource management major, offered through the range, wildlife and forestry department, balances a basic interdisciplinary background with flexibility in career choice. Students are educated in the physical, biological and social sciences as they learn to apply analytical skills to diverse problems. The program prepares students for a career in natural resource management, hydrology, conservation biology or environmental science.

Study specializations include:

Natural Resources Management

Forest Management—Courses prepare students for careers as managers of forested lands. Emphasis is placed on the socioeconomic and technical forestry principles involved in the production and use of forest lands, including wood, water, wildlife habitat and forage.

Range Management—Courses provide students with the diverse background necessary to manage the natural resources vital to livestock and wildlife. Rangeland management studies include specialization in range plants and ecology, range evaluation methods, and range management principles and practices.

Wildlife Ecology—See the conservation biology description.

Hydrology

The curriculum is designed to provide a basic background in hydrology. Students learn to monitor water quality and quantity, and to determine the impact of land and water management activities on surface and groundwater resources. They are taught how to regulate water movement, classify soils, influence snowfall patterns, recognize the effects of salts, acids, sediments, heavy metals and nutrients on water quality, perceive the effects of landforms on water, and other significant techniques of enviromental management.

Conservation Biology

Courses emphasize aspects of wildlife/plant biology and conservation based on ecological principles. Students investigate habitat management, population biology and dynamics, conservation genetics, and behavioral ecology in multiple-use programs on public and private lands. The course of study stresses the maintenance of biotic diversity, conservation and management.

Environmental Science

Courses are designed to satisfy an interest in environmental science. Students will acquire a strong background in chemistry and related natural sciences which will provide them with a basic understanding for job opportunities in the more general area of environmental sciences or for continuing on to graduate school. See department for program of study.

The areas of emphasis correspond to recognized professions in the broad fields of natural resource management, hydrology, conservation biogyl and environmental chemistry with specific professional and civil service requirements. As a rule, electives can be taken to meet special interests of the student. A student may choose a substantial number of courses in related fields such as business, law, agriculture, economics or public relations.

The curriculum consists of lower-division courses to meet the university and departmental requirements. These courses are normally completed during the freshman and sophomore years. Upper-division core requirements (see list below) and professional electives are normally completed during the junior and senior years. The student selects electives in consultation with an adviser.Thirty-six credits of university Core Curriculum requirements must be earned before graduation. Many of the required courses are also part of the resource management core listed below.

Natural Resource Management

	Credits
AGEC 213	3
AGEC 270	4
BIOL 190	3
BIOL 191	4
BIOL 314	3
CHEM 101, 102	8
ECON 102	3
GEOL 101	3
MATH 128	5
P SC 458	3
RWF 100	3
RWF 222	4
RWF 304	3
RWF 341	3
RWF 345	5
RWF 351	3
RWF 405	5
RWF 407	5
RWF 421	3
RWF 427	3
RWF 493	3
SPCM 113	3
	82

The remaining credits needed for graduation are comprised by other university requirements as well as elective courses in the student's area of interest. Students, after consulting with an adviser, may also use electives to fulfill professional or civil service requirements.

The hydrology core curriculum is listed below:

	Credits
AGEC 213 or C S 183	3-4
AGEC 270	4
AGEC 470	3
BIOL 190	3
BIOL 191	4
BIOL 314	3
C E 415	3
C E 497 or BIOL 420	3
CHEM 201, 202	8
EC 102	3
ENGR 201 or SPCM 113	3
G E 484	3
GEOL 101	3
MATH 181, 182	8
PHYS 151	3
RWF 222	4
RWF 306 or GEOG 421	3
RWF 414	3
RWF 422	3
RWF 482	3
RWF 483	3
	76-77

The remaining credits needed for graduation are comprised by other university requirements as well as elective courses in the student's area of interest. Students, after consulting with an adviser, may also use electives to fulfill professional or civil service requirements.

The conservation biology core curriculum is listed below:

	Credits
AGEC 213 or C S 183	3-4
ANTH 101 or 202	3
BIOL 190	3
BIOL 191	4
BIOL 313	3
BIOL 314	3
BIOL 394	2
BIOL 420	3
BIOL 446	3
BIOL 481	3
BIOL 482	1
CHEM 101, 102	8
EC 102	3
ENV 457	3
MATH 178, 179 or MATH 176 and AGEC 270	6
RWF 100	3
RWF 347	3
RWF 411	3
RWF 421	3
RWF 424 or 425	3
Physical science electives	6-7
	72-74

The remaining credits needed for graduation are comprised by other university requirements as well as elective courses in the student's area of interest. Students, after consulting with an adviser, may also use electives to fulfill professional or civil service requirements.

Environmental Science

AGEC 270	4
BCH 400	4
BCH 432	3
BIOL 190	3
BIOL 191	4
BIOL 314	3
CHEM 201, 202	8
CHEM 330	4
CHEM 343, 344	6
CHEM 347	2
CHEM 353	3
MATH 181, 182	8
P SC 457	3
PHYS 151, 152	6
PHYS 153	1
PHYS 412	3
RWF 222	3
RWF 304	3
RWF 411	3
RWF 422	3
RWF 467	4
	80

The remaining credits needed for graduation will be comprised of other university requirements as well as elective courses in the area of study, or to meet specific professional or civil service requirements. Students will consult with their adviser regarding remaining credits.

VETERINARY MEDICINE (V M)

School Office: 103 Fleischmann Agriculture, 784-6135

Veterinary Science Major

The program, offered by the School of Veterinary Medicine, provides a basic three-year preprofessional curriculum that satisfies the entrance requirements for the four-year professional curriculum at various schools of veterinary medicine.

Qualified Nevada residents may participate in a program funded through the Western Interstate Commission for Higher Education (WICHE). The contract program allows Nevada residents access to enrollment at certain professional schools.

The university's preprofessional program offers students intensive advisement, an internship with veterinary practitioners and scholarships from the Gordon MacMillan endowment. Students are selected for the professional program based on the following factors: high academic performance, practical experience in some phase of veterinary medicine, references, motivation, personal interview and results of written examinations.

Students who satisfactorily complete the three-year preveterinary curriculum (including the university core and total credit requirements), and who are accepted into a professional program, may qualify for a bachelor of science degree from the university after completing 32 semester credits at the professional school.

Veterinary Medicine Curriculum

	Credits
A SC 325, 406	6
AGEC 270 or EC 261	3
B CH 400	4
BIOL 190, 191, 251, 480	14
CHEM 101, 102, 343, 344, 345	16
ENGL 101, 102	6
MATH 128	5
PHYS 151, 152, 153, 154	8
V M 100	1
Humanities electives	6
Social science electives	6
Suggested electives: A SC 100, 307, 412, 413, 424; AGEC 202, 213; BIOL 313, 368, 468, 480; SPCM 113; V M 413	

Minimum of 96 credits required.

Graduate Offerings

Both major-minor and area of concentration programs are available at the graduate level. The master's programs include both Plan A (requiring the completion of a thesis) and Plan B (nonthesis). Students must earn 30 credits to complete Plan A and 32 credits to complete Plan B.

The graduate plan of study is developed by the student and the advisory committee. The study program must meet the minimum requirements listed in the Graduate School section of this catalog. Students must also meet any additional requirements specified by the advisory committee or the related department(s).

The doctor of philosophy degree is primarily a research degree with a course of study determined by the student and an advisory committee. The program must meet the minimum requirements listed in the Graduate School section of this catalog.

Graduate research assistantships are available. Applications should be submitted to the appropriate department.

Master's and Doctoral Programs

The College of Agriculture offers nine master of science degree programs. Programs requiring a thesis are available with majors in agricultural economics, animal science, biochemistry, integrated pest management, plant science, resource management, and in the interdisciplinary programs of cellular and molecular biology, land use planning, and hydrology and hydrogeology. Non-thesis programs are available in agricultural economics, animal science, integrated pest management, plant science and resource management. Students may also specialize in occupational education in a cooperative program with the College of Education. The course of study leads to a master of education degree with a major in secondary education.

The College of Agriculture offers four doctoral degree programs jointly with other colleges. The degree offerings include: biochemistry (in the College of Agriculture and School of Medicine); cellular and molecular biology (in the colleges of agriculture and arts and science, as well as the School of Medicine); ecology, evolution and conservation biology (in the colleges of agriculture and arts and science); and hydrology and hydrogeology (in the colleges of agriculture and engineering, as well as the School of Mines). For information about programs and course requirements, refer to the Interdisciplinary and Special Programs section of this catalog.

Agricultural Economics Major

The agricultural economics department offers a master's degree in agricultural economics.

Graduate study in the field includes the following areas of specialization: production economics, agricultural marketing, land and water economics, agricultural policy, price analysis, agricultural business, and environmental and resource economics.

Two study plans are available to students pursuing the master of science degree. Plan A requires students to write a thesis. The Plan B requirement includes the writing of a professional paper and completion of additional coursework. In order to earn the master's degree, students must pass comprehensive written and oral examinations.

Students may select minors from any approved study specialization at the university, including the following fields: business management, economic theory, technical agriculture and renewable natural resources, political science, psychology, and sociology.

The department also participates in the interdisciplinary land use planning policy program, in which students can earn the master of science degree. For further information, refer to the Interdisciplinary and Special Programs section of this catalog.

The agricultural economics department cooperates with the College of Business Administration in offering a master of business administration (MBA) degree with concentration in agribusiness. Students interested in pursuing this program should contact either the College of Business Administration or the agricultural economics department.

Animal Science Major

Students who pursue the master's degree in animal science must fulfill the requirements of the Graduate School and their advisory committee. The degree may be obtained either with or without completing a thesis requirement. The thesis may be written on research completed in nutrition, physiology, production, management, meats and general animal science. The number and nature of graduate examinations are determined by the student's advisory committee.

Students in the nonthesis program must meet the following requirements: have at least five years professional experience in agriculture related to animal science or complete an approved professional project. The project is selected by the student and the adviser for approval by the student's advisory committee.

The professional project is designed to train the degree candidate for increased proficiency in the livestock industry. It may comprise: either a field study carried out under the direction of the adviser or other appropriate university staff member, or a full-time progressive agricultural program, which gives the student experience in administration and other activities of the livestock industry. The student, who may receive a salary for work performed, must continue the project for at least one semester or for three months during the summer. Following completion of the project, students must submit a detailed written report of the work experience.

Degree candidates must select an approved topic appropriate to their major and write a professional paper incorporating and interpreting pertinent literature. In completing the paper, students earn three graduate-level credits. The literature review and the professional project report may be incorporated into one paper, if appropriate.

Biochemistry Major

Master of science and doctor of philosophy degrees may be earned in biochemistry in an interdisciplinary program. The plan of study may involve either a major-minor or field of concentration program. For specific program information, refer to the Interdisciplinary and Special Programs section of this catalog.

Examination procedures for the degrees are given in the Graduate School section of the catalog.

Plant Science Major

Students pursuing a master of science degree in some area of modern plant biology may work under the guidance of the plant science faculty.

Degree candidates may choose either a Plan A (thesis) or Plan
(nonthesis) study program. Students who hold a bachelor's
egree and who have some background in the natural and/or
hysical sciences will be considered for this program. The nature
f required course work and examinations will be determined by
he student's faculty advisory committee. In general, students
hould plan to complete the master's program in two years.

Research specializations include: ion transport, molecular biol-
gy of cell-wall proteins, photosynthesis, nitrogen metabolism and
utrition, salinity and drought stress, turfgrass biology and regu-
ation of gene expression.

Research fellowships are available on a competitive basis.

Resource Management Major

The master of science degree in resource management may be
ursued through either Plan A (requiring the completion of a
hesis) or Plan B (nonthesis). Students must hold a minimum
verall grade-point average of 3.0 to ensure that they will be
onsidered for admission to the program.

The research focus of the department is natural resource management, hydrology, conservation biology and enviromental chemistry. The study of natural resource management and its subfields includes: the management and repair of riparian areas, water utilization and conservation, population biology and dynamics, mining rehabilitation, water quality enhancement through soil and water interactions, wildlife ecology, range ecology, reforestation, and other problems related to the environment. A brief description of current research programs is available at the department office.

Master of science and doctor of philosophy degrees may be earned in hydrology and hydrogeology in an interdisciplinary program. For further information, refer to the Interdisciplinary and Special Programs section of this catalog.

A master of science degree may be earned in land use planning in an interdisciplinary program. For further information, refer to the Interdisciplinary and Special Programs section of the catalog.

A doctor of philosophy degree in ecology, evolution and conservation biology is available in an interdisciplinary program. For further information, refer to the Interdisciplinary and Special Programs section of this catalog.

College of Arts and Science

Ann Ronald, *Dean*
Robert Mead, *Associate Dean*
Dean's Office: 631 Business Building, 784-6155

For footnote explanation, see page 87

Departments of Instruction:

Anthropology
Art
Biology
Chemistry
Criminal justice
English
Foreign languages and literatures
Geography
History
Mathematics
Military Science
Music
Philosophy
Physics
Political Science
Psychology
Sociology
Speech communication and theatre

Objectives

The College of Arts and Science, through its undergraduate and graduate programs, offers students the discipline and knowledge gained from a traditional liberal education. Students are encouraged to develop intellectual curiosity and to think with creativity and discipline.

Through the university core curriculum and other college requirements, the student's education is directed with foundational courses in the natural and social sciences, mathematics, the arts and the humanities. These courses provide students with the basic skills necessary to properly use knowledge and carry out orderly investigation. The requirements for a field of concentration (major and minor subjects) are intended to equip the student with a deeper understanding of at least one body of knowledge, sometimes in preparation for a profession or for advanced study.

Requirements for the Baccalaureate Degree

A candidate for a bachelor's degree in the College of Arts and Science must earn a minimum of 128 credits in required and elective courses. Each candidate must complete:

1. The requirements listed under Prescribed Courses for Arts and Science Majors.
2. Courses totaling 40 credits or more in courses numbered above 300.
3. The requirements for a field of concentration (major and minor subjects), usually total 50 credits. The particular grouping of courses depends on the educational goals of the student, but must be in accord with departmentally-sponsored fields of concentration or cross-disciplinary fields outlined in this catalog.

It is advisable that students plan their work for their junior and senior years as early as the sophomore year, sometimes as early as the freshman year, in order that they make satisfactory progress toward obtaining their degree. At the beginning of the junior year, each student, in consultation with the adviser and with the approval of the chairman, should submit to the office of the dean a Field of Concentration form. This form requires approval of the department chair sponsoring the field of concentration.

The remaining credits necessary to reach a total of 128 in the chosen course of study may be freely elected from any department in the university.

Candidates for graduation must submit an application for graduation to the dean of the College of Arts and Science at the beginning of the final semester before graduation.

Prescribed Courses for Arts and Science Majors:

1. Satisfactory completion of the university core curriculum.
2. Bachelor of arts and most bachelor of science degree programs require the successful completion of a fourth semester college course in a foreign language, or evidence of equivalent proficiency as determined by placement examination, or other means, by the department of foreign languages and literatures. A student who successfully completes the fourth year course of a foreign language in high school satisfies the requirement. The foreign language requirement is a departmental option for other bachelor degrees and for the bachelor of science degree with an expanded field of concentration. Information on the programs with a departmental option may be obtained from those departments or from the office of the dean of the College of Arts and Science.
3. Arts and science majors also must complete: (a) a second social science course from the core curriculum list (this course must be from a different department than the student's first social science course), and (b) a course in literary traditions., either ENGL 304 or FLL 304. As in item No. 2 above, this requirement is a departmental option for those programs with an expanded field of concentration.

Major and Minor Programs: The college generally requires that students specialize in at least two areas., completing a major and a minor or a dual major. The same course may not be used in both the major and minor or dual major area.

Students who seek a *dual baccalaureate degree* with one or both degrees in the College of Arts and Science are required to fulfill all college requirements. A dual degree requires the completion of a minimum of 32 credits beyond the requirements for the first degree. Within the college, it is expected that a student seeking a dual baccalaureate degree will specialize in a minimum of three areas, completing two majors and at least the equivalent of one minor. The student's field of concentration may consist of a major only, for some departments or programs (including biology, chemistry, criminal justice, geography, mathematics, music and physics), or a major interest area and a minor interest area for other departments. Majors are offered in each department in the College of Arts and Science, except military science and in prelegal studies. Approved minors exist in most departments within the college, in interdisciplinary programs and some departments outside the college.

1. The requirements for most fields of concentration consist of jor requirements and minor requirements. For departments quiring a major only, the field of concentration includes courses quired in the department and specific courses required in other lds.

2. Students have the option of completing a minor program if ey wish, even if a minor is not required for completion of the field concentration.

3. The completion of an approved minor is recorded on the dent's permanent record at the time of graduation.

4. Minor programs in the same department as the major are not cepted, except in English, foreign languages and literatures, and eech communication and theatre.

5. With justification, a student may petition the dean through department to have a special related field substituted for a quired minor. The special field, however, is not recorded on the dent's transcript as a minor.

Approved Minors: Minor interest areas that may be used to lfill a student's field of concentration, or that may be completed thin the college are listed below. Approved minors include:

Accounting
Anthropology (cultural anthropology, archaeology)
Art
Athletic training
Basque studies
Biology
Business administration
Chemistry
Computer sciences
Computer information systems
Criminal justice
Dance
Economics
English (literature, language and linguistics, dramatic literature, English as a second language, writing)
Environmental studies
Ethnic studies
French
Geography
Geology
Gerontology
German
Historic preservation
History (general history, American history, European history, third world history)
Human development and family studies
Interior design
Italian
Journalism
Mathematics
Medieval and renaissance studies
Museology
Music
Nutrition
Philosophy
Physics
Political science (general, foreign affairs, public administration, American government, public policy)
Psychology
Recreation and physical education
Religious studies
Sociology (general sociology, applied sociology)
Spanish
Speech communication
Theatre
Women's studies

A description of the required courses for each minor may be und under the heading of the appropriate department or interisciplinary program that offers the minor.

Suggested Curriculum for First Two Years: In order that these requirements may be used efficiently to assure a well-balanced curriculum and at the same time allow students some freedom of choice as they select courses, the following course of study is recommended for the first two years. Because of the variation in language and additional general education requirements, each lower-division student should consult with the assigned adviser and the appropriate official of the Department of Foreign Languages and Literatures for proper advisement.

Freshman Year

(16 credits per semester)	Credits
ENGL 101, 102	6
Foreign language, mathematics	11-13
Other core curriculum courses	3-6
Electives or major/minor courses	7-12

Sophomore Year

(16 credits per semester)	Credits
Foreign language	4-6
Western tradition	6-9
Other core curriculum/college requirement courses	6-9
Electives or major/minor courses	8-16

General Regulations: Except as otherwise specified, all students, including transfer students, must fulfill the requirements listed above before they receive the bachelor's degree from the College of Arts and Science.

In addition to the university's graduation requirement that every student must have an average of two grade points for each credit registered, the College of Arts and Science requires each of its students earn a grade-point average of 2.0 in both the major and minor interest portions of their field of concentration.

The college's policy on satisfactory/unsatisfactory-graded courses conforms in every respect to the university policy, except for the restriction that courses taken for S/U credit may not count toward the field of concentration (major and minor subjects) unless the elected courses are recommended by the adviser and department chairman with the approval of the dean, or if the course is only offered for S/U credit.

Graduate Study

Dean's Office: 239 Getchell Library, 784-6869

Graduate programs leading to the degrees of master of arts or master of science are offered in :

Anthropology
Atmospheric physics
Biology
Chemistry
English
Foreign languages and literatures (French, German, Spanish)
History
Land use planning [1]
Mathematics
Music
Philosophy
Physics
Political science
Psychology
Public administration
Sociology
Speech communication
Teaching of English
Teaching of English as a second language
Teaching of mathematics

Graduate programs leading to the degree of doctor of philosophy are offered in:

Anthropology
Atmospheric science
Basque studies
Cellular and molecular biology [1]
Cellular and molecular pharmacology and physiology [1]
Chemical physics [1]
Chemistry
Ecology, evolution and conservation biology [1]
English
History
Physics
Political science
Psychology
Social psychology

Further information on all programs may be obtained from the chairman of the related department.

Program for Adult College Education (PACE)

The College of Arts and Science's Program for Adult College Education offers an innovative way to earn an undergraduate degree for students who are unable to follow the traditional class schedule. Students who work and have family responsibilities can earn a bachelor of general studies degree in four to six years with a curriculum integrating courses from the humanities and fine arts, social and natural sciences and schools other than arts and science. The PACE program is also open to students in other major programs who need weekend or evening courses.

Students may register for six or 12 credits in blocks of related courses, usually arranged under themes such as "Women's Studies," "Environmental Studies," or "Studies in American History and Culture."

A typical six-credit block consists of a four-hour meeting one night a week for 15 weeks, or four weekend sessions, and an independent study segment requiring an additional 26 hours of outside study per semester. A 12-credit block would consist of two six-credit blocks.

Requirements for the completion of the PACE program are the same as those for the university's Bachelor of General Studies degree (see General Studies, page 149). For more information, contact Dr. Mary Stewart, director of the PACE program, 631 Business Building, 784-1465.

Prelegal Curricula in the University

Most law schools do not recommend a specific undergraduate major for prospective law students. A broad general education with emphasis on courses that develop clear and systematic thinking is the best preparation for the study of law. Prelaw students are advised to develop their command of the English language and their ability to communicate ideas clearly, logically, and critically.

Students should read the catalogs of law schools in which they are interested and the "Preparation for Law School: Prelaw Study" sections in the *Prelaw Handbook* for more detailed discussion of the recommended general education program .

In addition to their chosen major, students select approximately 40 credits from a prescribed list of courses. As such, the prelegal program substitutes for a required minor subject. Several departments have prelegal advisers. For more information, contact the program chairman, Political Science Department, 138 Mack Social Science Building.

ANTHROPOLOGY (ANTH)

Department Office: 512 Business Building, 784-6704.

The department offers courses leading to the degrees of bachelor of arts, master of arts and doctor of philosophy.

Bachelor of Arts Degree

Major Interest Subject

	Credits
ANTH 101, 102, 200 or 201, 202, 312, 405, 440	21

In addition, all majors must take at least one course from each of the following four groups (one course must include study of a particular geographical area):

	Credits
1. Archaeology—ANTH 400, 401, 402, 403, 404, 409, 423, 424, 425, 426, 476	2-3
2. Physical Anthropology—ANTH 430, 431, 435, 436	3
3. Linguistics—ANTH 411, 414, 415, 416, 420, 429	3
4. Cultural Anthropology—ANTH 210, 330, 345, 390, 406, 452, 460, 461, 462, 464, 466, 467, 470, 491	3
	32-33

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. Anthropology accepts any minor approved by the College of Arts and Science.

Both museology and historic preservation are approved areas of study for anthropology majors. See Interdisciplinary and Special Programs section for description.

Minor in Anthropology

Students majoring in another field may minor in anthropology by completing the following:

Minor Interest Subject (Cultural Anthropology)

	Credits
ANTH 101, 102, 200 or 201	9
At least one of the following geographical area courses: ANTH 461, 462, 464, 466, 467	3
Additional courses to be selected from: ANTH 210, 312, 345, 390, 406, 429, 440, 460, 491	6
	18

Minor Interest Subject (Archaeology)

	Credits
ANTH 101, 102, 202	9
Additional courses selected from: ANTH 400, 401, 402, 404, 409, 423, 424, 425, 426, 476	9
	18

Master of Arts Degree

Candidates for the master of arts degree must satisfy the general requirements of the Graduate School and specific departmental requirements. The completion of 30 credits is required, 18 of which must be at the 700-course level.

A thesis is also required. Optional tracks for this research include: enviromental archaeology, historical archaeology, cultural anthropology, medical anthropology and ethnolinguistics.

The department is closely associated with the Historic Preservation program and participates in the master of science degree in land use planning policy, described in the Interdisciplinary and Special Programs section of this catalog.

A limited number of teaching assistantantships are offered on a competitive basis.

Graduate-level students are admitted to the program only in the fall semester. The deadline for application is March 1.

Doctor of Philosophy Degree

Applicants for admission to the doctoral program must satisfy ll Graduate School requirements and specific departmental re-uirements.

The doctoral program provides training in three subfields of nthropology: (1) environmental archaeology; (2) historical ar-haeology and (3) cultural anthropology (including anthropologi-al linguistics and ethnohistory). The geographic emphasis for issertation research is restricted to Western North America, in-luding Mexico, although research in certain topical subjects or ther world areas may be proposed. The program emphasizes the esearch strengths of the anthropology department, Basque Stud-s program and Desert Research Institute faculties.

A limited number of teaching assistantantships are offered on competitive basis.

Graduate-level students are admitted to the program only in he fall semester. The deadline for application is March 1.

ART (ART)

Department Office: 209 Church Fine Arts Complex, 784-6682

The department offers courses leading to the degree of bachelor of rts in art studio and history of art.

Bachelor of Arts Degree

Option: Art Studio

	Credits
ART 100, 121	6
ART 221, 222, 321 or 135, 235, 236 or 150, 250, 252 or 163, 263, 264 or 175, 275, 276 or 185, 285, 286	9
ART 116, 117 and one additional art history course	8-9
ART 403	2
Art courses numbered 300 or above, chosen with the approval of the adviser and dean	12
	37-38

Option: History of Art

	Credits
ART 116, 117	6
ART 100 or another 100-level studio art course	3

Additional courses in art history numbered 200 and above to total 36 redits. Courses should be chosen from the following list: ART 313, 314, 15, 316, 317, 318, 319, 408, 416, 417, 418 and 419. ART 408 and 419 may ach be taken only once for no more than a total of six combined credits 27

36

It is recommended that art majors with a two-dimensional oncentration elect either ART 163 or 175, and those with a three-limensional concentration elect ART 135 sometime during the arly portion of their programs.

Additional Required Courses: In addition to credits for the major, tudents must complete 18-21 credits in a minor. Art accepts minors pproved by the College of Arts and Science.

Minors in Art

Students majoring in another field may minor in art by complet-ng one of the following options:

Option: Art Studio

	Credits
ART 100, 121, 116, 117	12
Nine credits from ART 135, 150, 163, 175, 185	9
	21

Option: Art History

	Credits
ART 100	3
One studio course selected from: ART 121, 135, 150, 163, 175, 185	3
ART 116, 117	6
Three additional courses selected from ART 314, 315, 316, 317, 318, 417, 418, 419	9
	21

Option: Photography

	Credits
ART 100, 150, 250, 251, 350, 355	18
One additional upper-division course in photography	3
	21

Option: Ceramics

	Credits
ART 100, 116, 163, 175, 275, 276	18
One additional upper-division course in ceramics	3
	21

Option: Painting

	Credits
ART 100, 117, 121, 135, 235, 236	18
One additional upper-division course in painting	3
	21

Option: Printmaking

	Credits
ART 100, 121, 185, 285, 286, 385	18
One additional upper-division course in printmaking	3
	21

Option: Sculpture

	Credits
ART 100, 116, 163, 175, 263, 264	18
One additional upper-division course in sculpture	3
	21

Secondary School Teacher Licensure: Students in the College of Arts and Science majoring in art may work toward licensure to teach at the secondary level (middle, junior, and senior high schools) by electing required courses offered through the College of Education and ART 346, in addition to the departmental major.

A teaching minor concentration is available to students who seek a major other than art. It consists of approximately 26 credits, most of which are prescribed.

BIOLOGY (BIOL)

Department Office: 142 Fleischmann Agriculture, 784-6188.

All biology majors complete a common core of required biology courses and required related courses to earn the bachelor of science degree. Biology majors also select a group of elective courses to comprise their specialized field.

Bachelor of Science Degree

Required Biology Core Courses

	Credits
BIOL 190, 191, 313, 314, 393 or 394, 415	19

Required Related Courses

	Credits
CHEM 101, 102 and 142, 143 or 343, 344, 345	12-16
MATH 128, 178, 179	11
PHYS 151, 152, 153, 154	8
	31-35

Elective Life Science Courses

	Credits
Selected in consultation with adviser (10 or more must be in upper division)	15
Programs of study are available in: general biology education, ecology, cell biology, and prehealth. Students may also arrange with their adviser to develop an individualized program of study in other fields of specialization.	
TOTAL	65-69

The following additional courses are required for students to receive a "with distinction" degree in biology:

	Credits
BIOL 492	3
BIOL 495	1

Biology majors are required to complete the courses of the University Core Curriculum, but are exempt from the College of Arts and Science requirement for foreign language and additional literary traditions and social sciences courses.

Minor in Biology

Students majoring in another field may minor in biology by completing the required biology core courses (19 credits). Because of prerequisites associated with some of these courses, students taking a minor in biology will also need to complete MATH 128 and CHEM 101, 102, 142.

Master of Science Degree

The department of biology offers graduate programs leading to the master of science degree in biology. Two degree plans are available: Plan A includes a thesis, Plan B does not include a thesis.

Doctor of Philosophy Degree

The department of biology participates in four interdepartmental Ph.D. programs: biochemistry; cellular and molecular biology; cellular and molecular pharmacology and physiology and ecology, evolution and conservation biology. Prospective students must meet the requirements established by the university and the Graduate School for admission to these graduate programs.

For more information, see the Interdisciplinary and Special Programs section of this catalog or contact the Graduate School dean's office, 239 Getchell Library, phone 784-6869.

CHEMISTRY (CHEM)

Department Office: 213 Chemistry Building, 784-6041

The department offers courses leading to the degrees of bachelor of science, master of science and doctor of philosophy.

Bachelor of Science Degree in Chemistry

The bachelor of science degree in chemistry is a professional degree certified by the American Chemical Society. Upon obtaining the degree, students are prepared for graduate study, civil-service positions and work in industry.

The field of concentration in chemistry provides basic training for other professions; generally, graduates can enter the chemical profession if they have taken the recommended upper division chemistry courses. Students planning to pursue a career in medicine or dentistry may also enroll in this program.

Freshman Year

	Credits
CHEM 201-202 recommended (CHEM 101-102 acceptable)	8
ENGL 101, 102	6
MATH 181-182	8
Social science and fine arts core requirements	6
Electives	3
	31

Sophomore Year

	Credits
CHEM 343-344	6
CHEM 347-348	4
MATH 281, 285	6
PHYS 201-202 recommended (PHYS 151-152 acceptable)	6
PHYS 204-205 recommended (PHYS 153-154 acceptable)	2
W T 201, 202	6
Electives	3
	33

Junior Year

	Credits
CHEM 330	4
CHEM 353-354	6
CHEM 355	3
CHEM 434	3
Related electives (chemistry, mathematics, biochemistry, physics 300/400-level courses; computer programming), other electives	6
GER 101-102 (or equivalent courses in French or Russian)	8
W T 203	3
	33

Senior Year

	Credits
CHEM 415	3
CHEM 461	3
CHEM 497 (capstone), 498	6
Chemistry electives (two of the following courses required: CHEM 442, 443, 450, 456, 462; B CH 400, 403)	5-8
Related electives, other electives	8-11
Capstone course	3
	31

Bachelor of Science with Field of Concentration in Chemistry

Freshman Year

	Credits
CHEM 201-202 recommended (CHEM 101-102 acceptable)	8
ENGL 101-102	6
MATH 181, 182	8
Core courses (social science and fine arts)	6
Electives	3
	31

Sophomore Year

	Credits
CHEM 343-344	6
CHEM 347-348 recommended (CHEM 345, 391 acceptable)	4
PHYS 151-152	6
PHYS 153-154	2
W T 201, 202	6
Electives	9
	33

Junior Year

	Credits
CHEM 330	4
CHEM 353-354	6
Chemistry electives (CHEM 355, 434, 443, or B CH 400)	3-4
GER 101-102 (or equivalent courses in French or Russian)	8
WT 203	3
Electives	7-8
	32

Senior Year

	Credits
HEM 415	3
emistry electives (three of the following courses required, including one laboratory course: CHEM 355, 434, 442, 443, 450, 456, 461, 462; B CH 400, 403), see junior year	9-10
lated electives (chemistry or other science and mathematics; 300/400 level courses; courses in computer programming)	6
pstone courses (CHEM 497 recommended)	6
ctives	7-8
	32

In addition to the above requirements, all general requirements the College of Arts and Science must be satisfied; this includes 16 edits in humanities and social science courses.

linor in Chemistry

Students majoring in another field may minor in chemistry by mpleting a minimum of 20 credits in chemistry. Students must mplete an organic chemistry laboratory course of two credits d nine upper-division credits in chemistry. A maximum of two edits of CHEM 387 and 391 may be applied to comprise the nine pper-division credits.

laster of Science Degree

Candidates for the master of science degree with a major in emistry must satisfy the general requirements of the Graduate hool. Of the 24 credits required, 12 (including two credits of minar) are in the major, six are in the minor and the remaining six edits are elective. The ability to read a foreign language is also quired. Research study options within the department include: rganic chemistry, inorganic chemistry, physical chemistry and ochemistry.

Doctor of Philosophy Degree

The general requirements of the Graduate School must be tisfied by all candidates for the Ph.D. degree with a major in emistry. The minimum credit requirements are:

otal credits	72
ormal course credits in major	12
dependent studies	12
ssertation	24
minar	4
ectives	20

The student must demonstrate a reading knowledge of one reign language as specified by the student's advisory committee.

The major and minor areas available for study in the chemsitry epartment are: chemical physics, inorganic, organic and physical emistry and biochemistry. The minor may be taken in another epartment, such as physics or mathematics. Each student's pro-am is subject to the approval of an advisory committee.

The graduate curriculum, with its research orientation, pro-des for an advanced study of theoretical concepts, the methods sed to establish these concepts and the means by which basic bservations are made. Students will be expected to make valid id relevant observations, to correlate the established facts and to educe warranted conclusions and generalizations.

CRIMINAL JUSTICE (CJ)

epartment Office: 100 Leifson Physics, 784-6164

he bachelor of arts in criminal justice degree offering is a profes-onal program. Students are educated for justice or justice-related ositions in both the public and private sectors, graduate study and w school.

Bachelor of Arts Degree in Criminal Justice

At least 15 credits of required criminal justice courses must be completed at the University of Nevada, Reno. A 2.5 or higher grade-point average is required for a transfer student to be accepted as a criminal justice major.

Major Interest Subject

	Credits
C J 110, 120, 211, 220, 231, 312, 320, 326, 410	27
CHS 474	3
CS 105	3
PSY 101	3
SOC 101, C J 366	6
SPCM 113	3

Minor in Criminal Justice

Students majoring in another field may minor in criminal justice by completing one of the following options:

Option: Corrections

	Credits
C J 110, 220, 231	9
C J 326, 328, 331, or 332	6
Criminal justice upper-division elective	3
	18

Option: Law

	Credits
C J 110, 120, 220	9
C J 320, 328, or 420	6
Criminal justice upper-division elective	3
	18

Option: Police

	Credits
C J 110, 211, 220	9
C J 312, 324, or 328	6
Criminal justice upper-division elective	3
	18

Upper-Division Courses: Junior or senior classification is required to register for criminal justice courses numbered 300-499.

ENGLISH (ENGL)

Department Office: 107 Frandsen Hall, 784-6689.

Bachelor of Arts Degree

Students may elect a program leading to the bachelor's degree with a major in English in one of the following options:

Literature Option

	Credits
ENGL 281, 295, 296, 421, 451, 465	18
Additional courses to be selected from ENGL 305-306, 307-308, 405-406, 407-408 (a total of no more than six credits), and other courses numbered above 400—excluding 414, 415, 416, 419, 436, 438, 439	18

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The English department accepts any minor approved by the College of Arts and Science.

Language and Linguistics Option

	Credits
ENGL 281, 404, 415 or 416, 410	9
ENGL 411 or 414, 413, 417, 451	12
Additional courses to be selected from ENGL 295, 296, 293, and any course numbered 400 or above	11

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. English accepts any minor approved by the College of Arts and Science.

Secondary Teaching Option

	Credits
ENGL 281, 295, 296, 321 or 422, 410, 411 or 413, 441,444, 445 or 446, 465	24
Additional courses to be selected from courses numbered above 400	12
	36

Requirements for Licensure In Secondary Education: (18 credits). See "Foundations for Secondary Teaching" in College of Education section. Students planning to teach in the secondary schools should normally be prepared in a second teaching subject. See "Secondary Teaching Field" under College of Education.

Second Teaching Subject (Minor)

	Credits
(Program for teachers selecting English as a minor teaching subject) ENGL 281, 295 or 296; 321, 422 or 437, 410	12
Two courses to be selected from the 400-level courses, one in both American literature and English literature	6
	18

Students who are considering an English major are strongly advised to take ENGL 281, 295 and 296 no later than the second semester after declaring the major.

Minors in English

Students majoring in another field may minor in English by completing one of the following options:

Literature Option

	Credits
Required: ENGL 295 or 296, 465	6
At least 12 credits from ENGL 421, 423, 424, 425, 426, 427, 430, 431, 435, 437, 441, 444, 445, 446, 451, 453, 458, 460, 461, 463, 464, 467, 469, 470, 471, 475, 479, 481, 483, 484, 485, 486, 487, 488, 489, 490, 491	12
	18

Language and Linguistics Option

	Credits
Required: ENGL 281, 410	6
ENGL 404, ENGL or ANTH 415, 416, 429, FLL 455 or GER 455	3
ENGL or ANTH 411, 414, or ANTH 405	3
ENGL 413, FLL 458, or GER 458	3
ENGL 417 or 451	3
	18

English as a Second Language Option

	Credits
ENGL 281, 410	6
ENGL or ANTH 411, 415, ANTH 405, or FLL 455	3
ENGL 436, 438, 439	9
	18

Dramatic Literature Option

	Credits
Required: ENGL 253, 295, 296	9
At least nine credits from ENGL 355, 356, 458, 460, 465, 470 and 423, 424, 469 and 489, when the subject matter is drama or dramatists	9
	18

Writing Option

	Credits
Required: ENGL 295, 296, 422	9
At least nine credits from ENGL 305, 306, 307, 308, 405, 406, 407, 408, 420, 435, 437, 479; JOUR 417, 418	9
	18

The Graduate Programs

The English department offers graduate programs leading to the master of arts for the teaching of English, the master of arts and the doctor of philosophy. For further information, write to the chairman of the department to obtain the bulletin, *Graduate Study in English.*

Master of Arts for the Teaching of English Degree

The master of arts for the teaching of English (MATE) degree is designed primarily to train teachers. The MATE degree encourages broad preparation in language and literature, with special attention to composition, literary appreciation, applied linguistics and other subjects needed by teachers in both primary and secondary school. Foreign language proficiency is not required for this degree. Students pursuing the MATE degree normally do not expect to continue their studies beyond the master's level.

Master of Arts Degree

The master of arts degree is intended for students who plan to continue work toward the doctor of philosophy degree, for potential community college teachers and for individuals who want to acquire overall background in the study of language and literature. The literature program includes extensive reading in English and American literature and language, as well as the further development of research skills. Evidence of proficiency in one foreign language, normally French or German, is required. Upon admission to the master's program, the student follows either Plan A (thesis program) or Plan B (nonthesis program).

The master of arts degree in English also offers a concentration in writing for those interested in teaching, writing and editing careers in writing. The program focuses on the craft of writing and offers a choice of course work in writing, composition theory and practice, literature and language. Thesis and nonthesis options are available.

Interdisciplinary Master of Arts Degree—TESL

In cooperation with the Department of Curriculum and Instruction in the College of Education, the department also participates in a program offering the interdisciplinary master of arts degree with a major in teaching English as a second language . For more information, refer to the program listing in the Interdisciplinary and Special Programs section of this catalog.

Doctor of Philosophy Degree

Students who have earned master of arts degrees in English may apply to the doctoral program upon evidence of an overall grade-point average of 3.0 or higher in all undergraduate and graduate work, a satisfactory score on the Graduate Record Examination verbal test and a writing sample indicating superior ability when discussing literature. Final acceptance depends upon successful performance on a departmentally-administered Ph.D. qualifying examination.

The Ph.D. degree represents an individualized course of study leading to comprehensive examinations and a dissertation on a specialized research project.

Students may focus their studies in one of two areas: English and American literature or composition and rhetoric. Students electing a specialty in literature will take course work and examinations in subjects from the English and American literary tradition. Students

ialty in composition and rhetoric will complete course
rical history, composition theory and practice, ad-
native writing, literature and language.
n to an acceptable dissertation, all candidates for the
lish must demonstrate competence in foreign lan-
wing proficiency in two languages (the equivalent of
college-level study in each), or high proficiency in a
age (the equivalent of three years of college-level

LANGUAGES AND LITERATURES (FLL)

Office: 205 Frandsen Humanities, 784-6055.

rtment of Foreign Languages and Literatures offers
tudy leading to the degree of bachelor of arts with
nch, German and Spanish language and literature,
f arts with a major in foreign language and literature.
students may take courses in Arabic, Basque, Chinese,
ek, Hebrew, Italian, Japanese, Latin, Persian, Portu-
ussian.
ed courses help fulfill requirements toward a liberal
and are also designed to assist prospective language
hey increase their skills. Students who complete the
gram also gain training for other careers requiring
ills.
he major program, students may emphasize the study
or literature, although they must include each study
eir coursework.
on, in study of the Spanish language, the student may
er a peninsular or Spanish-American emphasis.

Language Requirement

lege of Arts and Science and a few departments in other
ve a foreign language requirement. In the College of
ience, students may meet the requirement by complet-
No. 204 or 209 or equivalents in any language. Students
ce of a total skills sequence (listening comprehension,
eading, writing) or a sequence that stresses reading.
ful completion of two college semesters of Latin and two
esters of classical Greek also fulfills this requirement.

ary School Teacher Licensure

ts in the College of Arts and Science who are majoring in
nguage may be licensed to teach in junior high, middle
chools by taking a prescribed number of courses in the
Education, usually about 48 credits. The requirements
credits of supervised teaching in the public schools and
1 courses in teaching methods.
ching *major* consists of 30 credits in one language, all of
st be upper-division except for required courses in
d civilization. French majors must take FR 221, 301, 305-
wo credits), 313, 314, and FLL 455 or approved equiva-
man majors must take GER 221, 301, 305-306, 309 (two
11, and 455 or approved equivalents. Spanish majors
SPAN 221 or 222, 301, 305-306, 309 (two credits), 351, 352,
LL 455.
dent also must have a teaching minor. The department
commends a teaching minor in a second foreign language.
aching *minor* in a foreign language is also available to
who are working for a teaching major in another subject.
of 20 credits in the language of the minor with at least 10
ned for upper-division work. Most of the credit require-
prescribed.

Laboratory Facilities

The Learning Laboratory, located in Room 109 of the Getchell Library, has a language practice laboratory containing records and tapes of different languages. Students may use the materials to improve their command of the spoken language.

Bachelor of Arts Degree Requirements for a Field of Concentration in French, German or Spanish

For the bachelor of arts degree, a minimum of 48 credits are required in the field of concentration, distributed as follows:

Major Interest Subject

In the major interest subject (French, German, or Spanish), 30 credits are required, all of which must be upper-division except for required courses in culture and civilization. Twelve of the 30 required credits must be completed on the Reno campus.

French majors must take FR 221, 305-306, 3
314. German majors must take G
311. Spanish majors m
credits), 351, 3

A

ecting a specialty in composition and rhetoric will complete course ork in rhetorical history, composition theory and practice, adnced imaginative writing, literature and language.

In addition to an acceptable dissertation, all candidates for the .D. in English must demonstrate competence in foreign lanage by showing proficiency in two languages (the equivalent of o years of college-level study in each), or high proficiency in a gle language (the equivalent of three years of college-level udy).

OREIGN LANGUAGES AND LITERATURES (FLL)

epartment Office: 205 Frandsen Humanities, 784-6055.

The Department of Foreign Languages and Literatures offers urses of study leading to the degree of bachelor of arts with ajors in French, German and Spanish language and literature, d master of arts with a major in foreign language and literature. addition, students may take courses in Arabic, Basque, Chinese, assical Greek, Hebrew, Italian, Japanese, Latin, Persian, Portuiese and Russian.

The offered courses help fulfill requirements toward a liberal ts degree, and are also designed to assist prospective language achers as they increase their skills. Students who complete the egree program also gain training for other careers requiring nguage skills.

Within the major program, students may emphasize the study language or literature, although they must include each study otion in their coursework.

In addition, in study of the Spanish language, the student may hoose either a peninsular or Spanish-American emphasis.

oreign Language Requirement

The College of Arts and Science and a few departments in other lleges have a foreign language requirement. In the College of rts and Science, students may meet the requirement by completg course No. 204 or 209 or equivalents in any language. Students ave a choice of a total skills sequence (listening comprehension, peaking, reading, writing) or a sequence that stresses reading.

Successful completion of two college semesters of Latin and two llege semesters of classical Greek also fulfills this requirement.

econdary School Teacher Licensure

Students in the College of Arts and Science who are majoring in foreign language may be licensed to teach in junior high, middle nd high schools by taking a prescribed number of courses in the ollege of Education, usually about 48 credits. The requirements nclude 12 credits of supervised teaching in the public schools and pecialized courses in teaching methods.

The teaching *major* consists of 30 credits in one language, all of hich must be upper-division except for required courses in ulture and civilization. French majors must take FR 221, 301, 305-06, 309 (two credits), 313, 314, and FLL 455 or approved equivaents. German majors must take GER 221, 301, 305-306, 309 (two redits), 311, and 455 or approved equivalents. Spanish majors nust take SPAN 221 or 222, 301, 305-306, 309 (two credits), 351, 352, 10, and FLL 455.

The student also must have a teaching minor. The department rongly recommends a teaching minor in a second foreign language.

The teaching *minor* in a foreign language is also available to tudents who are working for a teaching major in another subject. consists of 20 credits in the language of the minor with at least 10 redits earned for upper-division work. Most of the credit requirements are prescribed.

Laboratory Facilities

The Learning Laboratory, located in Room 109 of the Getchell Library, has a language practice laboratory containing records and tapes of different languages. Students may use the materials to improve their command of the spoken language.

Bachelor of Arts Degree Requirements for a Field of Concentration in French, German or Spanish

For the bachelor of arts degree, a minimum of 48 credits are required in the field of concentration, distributed as follows:

Major Interest Subject

In the major interest subject (French, German, or Spanish), 30 credits are required, all of which must be upper-division except for required courses in culture and civilization. Twelve of the 30 required credits must be completed on the Reno campus.

French majors must take FR 221, 305-306, 309 (two credits), and 313, 314. German majors must take GER 221, 305-306, 309 (two credits), and 311. Spanish majors must take SPAN 221 or 222, 305-306, 309 (two credits), 351, 352, 410.

Additional Required courses: In addition to credits for the major, students must complete 18-21 credits in a minor. Foreign languages and literatures accepts any minor approved by the College of Arts and Science.

Minor in Foreign Languages and Literatures (Basque, French, German, Italian, Spanish)

Students majoring in foreign languages and literatures and other fields may minor in foreign languages and literatures by completing one of the following:

For a minor, 20 credits are required of which 14 must be numbered above 300. Six of the 20 required credits must be completed on the Reno campus.

French minor: 204, 221, 305, 306, 309 (two credits) and two other three-credit French courses numbered above 300. (FR 313 is recommended.) German minor: 204, 221, 305, 306, 309 (two credits) and two other three-credit German courses numbered above 300. (GER 311 is recommended.) Spanish minor: 204, 221 or 222, 305, 306, 309 (two credits) and two other three-credit Spanish courses numbered above 300.

For a minor in Basque and Italian studies, see the Interdisciplinary and Special Programs section of this catalog.

For secondary school teaching candidates: Coursework should include all the courses in education required by the College of Education, usually 20 credits. The teaching major must include an approved course in linguistics. A teaching minor in a second foreign language is strongly recommended, consisting of 20 to 26 credits (at least 10 credits at the upper-division level), and must include courses No. 305-306.

Master of Arts Degree

The department of foreign languages and literatures offers a program of graduate study leading to the degree of master of arts with a major in foreign languages and literature. Candidates for the advanced degree may enter specialized study in French, German or Spanish.

The student must meet the general university requirements for admission to graduate standing. In addition, each student must have acquired a degree of proficiency in a foreign language approved by the department, and generally must have a grade-point average no lower than 3.0 on a scale of 4, in the major field of concentration as an undergraduate.

Plan A requires 30 graduate credits. At least 18 credits, including six thesis credits, must be in 700-level courses. If a minor is approved, at least six graduate credits are required in the minor area.

Plan B requires 32 graduate credits. At least 15 credits must be in 700-level courses. No thesis is required. If a minor is approved, a minimum of eight graduate credits are required in the minor area.

GEOGRAPHY (GEOG)

Department Office: 225 Mackay Science, 784-6995.

Bachelor of Science in Geography

The department offers courses leading to the degree of bachelor of science in geography.

The geography student completes a core of 15 credits and then consults a departmental adviser to develop an area of concentration suited to his or her needs. Study specializations include: physical geography (including environmental impact analysis), cultural and international studies, urban and regional planning (including the analysis and management of growth), cartography and computer mapping, geographic information systems (GIS) and climatology.

Students may obtain the bachelor of science degree in geography by using one of two options:

Option 1—complete a minimum of 36 credits in geography.

Option 2—follow an expanded field of concentration.

Students are advised to meet with their assigned departmental adviser every semester.

Major Interest Subject

	Credits
GEOG 103	3
GEOG 106	3
GEOG 212	4
GEOG 416	3
GEOG 418	2
	15
Additional geography courses are determined in conjunction with an adviser. Nine credits will be from outside the geography department	30
	45

OPTION 1—Standard Field of Concentration

OPTION 2—Expanded Field of Concentration

Natural sciences and mathematics

Students will not be allowed to use Option 2 without prior approval of the department committee.

	Credits
GEOG 103	3
GEOG 212	4
Additional required courses	18
Electives	12
	37

Social Science

	Credits
GEOG 106	3
GEOG 418	2
Electives	13
	18

Cultural and area studies

	Credits
Electives	9
TOTAL	64

Contact the geography department for specific instructions and a list of courses for Option 2.

Minor in Geography

Students majoring in another field may minor in geography by completing the following:

Minor Interest Subject

	Credits
GEOG 103 (laboratory required)	3
GEOG 106	3
An additional 12 credits, nine of which must be upper division, are determined in conjunction with a departmental adviser	12
	18

Land Use Planning Policy

In cooperation with several other departments, the geography department participates in the interdisciplinary master of science degree with a major in land use planning policy. For further information, refer to the Interdisciplinary and Special Programs section of this catalog.

HISTORY (HIST)

Department Office: 243 Mack Social Science, 784-6855

The department of history offers courses leading to the degrees of bachelor of arts, master of arts and doctor of philosophy.

Bachelor of Arts Degree

Major Interest Subject

	Credits
HIST 101-102	6
HIST 105-106 (three credits each)	6
Additional credits in history courses numbered 200 and above to be selected in consultation with adviser. From these credits, a total of at least six credits must be selected from the following non-American and non-European courses: HIST 343, 344, 345, 346, 351, 352, 353, 361, 362, 371, 372, 447, 448, 449. A total of 30 credits exclusive of HIST 101 and 102 are required	24
	36

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The history department accepts any minor approved by the College of Arts and Science.

Minor in History

Students majoring in another field may minor in history by completing one of the following options:

Minor Interest Subject (General History)

	Credits
To be chosen from HIST 101, 102, 105, 106	6
From 300-level or above American history courses	6
From 300-level or above European history courses	6
From 300-level or above Third World history courses	3
	21

Minor Interest Subject (American History)

	Credits
HIST 101 and 102	6
plus 12 additional credits in American history courses numbered 200 and above (nine credits of which must be 300 and above)	12
	18

Minor Interest Subject (European History)

	Credits
HIST 105 and 106	6
plus 12 additional credits in European history courses numbered 200 and above (nine of which must be 300 and above)	12
	18

Minor Interest Subject (Third World History)

	Credits
....	3
'per-division credits from African, Latin American, tern, Middle Eastern or ancient history courses	15
	18

r of Arts Degree

nts seeking the master of arts degree in history should Graduate School section of this catalog and obtain from the ent the *Graduate Study in History* brochure. The depart- uires that applicants hold a baccalaureate degree with a 24-semester-credit minor) in history, have a cumulative aduate grade-point average of 2.75 and achieve a satisfac- re on the Graduate Record Examination, including the ubject exam.

are two optional programs for the Master of Arts degree. A requires a written comprehensive examination (after on of 20 credits of graduate work), reading knowledge of gn language, 24 semester credits, a six-credit thesis and a examination. Option B requires a written comprehensive tion (in the semester in which 30 credits of graduate study pleted), reading knowledge of one foreign language, 32 credit and a final oral examination.

r of Philosophy Degree

ents wishing to pursue a Ph.D. degree with a major in hould read the Graduate School section of this catalog and om the department a *Graduate Study in History* brochure. artment requires that applicants have a master of arts a cumulative grade-point average in all undergraduate duate work of 3.0 or higher and a satisfactory score on the e Record Examination.

Ph.D. degree program requires: an oral qualifying exami- 4 graduate credits beyond the master's degree (of which at must be in approved courses), a current working knowl- one foreign language, written and oral comprehensive tions in three fields, a dissertation and a final oral exami-

cs for special research and the required dissertation are to study of: the history of Nevada, the western United r American studies. Exceptions to this emphasis may be ith departmental approval.

nore information about graduate programs in the history nent, contact the graduate adviser of the department.

RY SCIENCE (LSC)

r of Libraries, 285 Getchell Library, 784-6533

ne time of this catalog's printing, six library science courses ffered at the university. Refer to the Course Offerings of the catalog for more details.

H EMATICS (MATH)

ment Office: 601 Business Building, 784-6773

department offers courses leading to the degrees of bach- science or bachelor of arts with a major in mathematics, of science with a major in mathematics and master of arts for hing of mathematics.

Bachelor of Arts and Bachelor of Science Degrees

Required courses

	Credits
MATH 181,[2] 182, 281, 285, 311, 330, 331, 341, 352	30
Selected mathematics courses numbered above 300	9
	39

Students who are preparing for secondary school teaching may substitute two of the three courses: MATH 373, 474, 475 for MATH 285 and 311.

Additional Required Courses: The total number of credits in the field of concentration must be at least 57. In addition to credits for the major, students must complete 18-21 credits in a minor or selected program of study chosen with the adviser and approved by the department chairman. This program usually consists of courses from other departments that support the student's mathematical interest or that comprise a substantial program in a single area. The mathematics department accepts any minor approved by the College of Arts and Science.

Minor in Mathematics

Students majoring in another field may minor in mathematics by completing 21 departmental credits in courses at the 200 level or above. Mathematics minors are required to earn nine credits at upper-division (300-400) level.

Master of Science Degree

The department of mathematics offers a graduate program leading to the master of science degree.

Master of Arts for the Teaching of Mathematics Degree

The department of mathematics offers a graduate program leading to the master of arts for the teaching of mathematics (MATM) degree. The MATM program is designed to expand the mathematical and educational expertise of practicing secondary teachers.

MILITARY SCIENCE (MIL)

Department Office: Hartman Hall, 784-6751

The Army Reserve Officers Training Corps (ROTC) is the only military commissioning program of any armed service within the University and Community College System of Nevada. ROTC is available at university request and represents a contractual agreement between the army and the university. The ROTC program in the military science department is administered by career army officers, nominated by the Department of the Army and subject to approval by the university president.

Major interest subjects required for commissioning

	Credits
Basic course requirement	
Option I—MIL 101, 102, 201, 205	8
Option II—MIL 204	2
Option III—Students with three or four years of JROTC or 12 or more months continuous federal service may bypass basic courses	0
Advance course requirement	
MIL 301, 302, 303, 401, 402	14

Additional elective hours for credit
MIL 203, 304, RPED 181 10-14

20-34

Professional Military Education (PME) Requirements

Contracted ROTC cadets are required to complete one course from each of five designated fields of studies: written communications, military history, human behavior, computer literacy and math reasoning. The following classes satisfy the professional military education requiremments:

Written Communications:
B CH 407, B CH 408, CHEM 387, ENGL 281, ENGL 305-306, ENGL 307-308, ENGL 321, ENGL 322, ENGL 404, GEOG 305, GEOG 314, JOUR 311, JOUR 417, JOUR 418, MGRS 404, PHIL 114, PHIL 200, PHIL 326

Military History:
HIST 202, HIST 416, HIST 423-424, HIST 464, P SC 231, P SC 323, P SC 437

Human Behavior:
Completion of any general psychology, sociology or anthropology course will meet the study field requirement.

Computer Literacy:
AGEC 213, BIOL 325, CE 243, CIS 201-202, CS 183

Math Reasoning:
MATH 101 (or higher-level course), EC 261-262

In addition to the above-mentioned requirements, scholarship cadets are required to complete one semester of a foreign language.

Program Objective

The overall objective of the ROTC program is to develop in the student/cadet—through both classroom theory and practical application—the necessary traits, knowledge, proficiency and experience for a commission in the United States Army. The candidate's course of study includes a broad educational base, including academic subjects of particular value in both civilian and military pursuits. Student/cadets develop expertise in the following subject areas:

a.) general knowledge of the historical development of the United States Army and its role in support of national objectives

b.) working knowledge of the general organizational structure and of how the various components of an organization operate as a team in the fulfillment of overall objectives

c.) strong understanding of personal integrity, honor and individual responsibility

d.) knowledge of the human relationships involved in an organization and an understanding of the responsibilities of military service assignments

e.) the ability to communicate effectively, both orally and in writing

f.) sufficient knowledge of military life to ensure a smooth transition from the normal civilian environment.

The curriculum is designed to prepare the student for either career service or reserve service.

Program Description

The military science department offers an academically challenging and practical curriculum which can be completed in eight semesters or a compressed program of either four or six semesters. The military science curriculum is intended to supplement the university's baccalaureate or postgraduate studies. The army is prepared to award a commission to any deserving student based on ROTC achievement upon graduation.

The scope of the military science curriculum is oriented toward developing the best all-around student who demonstrates leadership and managerial skill, reacts well under pressure and understands general military subjects. Student/cadets attend classroom conferences and a leadership laboratory program.

The leadership laboratory program provides academic credit and is an essential gauge in evaluating the student as a prospective second lieutenant. In the freshman and sophomore years, the leadership laboratory is an introduction to the skills required in the army. Practical exercise and hands-on training are emphasized. Subject areas include, but are not limited to: map reading, unarmed defense, weapons familiarization and firing and familiarization with army tactical vehicles and army aircraft.

Junior year leadership laboratory involves individual leadership training, parade and combat drill and field exercises. During the senior year, students perform actual military duties within the military science department.

Basic Program

Freshmen (MIL 101-102): Introduction to the organization, mission, history and functions of each of the armed services, the Reserves, National Guard and the ROTC; familiarization with the combat and support role of squad-size units; knowledge of basic individual weaponry and an understanding of the objectives and instruments of national power, strategy and security.

Sophomores (MIL 201-205): Knowledge of the principles of small unit leadership with an emphasis on map reading, tactics and management at the squad level.

Advanced Program

Juniors or selected graduate students (MIL 301-302): Development of individual leqdership qualities and capabilities through a study of effective leadership traits; examples of instruction methods; development of an appreciation of combat at platoon and company levels, techniques of command, control and management at all levels; attendance at any army-paid, six-week, advanced summer camp (usually between the student's junior and senior years) immediately after spring semester .

Seniors or selected graduate students (MIL 401-402): Seminar on the organization, mission, functions and capabilities of battalion and larger units and a discussion of the interrelationships of the combined arms team; study of the numerous administrative and logistical problems that confront leaders at platoon and company level; understanding of the U.S. role as a world power, including military alliances and global commitments; an introduction to military law.

The advanced course is open to undergraduate and graduate students with at least four remaining semesters as full-time students. Students who successfully complete the basic program or the six-week ROTC basic summer camp, may apply for admission into the advanced program.

The basic summer camp is normally scheduled after the student's sophomore year or during the summer preceding the student's final four semesters at the university. The basic summer camp substitutes for the basic program and is geared for students who join the ROTC program late and wish to finish the curriculum in four semesters (two years).

As part of the advanced program, the student enters into a contract with the army whereby the individual agrees, contingent upon continued university enrollment, to complete the ROTC program (including advanced summer camp) and to accept a commission, if offered, upon termination of the degree program. To be eligible for commissioning, a student must earn at least a baccalaureate degree.

To gain acceptance into the advanced program, a student must:

1. Be a citizen of the United States and be regularly enrolled as a full-time student at the university.

2. Be able to complete the course, graduate and be commissioned prior to the 30th birthday.
3. Have successfully completed such survey and screening tests as may be prescribed.
4. Have successfully passed a prescribed physical examination.
5. Be selected by the professor of military science.
6. Have executed a written contract with the United States Government.

Volunteer Extracurricular Activities

Rangers—A highly competitive organization that provides additional military training for students who are preparing to become Combat Arms Officers. The Wolf Pack Ranger Challenge Team competes annually against teams from 58 other colleges and universities in the western United States.

Sierra Guard—The personal honor guard of the governor of Nevada. The Sierra Guard is highly regarded for its professional competence and esprit de corps. The Sierra Guard presents the national and state colors at all Wolf Pack home football games, as well as other formal university functions. Additionally, the Sierra Guard is the formal escort for the Fremont Cannon and provides the cannon firing detachment for the ROTC department.

Wolf Pack Rifle and Pistol Teams—Precision shooting teams that compete against local rifle and pistol clubs and other colleges and universities in the western United States.

Career Opportunities

Advanced program students who demonstrate outstanding academic, military and leadership proficiency may be selected as distinguished military students (DMS) at the beginning of their senior year. As a distinguished military student, honorees may apply for a commission in the regular Army. A commission in the U.S. Army gives the student the same status and benefits as a graduate from the United States Military Academy.

The student is not required to make the army a career, but must agree to serve a minimum of three years in the military. The vast majority of career officers and numerous Army generals were trained at one of the nearly 300 colleges and universities in the United States that offer ROTC.

Active Duty and Reserve Obligations

Students commissioned from the ROTC program normally serve on active duty in the Army as reserve officers for a period of up to three years upon graduation. After completion of active duty, they are assigned to reserve units for an additional five years, if a vacancy exists in a unit within a reasonable distance from their homes, or they return to active Army duty, upon request.

Reserve Forces Duty

Students commissioned from the ROTC program may also request to serve with the U.S. Army Reserve or the Army National Guard. The program consists of three to six months active duty and an eight-year obligation with the reserve forces, either in units or in the individual ready reserve.

Financial Assistance

In the basic program, students receive no pay unless they have ROTC scholarships. Students awarded two-, three- and four-year ROTC scholarships by the Department of the Army receive $100 per month subsistence pay while enrolled in school (10 months per year maximum), as well as payment for books, tuition and fees.

All other students formally enrolled in the advanced course are paid subsistence at a rate of $100 per month while enrolled in school, not to exceed a total of 20 months. Students are paid one-half of the base pay of a second lieutenant while attending the six-week summer camp training plus travel pay to and from summer camp. The military science department has a limited number of in-state and out-of-state fee waivers available each semester for students requiring financial assistance.

Additionally, the Nevada National Guard pays one-half of the credit costs for students who elect to serve simultaneously in the Nevada National Guard and in advanced ROTC. This option can be worth more than $10,000 for veterans and students with junior ROTC experience.

Textbooks, Uniforms and Equipment

The U. S. government provides students in the basic program with required textbooks, uniform and equipment.

Students in the advanced program, in addition to receiving the $100 monthly stipend, texts and instructional equipment at government expense, are provided with an officer-type uniform. ROTC students may purchase the uniform upon commissioning.

MUSIC (MUS)

Department Office: 133 Church Fine Arts Complex, 784-6145

The department offers courses leading to the degrees of bachelor of arts with a major in music, bachelor of music with majors in applied music or music education and master of arts or master of music.

Specialized courses in music theory, music history, applied music and methods of music teaching are offered for cultural benefit and for professional preparation of performing musicians and/or music teachers.

All university students may participate in one of the performance organizations. These groups include the university band, concert choir, symphonic choir, opera theater, university-community symphony and chamber music ensembles. Solo performance is available in class recitals or in connection with the performance organizations.

Bachelor of Arts with Field of Concentration in Music

For the bachelor of arts degree, a minimum of 38 credits is required, distributed as follows:

Major Interest Subject

	Credits
MUS 100 (satisfactory completion of six semesters)	0
Applied individual instruction in a single area of study	6
MUS 201-203	6
Music theory—MUS 207-208, 209-210, 301-302, 307-308	16
Ensemble	6
To be chosen from theory or history and literature courses numbered 300 or above	4
	38

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The music department accepts any minor approved by the College of Arts and Science.

Bachelor of Music

The bachelor of music degree with a major in music education is a professional degree that meets state of Nevada music licensure requirements.

Major Interest Subject

	Credits
MUS 100 (satisfactory completion of eight semesters)	0
Applied major instrument or voice (a senior recital of 25 minutes is required)	8

Piano competency (Piano Proficiency Examination must be passed)	
MUS 103, 104, 113, 123, 124, 323, 352, 354 (music methods)	18
MUS 201, 202, 203; MUS 310; MUS 408	15
Music theory—MUS 207-208, 209-210, 301-302, 307-308	16
Ensemble	7
MUS 322	2
MUS 499b	0
	66

The requirement of a minor in an area outside the music department is waived.

Professional Education: requirements for licensure as Music Special K-12 in Nevada	34-39
	99

The bachelor of music degree with a major in applied music is available only to students approved by the entire faculty. Degree candidates must show professional promise in their applied performance areas.

Major Interest Subject

	Credits
MUS 100 (satisfactory completion of eight semesters)	0
Applied major, four[3] credits per semester	
100 level (entrance audition required)	16
300 level (upper-division audition required)	16
Minor instrument: one credit per semester (non-keyboard majors enroll in piano until the piano proficiency examination is passed; remaining credits are taken in a single applied area)	2
MUS 201, 202, 203, 322	11
Music theory—MUS 207-208, 209-210, 301-302, 307-308	16
MUS 310, 408	6
Ensembles: major eight credits, secondary five credits	13
Literature electives to include four credits in MUS 418 for vocal majors, and four credits in MUS 483 for piano majors	4
MUS 499a	0
	84

The requirement of a minor in an area outside the music department is waived.

Minor in Music

Students with majors in another field may minor in music by completing one of the following:

Minor Interest Subject

	Credits
MUS 100 (satisfactory completion of three semesters)	0
MUS 201, 202 or 203	3
MUS 207-208	6
Major ensembles	3
Instrumental or vocal instruction	3
Electives numbered 300 or above	5
	20

Music Industry Option

	Credits
MUS 100 (satisfactory completion of three semesters)	3
MUS 181-182	2
MUS 207-208	6
MUS 222-223	4
MUS 317, 319, 325 or 430	2
MUS 485 (audio production or music management)	3
MUS 495 (music literature/history)	3
	20

Applied Music

All university students may take applied music, although music majors and minors are given first priority for available space. A fee of $125 per half-hour lesson is required for all applied individual instruction. Students taking applied music must also enroll in a major ensemble: symphonic choir, concert choir, orchestra, marching and concert band, or symphonic band and wind ensemble. A maximum of 13 credits in ensembles is allowed toward graduation.

Students receive a half-hour individual applied lesson for one credit and an hour lesson for two, three, or four credits. A jury examination is required at the end of the semester for all undergraduate and graduate students enrolled in applied music. A minimum of one hour of daily preparation is required for each credit.

A maximum of eight credits of applied instruction at each level may be applied to the bachelor of arts degree. A maximum of four credits of applied instruction at the 700 level may apply toward a graduate degree. All students entering the bachelor of music applied program must satisfactorily complete an entrance audition; an upper-division audition must be completed after 16 lower-division credits. Any student seeking upper-division or graduate status in applied music must satisfactorily complete an audition (the MUS 749 course does not require an audition.)

Ensemble Requirements

All music majors and minors taking private lessons must coregister for an appropriate major ensemble until they have completed the required number of major ensemble credits for their degree. Majors and minors who have **completed** the required major ensemble credits may subsequently coregister for **either** a major or minor ensemble as long as they take private lessons. In addition, all nonmajors must coregister for **ensembles** as long as they are taking private lessons.

Students may count only one major ensemble credit per semester toward the ensemble requirement. Enrollment in all ensembles is subject to the instructor's approval. Music education instrumental majors are required to participate in marching band for two semesters, but are not required to enroll in any of the university ensembles during the semester in which they are student teaching.

Appropriate Major Ensembles for Music Majors:

a. Voice students are required to be in Symphonic Choir or Concert Choir.

b. String students are required to be in University Orchestra.

c. Wind and percussion students are required to be in a major instrumental ensemble.

d. Keyboard and guitar students are required to be in a major ensemble. Keyboard students may substitute up to 50 percent (four semesters) of their major ensemble requirement by enrolling in MUS 229, 429, 629.

Masterclass Attendance Requirements

All undergraduate music majors and minors must fulfill masterclass/concert attendance requirement by completing MUS 100, as indicated below:

a. Bachelor of Music majors: minimum of eight "satisfactory" semesters.

b. Bachelor of Arts music majors: minimum of six "satisfactory" semesters.

c. Music minors: minimum of three "satisfactory" semesters.

Satisfactory completion of MUS 100 includes attendance at a minimum of eight departmentally approved concerts, three appropriate masterclasses and three noon recitals each semester. Contact the music department for procedures of verifying attendance.

Foreign Language Requirements for Music Majors

a. Bachelor of arts degree candidates must complete the regular college requirement.

b. For bachelor of music degree candidates: music education majors are exempt from the foreign language requirement. Applied music majors (excluding those in vocal performance) are exempt from the foreign language requirement.

udents enrolled in the applied music vocal area must satisfy artmental foreign language requirement by completing ei- two years in a single foreign language, one year each of two ent foreign languages, or one semester each of four different gn languages.

artmental Requirements

andidates for all bachelor's degrees in music should consult urrent music department *Student/Faculty Handbook* for infor- on on any additional departmental requirements.

ster of Arts and Master of Music Degrees

he master of arts degree (Plan A) requires a thesis and a num of 31 credits, distributed as follows:

Major Interest Subject	Credits
red core: MUS 709, 730, 731-732	12
s and related course work	10
d studies or minor	
o credits of an ensemble are required)	9
	31

he master of music degree in performance (Plan A) is available udents by audition. Recital performances will be auditioned e the department faculty.

Major Interest Subject	Credits
red core: MUS 709, 730, 731-732	12
of principal interest: Applied study and recital performances	10
d studies or minor	
o credits of an ensemble are required)	9
	31

he master of music degree in music education (Plan B) re- s a professional paper and is offered for candidates who are e music teachers.

Major Interest Subject	Credits
red core: MUS 709, 730, 731-732	12
education core: MUS 740, 741 and professional paper	9
d studies or minor	
o credits of an ensemble are required)	12
	33

andidates for all master's degrees in music should consult the nt music department *Student/Faculty Handbook* for informa- concerning auditions and placement, as well as proficiency inations. Candidates must complete all Graduate School irements for the master's degree.

LOSOPHY (PHIL)

artment Office: 112 Frandsen Hall, 784-6846

department offers courses leading to the degrees of bachelor of and master of arts.

helor of Arts Degree

hilosophy as a field of concentration is designed for those nts interested in acquiring a comprehensive understanding e various areas of philosophy, either for their cultural enrich- or as a basis for advanced study and teaching of philosophy. n appropriate major for those planning to enter such fields as or theology. The department also offers course sequences ed to other academic majors.

Major Interest Subject	Credits
PHIL 211, 213 and either PHIL 114 or 326 (required)	9
At least six credits in each of the following three groups with at least three credits at the 400 level in each group:	
Group A—History of Philosophy: PHIL 212, 314, 315, 316, 410, 411, 413, 414, 415	6
Group B—Metaphysics and Epistemology: PHIL 130, 224, 403, 404, 405, 406	6
Group C—Ethics and Value Theory: PHIL 125, 202, 203, 207, 323, 325, 401, 402, 407	6
Additional credits in philosophy	9
	36

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The philosophy department accepts any minor approved by the College of Arts and Science.

Minor in Philosophy

Students majoring in another field may minor in philosophy by completing the following:

Minor Interest Subject	Credits
PHIL 211 and 213	6
At least six credits from Group A and three credits from Group B	
Group A—	
PHIL 314, 315, 316, 403, 404, 405, 406, 410, 411, 413, 414, 415	6
Group B—PHIL 323, 325, 401, 402, 407	3
Additional credits in philosophy	3
	18

Master of Arts Degree

The candidate for the master of arts degree must complete a minimum of 18 credits in 700-level philosophy courses. A total of 30 graduate credits is required for the Plan A thesis program. Six to nine of these credits must be taken outside the department in an approved subject area.

A total of 33 graduate credits is required for the Plan B nonthesis program. Nine to 12 of these credits must be taken outside the department in an approved subject area. While not required, a reading knowledge in at least one foreign language is highly recommended, especially if the candidate wishes to pursue further graduate studies beyond the master's level.

Candidates for the master of arts degree are required to pass a comprehensive written examination.

PHYSICS (PHYS)

Department Office: 225 Leifson Physics, 784-6792

The department offers courses leading to the degrees of bachelor of science, master of science and doctor of philosophy.

Bachelor of Science Degree

The bachelor of science degree provides a foundation in basic science that qualifies the recipient for technical positions in industry, government laboratories, or for graduate studies in physics, as well as a variety of related fields.

Major Interest Subject	Credits
PHYS 201, 202, 203, 204, 205, 206	12
PHYS 351, 352	6
PHYS 473-474 or 421-422	6
Credits at the 300-level or above, including a minimum of three laboratory credits	6
	30

Additional Required Courses (23 credits): CHEM 201, 202 (eight credits) recommended or CHEM 101, 102 (eight credits). MATH 181, 182, 281, 285 (15 credits). Either German or Russian is recommended to fulfill the foreign language requirement.

The above requirements are considered minimum. A student who wishes to enter the field of physics is advised to take PHYS 421-422, 425-426 and 473-474, as well as PHYS 361-362, 363-364, 355 and 466.

Bachelor of Science Degrees in Engineering Physics and Geophysics

A bachelor of science degree in engineering physics is offered by the College of Engineering (see the college's Electrical Engineering section in this catalog). This program is for students who desire a strong emphasis on technical and applied courses. The bachelor of science degree in geophysics, offered by the School of Mines, also includes a good background in physics (see the school's Geological Sciences section in this catalog). Either degree can be used as preparation for graduate work in physics.

Minor in Physics

Students majoring in another field may minor in physics by completing the following:

Minor Interest Subject

	Credits
PHYS 201, 202, 203	9
(By petition to the department chairman, PHYS 151-152 may be substituted for PHYS 201, 202)	
PHYS 351	3
Six credits in courses numbered 300 or above, including at least one credit of laboratory	6
	18

Advanced Degrees

Consult regulations of the Graduate School for general admission requirements. Requirements for admission to graduate standing in physics are:

1. A bachelor's degree from an institution offering an approved major in physics (as defined by the American Institute of Physics).
2. Completion of regular junior-senior courses in mechanics, optics, electricity and magnetism, heat and thermodynamics and modern physics.
3. An average grade of 3.0 or better in all physics and mathematics courses, and an overall average of 3.0 or better in all undergraduate courses.

Applicants whose records indicate a deficiency in any of the requirements listed above may be admitted on a probationary basis and may be required to take certain undergraduate courses (which do not carry graduate credit). All new graduate students are required to take a preliminary examination in general physics during the first year of graduate study. Graduate students who hold half-time assistantships are not permitted to enroll for more than 10 credits in graduate courses in any one semester.

The general requirements of the Graduate School must be followed by each student in physics working for an advanced degree.

Master of Science Degrees

Master of science degrees are offered with majors in physics or atmospheric physics. The physics courses should include: PHYS 701, 702, 712, 721-722, 790. The atmospheric physics courses should include: PHYS 701, 704, 740, 741, 742, 743, 749 and 790. Additional credits may be in a minor, usually mathematics. A student who needs laboratory experience is advised to register for experimental work. The program of courses is planned in consultation with a graduate adviser and is subject to approval by the student's advisory committee.

To be admitted to candidacy, the student must complete 10 graduate credits with a grade of B or better and achieve a satisfactory score on the Graduate Record Examination, including the advanced physics portion.

Subject to the approval of the committee, a student may elect a master's degree program with or without thesis. The requirements for the master of science degree with thesis include the completion of 30 semester credits, of which six credits must be in thesis research. The thesis should demonstrate the student's ability to carry out independent research. For the master's program without thesis, 32 credits are required, with no more than six credits in special problems courses. Students also must pass a written comprehensive examination.

All master of science candidates must pass a final oral examination administered by the student's advisory committee. The emphasis in the examination will be on the thesis when one is presented; otherwise, it will be on mastery of graduate-level course work.

Doctor of Philosophy Degree

A Ph.D. program is offered with a major in physics. In addition, a specialization in atmospheric science is offered. The purpose of the formal course work is twofold: to give the student a broad background in classical and modern physics, and to prepare students for the research work that will form the subject of the dissertation.

Before becoming a candidate for the doctor of philosophy degree, a student ordinarily is expected to earn the master of science degree. The following courses or their equivalents must be satisfactorily completed for the doctor's degree in physics:

	Credits
PHYS 701	3
PHYS 702	3
PHYS 712	3
PHYS 721-722	6
PHYS 732	3
PHYS 761	3
PHYS 795	0
At least three credits of PHYS 790	3
Credits selected from other 700-level physics and/or mathematics courses	15
Approved electives	9
	48

For the specialization in atmospheric science, PHYS 706, 740, 745, 748 may be substituted for 721, 722, 732, 761. If there is a substitution for 721-722, a modern physics competence equivalent to PHYS 421-422 is necessary. Before being accepted as a candidate, the student must pass a comprehensive examination on graduate-level material in physics.

POLITICAL SCIENCE (PSC)

Department Office: 138 Mack Social Science, 784-4601

The department offers courses leading to the degrees of bachelor of arts, master of arts, master of public administration and doctor of philosophy. The department also administers the major in international affairs.

Bachelor of Arts Degree

Students must meet the following requirements to earn the bachelor of arts degree:

Major Interest Subject (30 credits)

Political science majors must complete P SC 101 or 103 and at least one course in each of the following five fields: (1) American

government, (2) public administration and public policy, (3) political theory (must be 300/400 level), (4) comparative government and (5) international relations.

Eighteen of the 30 credits must be in courses numbered above 300. Only six credits of internship courses may be used to fulfill the 30-credit major requirement.

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The political science department accepts any minor approved by the College of Arts and Science.

History and social theory is an approved area of study for political science majors. See the Interdisciplinary and Special Programs section of this catalog for a description of the program.

Minor in Political Science

Students majoring in another field may minor in political science by completing one of the following:

Minor Interest Subject (General)

	Credits
P SC 101 or 103	3
Three courses from the following: 104, 210, 211, 231 and 341	9
plus three additional upper-division courses	9
	21

Minor Interest Subject (Foreign Affairs)

	Credits
P SC 101 or 103, plus 211 and 231	9
plus four upper-division courses in the study of comparative politics (410-418, 438, 444) and of international relations (336, 410, 430-439), including at least one course from each area	12
	21

Minor Interest Subject (Public Administration and Public Policy)

	Credits
P SC 101 or 103, plus 210 and 341	9
plus four additional courses selected from the following: 354, 400, 406, 421, 441, 442, 443, 444, 445, 446, 447, 450, 456, 457, 458	12
	21

Minor Interest Subject (American Government)

	Credits
P SC 103, 304, 305, 309	12
plus three additional courses selected from the following: 308, 353, 354, 400, 404, 406, 407, 409, 447, 451 and 452	9
	21

Congressional Intern Program

A program in which the student spends one semester in a U.S. senator's office in Washington, D.C. For details and application forms, contact the chairman of the political science department.

Master of Arts Degree

The department offers a graduate program leading to the degree of master of arts. The field of study includes course work in political theory, American politics, public administration, public policy, international relations and comparative politics. One of three areas of study may be in another academic discipline.

Master of Public Administration Degree

A master of public administration degree with a public administration and policy major is offered through the political science department. The program is designed to prepare students for careers in public service and to increase the administrative and policy analysis skills of people presently employed in government service. The program involves three areas of study: public administration, public policy and a specialized selection of courses approved by the department. For more information, contact the department's graduate adviser.

The political science department also participates in the interdisciplinary master of science degree in land use planning, in cooperation with several other departments. For further information, refer to the Interdisciplinary and Special Programs section of this catalog.

Doctor of Philosophy Degree

The department offers major and minor areas of doctoral study in American politics, public administration, public policy, international relations and comparative politics. A minor field may also be selected from another department.

Applicants should have a grade-point average of 3.25 or higher, submit satisfactory scores on the Graduate Record Examination, provide three letters of reference and a sample of written work. The doctoral degree program requires 48 course credits and 24 dissertation credits. As many as 24 credits may be transferable from master's programs. Foreign language requirements are at the discretion of the candidate's faculty committee. For further information, contact the department's graduate adviser.

International Affairs Major

For detailed program information, see the Interdisciplinary and Special Programs section of this catalog or contact the director of the international affairs major in the political science department. Call 784-6791.

PSYCHOLOGY (PSY)

Department Office: 438 Mack Social Science, 784-6828

The department offers courses leading to the degrees of bachelor of arts, master of arts and doctor of philosophy.

Bachelor of Arts Degree

The general psychology major includes training in all the major areas of psychology. The social psychology degree offering is a broader major that also includes study of sociology and anthropology.

General Psychology

Major Interest Subject

	Credits
PSY 101, 210, 301, 408	15
Additional credits in psychology (of which at least 12 credits must be upper-division)	18
	33

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The psychology department accepts any minor approved by the College of Arts and Science. The department follows the policy of the college regarding the foreign language requirement.

Social Psychology

Major Interest Subject

	Credits
ANTH 101	3
PSY 101, 210, 261, 362, 392	16
SOC 101	3
Additional credits in psychology (of which at least eight credits must be upper-division)	12
	34

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. Students may select any minor approved by the College of Arts and Science. The department follows the policy of the college regarding the foreign language requirement.

Minor in Psychology

Students majoring in another field may minor in psychology by completing the following:

Minor Interest Subject

The department recommends a total of 24 credits in psychology courses to earn a minor. However, students may complete an acceptable minor by taking a minimum of 18 credits (nine of which must be upper-division credits in psychology), including:

1. PSY 101 (3 credits).
2. At least three of the following courses: 210, 233, 261, 301, 403, 405, 408, 421, 431, 435, 441, 446, 447, 448, 480 or 481.

Electives from additional course offerings in psychology (including those courses in No. 2 above).

Master of Arts Degree

The master of arts degree program in general psychology attempts to give the student a broad knowledge of the field.

Doctor of Philosophy Degree General Psychology

In this program, the student must meet all the requirements for admission to the Graduate School and the general requirements for obtaining a doctoral degree at the university. A minimum of 12 credits of dissertation and a minimum of 72 total graduate credits are required. The student must either complete six credits of graduate-level work in a related field *or* complete a fourth semester of foreign language. Also required is a full year in teaching or research that may be satisfied by spending a suitable amount of time in teaching or research concurrently with graduate study.

Students elect a concentration in either experimental psychology or clinical psychology. The department also is offering, on a trial basis, a concentration in behavior analysis. The department offers the following non-clinical specializations: animal behavior (joint offering with the biology department), cognitive psychology and developmental psychology.

Social Psychology

This is an interdisciplinary program offered jointly by the departments of psychology and sociology leading to a doctor of philosophy degree with a major in social psychology.

The student in this program must meet all the requirements for admission to Graduate School and the general requirements for obtaining a doctoral degree at the university. Students are required to complete either six credits of graduate-level work in a related field or a fourth semester of foreign language. Also required is a full year in teaching or research that may be satisfied by spending a suitable amount of time in teaching or research, as well as graduate study.

Admission Information

Students must earn a bachelor's degree from an accredited college or university to be accepted as a graduate student. To be accepted in full standing, a minimum of 18 credits of undergraduate work in psychology is required. The student must also meet the following requirements:

1. Credit in a laboratory course in experimental psychology and a course in statistics. In addition, students in a program emphasizing clinical psychology must take a course in abnormal psychology and a course in theories of personality.
2. A grade-point average of 3.0 for four years of undergraduate work.
3. Recommendations from former instructors demonstrating the student's capability of completing acceptable graduate work.

In some instances in which a student is deficient in the above requirements, it is possible for students to make up such deficiencies before entering the degree program. The department advises students with deficiencies whether they are likely to be considered as graduate students in full standing after the deficiencies are corrected.

Students interested in the social psychology program may substitute 18 credits of undergraduate work in sociology. The laboratory course in experimental psychology is not required for admission if the student's undergraduate work is in sociology, although it is recommended.

Preliminary Screening

Prospective psychology graduate students should contact the psychology department chairman in writing at the earliest possible date, identifying their desired degree program and indicating whether or not financial assistance is needed. Students should complete preliminary information forms and return them with a transcript of all undergraduate work.

Applicants should plan to take the Graduate Record Examination (Aptitude and Advanced) as soon as possible. Test scores should be forwarded to the department for consideration.

Financial Assistance

A variety of graduate assistantships, fellowships and traineeships are available to qualified students. Stipends begin at $7,650, including an exemption from most tuition and registration fees.

If the student is applying for financial assistance, the application should be completed no later than Feb. 1. Normally the candidate receives notification that they will receive assistance by April 1 and has until April 15 to accept or reject the offer. In some instances, financial awards are available after this date and late applications are considered.

SOCIOLOGY (SOC)

Department Office: 200 Mack Social Science, 784-6647

Bachelor of Arts Degree

Major Interest Subject

	Credits
SOC 101 (three credits); 210 (four credits); 392; 491 or 207; 342, 371, 373, 391 or 393; and 333, 376, 463, 480 or 485	19
Additional courses in sociology	12
	31

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The sociology department accepts any minor approved by the College of Arts and Science.

History and social theory is an approved area of study for sociology majors. See the Interdisciplinary and Special Programs section of this catalog for description.

Social Psychology

Major Interest Subjects

	Credits
SOC 101 (three credits), 210 (four credits), 261, 362, 392 (three credits each)	16
PSY 101	3
ANTH 101	3
Additional credits in sociology	12
	34

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. Students may select any minor approved by the College of Arts and Science.

Minor in Sociology

Students majoring in another field may minor in sociology by ompleting one of the following:

Minor Interest Subject (General)

	Credits
Required: SOC 101 and 207	6
Two courses from the following: SOC 342, 371, 373, 391, 393	6
Two courses from the following: SOC 333, 376, 480, 485	6
	18

Minor Interest Subject (Applied)

	Credits
Required: SOC 101 and 379	6
Either SOC 102 or 202; one course from SOC 352, 366, 464; SOC 275 or 480; SOC 376 or 342	12
	18

Advanced Degrees

The department of sociology offers a graduate program leading o a master of arts degree with a major in sociology, and in conjunction with the department of psychology, a program leading to a doctor of philosophy degree with a major in social psychology.

The program of graduate studies in sociology is designed to prepare sociologists for careers in the academic world and in areas of policy-related research. Strong emphasis is given to sociological theory, but always within a context that actively translates the theory into concrete research activity. The foundations of both theory and research technique are emphasized as valuable tools to study modern social relations in their historical and comparative perspectives.

Emphasis in the graduate program is placed upon scholarship.

Master of Arts Degree

The master of arts degree program in sociology includes an emphasis in sociology or social psychology.

The master's degree is granted when the student satisfactorily completes the following requirements:

(1) completion of 30 semester credits in graduate-level courses, including SOC 601-602 (6 credits), SOC 706-707 (6 credits) and two of the following: SOC 627 (3 credits), SOC 718 (3 credits), SOC 737 (3 credits), or SOC 738 (3 credits);

(2) completion of a minimum of 21 graduate credits while in residence;

(3) the satisfactory completion of a comprehensive examination;

(4) the completion of a thesis under the supervision of three faculty members;

(5) the satisfactory completion of an oral examination given by department faculty.

An alternative method of earning the master of arts degree is the nonthesis approach. Student requirements in this method include the completion of items No. 1 through 3 above, in addition to the completion of a professional paper under the supervision of three faculty members and satisfactory performance on an oral examination given by the graduate advisory committee. The requirement to complete nonthesis graduate study is 32 semester credits.

Doctor of Philosophy Degree Social Psychology

The department of sociology, in cooperation with the psychology department, offers a graduate program leading to the Ph.D. degree in social psychology.

This is an interdisciplinary program administered by a social psychology committee. Students may register and receive credits in either the sociology or psychology department.

Students must meet all the requirements for admission to graduate school and the general requirements for obtaining a doctoral degree at the university. A full year in teaching or research is also required, which students may satisfy by spending a suitable amount of time in teaching or research concurrently with graduate study.

For additional information, contact the chairman of the doctoral program in social psychology, 301 Mack Social Science, 784-6436.

Admissions Information

The requirement for acceptance as a graduate student is a bachelor's degree from an accredited college or university. To be accepted in full standing, a minimum of 18 credits of undergraduate work in sociology is required. The student must also meet the following requirements:

1. Credit in a theory course in sociology and a course in statistics.
2. A grade-point average of 3.0 or higher for four years of undergraduate work.
3. Recommendations from former instructors indicating the student's capability of doing graduate work at an acceptable level of performance.

In some instances in which a student is deficient in the above requirements, the student may correct such deficiencies before entering the degree program. The department advises students with deficiencies whether they are likely to be considered as graduate students in full standing after such deficiencies have been corrected.

The student interested in the social psychology program may substitute credits of undergraduate work in psychology.

Preliminary Screening

Prospective sociology graduate students should contact the sociology department chairman in writing at the earliest possible date, identifying their desired degree program and indicating whether they need financial assistance. Students should complete preliminary information forms and return them with a transcript of all undergraduate work.

Applicants should plan to take the Graduate Record Examination (Aptitude and Advanced) as soon as possible. Test scores should be forwarded to the department for consideration.

Financial Assistance

A variety of graduate assistantships, fellowships and traineeships are available to qualified students. Stipends begin at $8,800, including partial exemption of tuition and registration fees.

If the student is applying for financial assistance, the application should be completed prior to Feb. 1. Normally the candidate receives notification by April 1 and has until April 15 to accept or reject the offer. In some instances financial awards become available after this date and late applications are considered.

SPEECH COMMUNICATION AND THEATRE (SPCM, THTR)

Department Office: 155 Church Fine Arts Complex, 784-6839

The department offers the bachelor of arts degree with a major in speech communication or in theatre and the bachelor of fine arts degree with a major in theatre. A master of arts degree is offered in speech communication.

Bachelor of Arts Degree

Speech Communication

	Credits
Required: SPCM 113, 210, 212	9
Electives	
(A minimum of 18 credits must be taken at the 300-400 level)	24
	33

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The speech communication and theatre department accepts any minor approved by the College of Arts and Science.

Theatre

	Credits
Required: THTR 100,[4] 118, 119 and 221	12
Either THTR 203 or 403[5]	9
Selectedcourses from the following: THTR 471, 472, 473, 474	6
Additional theatre courses	6
	33

Additional Required Courses: In addition to credits for the major, students must complete 18-21 credits in a minor. The speech communication and theatre department accepts any minor approved by the College of Arts and Science.

Minors in Speech Communication and Theatre

Students majoring in another field may minor in speech communication or theatre by completing one of the following:

Speech Communication Minor

	Credits
SPCM 210	3
Selected courses from the following: SPCM 113, 213, 319, 329, 480, 490	6
Selected courses from the following: SPCM 212, 315, 410, 411, 412, 427, 428, 433, 434, 435	9
A minimum of nine credits must be taken at the 300-400 level	18

Theatre Minor

	Credits
THTR 100, 118, 119	9
Selected upper-division courses in theatre	9
	18

(After completion of the three required courses, students may select an area of specialization: history of the theatre, acting, technical theatre, etc.)

Bachelor of Fine Arts Degree

Theatre

Requirements for the bachelor of fine arts degree include:

(1) Degree candidates must gain acceptance to the major, determined by application to the theatre faculty after completion of 60 credits. Once accepted into the bachelor of fine arts program, students must complete four semesters (not counting summer session) as full-time students.

(2) Candidates must havea 3.0 or higher grade-point average in theatre courses to gain acceptance to the major and the same average to continue in the program.

(3) Candidates must have completed THTR 100, 118, 119, 221 and nine credits of THTR 203, 403 prior to application.

(4) Candidates are subject to continuing review by theatre faculty and may be returned to the bachelor of arts program if they fail to maintain a 3.0 average in theatre courses or to demonstrate the required aptitude for professional training.

Departmental Core

	Credits
Required: THTR 100, 118, 119 and 221	12
To be selected from THTR 203, 403[5]	9
Selected courses from the following: THTR 471, 472, 473, 474	6
	27

In addition to the above requirements, the bachelor of fine arts degree candidate must specialize in one of two options:

Performance Option

	Credits
Selected courses from the following: THTR 121, 250-251, 350-351	15
To be selected from THTR 203, 403[5]	9
Selected courses from the following: THTR 260, 321, 360, 370, 421, 431-432, 450, 454-455	15
	39

Design/Technology Option

	Credits
Selected courses from the following: THTR 203, 219-220, 230, 240, 330, 339, 340, 349, 360, 370, 403, 409, 419, 431-432, 440	36
Required: THTR 495	3
	39
TOTAL	66

Students pursuing the bachelor of fine arts degree with a theatre major are not required to take a minor or to satisfy the university's foreign language requirements.

Master of Arts Degree

The department offers a graduate program leading to the master of arts degree with a major in speech communication. A thesis and nonthesis plan are available.

Internships in such areas as advertising, biomedical communication, conference management, organizational administration and negotiation may be included as part of the candidate's program.

Requirements for admission to graduate standing in the speech communication major include:

1. An undergraduate grade-point average of 3.0 or higher.
2. A composite score of at least 900 on verbal and quantitative sections of the Graduate Record Examination;
3. At least 18 undergraduate credits in speech communication with grades of B or better (graduate faculty may approve nine upper-division credits in speech communication and nine upper-division credits in a related field, all 18 credits must be for grades of B or better).

Applicants must take the Graduate Record Examination before applying for admission to graduate-level courses as a "Graduate Special." As many as nine credits of graduate special courses may apply toward the master of arts degree.

Graduate teaching fellowships are available to qualified applicants. Stipends begin at approximately $8,000 per year. Applications for graduate fellowships should be received by the director of graduate programs in speech communication by March 1. Applicants must be approved for admission to graduate standing in speech communication to be eligible for a teaching fellowship.

WOMEN'S STUDIES (WS)

Department Office: 334 College Inn, 784-1560

The purpose of this interdisciplinary program in the College of Arts and Science is to provide students with a fuller understanding of the nature and role of women through academic study. Through the course of their studies, students will discover and evaluate the

accomplishments of women. They will consider the special problems of women in a changing world.

The core course (W S 101) is offered each fall semester and occasionally during the summer session, and is open to all students regardless of major. Related courses are offered by a number of departments. In addition, suitable courses offered from time to time, under the Special Topics course listing in various departments, may be approved by the women's studies coordinator for inclusion in the minor program.

Students seeking a minor in women's studies must complete the introductory course (W S 101) and a program comprising 15 additional credits. Nine of the credits must be gained in courses numbered 300 or higher. The following courses may be chosen to complete the minor: ANTH 212, ENGL 267, FLL 450, HDFS 430, P SC 354, P SC 423, SOC 275, SOC 453, SOC 480, W S 250, W S 297, W S 430, W S 440, W S 450, W S 490 and W S 497.

Students must consult with the women's studies adviser to choose courses suitable to their needs.

Footnotes

[1] See the Interdisciplinary and Special Programs section of this catalog for more information.
[2] MATH 181 satisfies the university's core mathematics requirement.
[3] For the first four semesters, vocal students register for three credits with concurrent registration in MUS 218 (one credit per semester) to total four credits. MUS 218 is devoted to the study of diction in English, French, Italian and German.
[4] THTR 100 should be taken prior to or concurrently with all other theatre courses.
[5] May be repeated for a maximum of nine credits each.

College of Business Administration

Laurie G. Larwood, *Dean*
Dean's Office: 408 Business Building, 784-4912

For footnote explanation, see page 97

Departments of Instruction:

Accounting and Computer Information Systems
Economics
Managerial Sciences

Objectives

The College of Business Administration strives to maintain a proper balance between general education and professional preparation for careers in the business world, government, research and teaching.

The Advisement Center provides official advisory services for prebusiness, undergraduate and graduate students in the college. The primary function of the center is to help students define their academic goals and select a major field of study in accordance with their abilities and interests. Students who are interested in pursuing either undergraduate or graduate degrees in the College of Business Administration are encouraged to visit the center. For more information, call 784-4912.

The college's internship program provides business students with an opportunity to gain knowledge of the practical aspects of business operations while earning college credits and income.

The college offers career placement services to assist juniors, graduating seniors and MBAs with career planning and placement. Located in Room 408 F of the Business Building, the department offers students a variety of services.

The Bureau of Business and Economic Research is the official research unit of the college. It provides opportunities for faculty and students to research business and economic issues of concern to Nevada and nationally.

The Institute for the Study of Gambling and Commercial Gaming supports research and study dealing with gambling behavior and commercial gaming industries, as well as the economic, business, social and political effects of gambling on society.

The Nevada Small Business Development Center is a cooperative program run by the College of Business Administration and the U.S. Small Business Administration. The program assists small business enterprises in the state, helping businesses plan their growth and offering a variety of professional management services.

Accreditation

The College of Business Administration's baccalaureate and master of business administration programs are fully accredited by the American Assembly of Collegiate Schools of Business.

Programs

The College of Business Administration offers the following degree programs:

Baccalaureate Degrees: (a) bachelor of science in business administration with majors in accounting, computer information systems, economics, finance, logistics management, management and marketing; (b) bachelor of arts with a major in economics.

Master's Degrees: (a) master of business administration, (b) master of science with a major in economics and (c) master of arts in economics.

Premajor Admission

New undergraduate applicants to the College of Business Administration are admitted to premajor status rather than to a specific major. Premajor students may not enroll in College of Business Administration courses numbered 300 or above.

Sample Schedule for Premajor Students

Freshman Year – First Semester

	Credits
EC 101 or 102 (does not satisfy social science requirement)	3
ENGL 101	3
MATH 124	3
PSY 101	3
Fine arts course	3
Elective—nonbusiness	1
	16

Freshman – Second Semester

	Credits
EC 101 or 102 (does not satisfy social science requirement)	3
ENGL 102	3
GEOG 103 (prerequisite: mathematics requirement)	3
MATH 176	3
SOC 101	4
	16

Sophomore Year – First Semester

	Credits
ACC 201	3
EC 261	3
W T 201 (prerequisite: ENGL 102)	3
Elective—nonbusiness	3
Natural science (recommend BIOL 100, CHEM 100 or PHYS 100; prerequisite: mathematics requirement)	4
	16

Sophomore Year – Second Semester

	Credits
ACC 202	3
CIS 201, 202	4
EC 262	3
W T 202 (may be corequisite with W T 203)	4
	16

Academic Standards

Students enrolled in the College of Business Administration either as a premajor or major must have their courses reviewed by a faculty adviser before registering. Students placed on college or university probation are not eligible to progress from premajor to major status. A student may remain on probationary status in the college for a maximum of two consecutive semesters. After that period, the student must appear before the college's Academic Standards Committee before registering for any additional courses in the college.

Acceptance of Transfer Students Into Business Administration

An overall grade-point average of 2.75 or higher in courses at the bachelor's degree level is required for a student to be approved for transfer, or be admitted, to a prebusiness or major program in the College of Business Administration. This requirement does not apply to new freshmen applicants.

Requirements for Acceptance to a Major

1. Completion of 60 credits or more with an overall grade-point average of 2.75 or higher.

2. Completion of the lower-division business core with an overall grade-point average of 2.75 or higher. **The following courses comprise the lower-division core: ACC 201, 202; CIS 201, 202; EC 101, 102, 261, 262; MATH 176.** A grade of C or better is required for all lower-division business core courses, exclusive of general electives.

These requirements are minimum standards that all students are encouraged to surpass. Success in a major program is dependent upon a student possessing strong quantitative and English usage skills.

Application

Students must formally apply to the College of Business Advisement Center, 409 Business Building, for acceptance to a major program. The fall acceptance deadline is April 1. The spring acceptance deadline is Nov. 1.

Requirements for Graduation in a Major

1. Complete 128 credits or more with an overall grade-point average of 2.0 or higher.
2. Complete lower-division business core with a grade-point average of 2.75 or higher.
3. Complete all College of Business Administration courses with a grade-point average of 2.50 or higher.
4. Complete all courses in the major field with a grade-point average of 2.75 or higher.

Baccalaureate Degree Requirements Bachelor of Arts (See Economics)

Bachelor of Science in Business Administration

Basic Curriculum for All Majors

The bachelor of science in business administration degree is granted upon completion of any one of the following four-year curricula with satisfactory grades and upon the recommendation of the faculty and the dean. An economics major may elect a program leading to the bachelor of arts degree.

Candidates for graduation must submit an application for graduation to the Dean's Office in the College of Business Administration at the beginning of the final semester before graduation.

A student may elect to graduate under the following degree requirements:

- the year of admission and registration
- the year of acceptance to the major in which the student is graduating
- the year of re-entry to the university if not enrolled for a period of five years or more
- the year of graduation.

In the case of re-entry after five years, a student may use the requirements of the years of re-entry or graduation only.

Students transferring into the College of Business Administration may elect only the degree requirements of the year of transfer, the year of acceptance to a major, or the year of graduation. Students may make adjustments to their curriculum with the consent of the adviser and the dean of the college. No changes are considered that bring the curriculum into conflict with any of the following requirements, which must be met by every student at the university:

1. The university's admission requirements for regular standing and residence credit, as well as general university graduation requirements.

2. A minimum of 128 credits is required for graduation.

3. Of the total 128 credits, each student must successfully complete:

a) A minimum of 40 credits in courses numbered 300 or above.

b) A minimum of 51 credits in nonbusiness (of which 48 must be academic credits) including the following:

Nonbusiness Requirements[1]

	Credits
ENGL 101, 102	6
GEOG 103	3
MATH 124, 176	6
PSY 101	3
SOC 101	3
SPCM 213 or 217 or 329	3
W T 201, 202, 203	9
Elective—nonbusiness	12
Fine arts core course	3
Natural science (recommend BIOL 100; CHEM 100 or PHYS 100)	3

Limitations

MATH 101 (a three-credit course) is excluded from the 128 credits required for graduation.

A maximum of four 100- and 200-level credits in recreation, physical education, dance and military science courses may be applied toward the 128 credits required for a bachelor's degree.

c) Degree candidates in the college must earn a minimum of 51 credits in business and economics subjects, which include the following courses:

	Credits
ACC 201, 202	6
CIS 201	3
CIS 202	1
EC 101, 102	6
EC 261, 262	6
EC 300 (or above)—theory course[2]	3
MGRS 310	3
MGRS 321[3]	3
MGRS 323	3
MGRS 325 or 373, 374[2]	3-6
MGRS 352	3
MGRS 365	3
MGRS 488	3
An international business course[2]	3
The international business course must be selected from the following: ACC 420, EC 301, EC 367, EC 410 (course content varies and does not always satisfy the international business requirement. Check with economics department for details.), EC 458, EC 459, MGRS 420, MGRS 452, MGRS 458, MGRS 470.	
Other College of Business Administration courses for an overall total of	51

d) Completion of course requirements for the selected major.

Upper-Division Courses

Courses numbered 300 or above in business are open only to:

1) business students who have been accepted to a major
2) nonbusiness majors with the approval of the instructor, department chairman and dean

Satisfactory/Unsatisfactory Courses

Students in the College of Business Administration may apply a maximum of 15 satisfactory/unsatisfactory (S/U) credits, including College Level Examination Program (CLEP) credits toward the baccalaureate degree. Physical education and military science credits are excluded. Premajor or major students may not register for courses in business administration or MATH 176, 178 or 181 on an S/U basis, except for thesis or internship.

ACCOUNTING AND COMPUTER INFORMATION SYSTEMS (ACC, CIS)

Department Office: 313 Business Building, 784-4028

The department offers the majors of accounting and computer information systems. Students may also take an option that includes a combined accounting and computer information systems major. Upon choosing a major, the student must meet course requirements established by the department, the college and the university.

Accounting and Computer Information Systems

Accounting, by its nature, operates within a broad socioeconomic environment. Therefore, great emphasis is placed upon conceptual knowledge. The student must not only know, but understand.

The accounting major is provided with the theories and procedures that prepare the student for the many facets of the accounting profession, such as public, industrial, managerial, tax and governmental accounting.

The computer information systems major is offered for those who wish to specialize in business-oriented, computer-based information resource systems. The curriculum provides a broad overview of computer-based information systems with special emphasis on business applications and managerial control.

The programs of study for the accounting major, the computer information systems major, the accounting/computer information systems option, as well as the accounting and computer information systems minors are listed below:

Freshman Year
(ACC, CIS and ACC/CIS)

	Credits
EC 101, 102	6
ENGL 101, 102[4]	6
GEOG 103	3
MATH 124	3
MATH 176	3
PSY 101	3
SOC 101	3
Elective—nonbusiness	3
Fine arts core course	3
	33

Accounting Major

Sophomore Year

	Credits
ACC 201, 202	6
CIS 201, 202	4
CIS 203	3
EC 261, 262	6
W T 201, 202, 203[5]	9
Elective—nonbusiness	3
Natural science (recommend BIOL 100, CHEM 100 or PHYS 100; prerequisite: mathematics requirement)	3
	34

Junior Year

	Credits
ACC 303, 304	6
ACC 309	3
ACC 313	3
MGRS 310	3
MGRS 321[3]	3
MGRS 323	3
SPCM 213 or 217 or 329	3
Accounting elective—one of the following: ACC 407, 410, 414, 490 or 494	3
Elective—nonbusiness	4
	31

Senior Year

	Credits
ACC 311	3
ACC 405	3
ACC 460	3
ACC 480	3
MGRS 352	3
MGRS 365	3
MGRS 488 (Capstone)	3
Accounting elective—one of the following: ACC 407, 410, 412, 414, 420, 424, 461, 470, 490, 493, 494	3
EC 463 or 464 or 481 (Capstone)	3
International business course	3
	33

Computer Information Systems Major

Sophomore Year

	Credits
ACC 201, 202	6
CIS 201, 202	4
CIS 203	3
EC 261, 262	6
Natural science (recommend BIOL 100; CHEM 100 or PHYS 100; prerequisite: mathematics requirement)	3
W T 201, 202, 203[5]	9
	31

Junior Year

	Credits
CIS 251	3
CIS 451	3
CIS 461	3
MGRS 310	3
MGRS 321[3]	3
MGRS 323	3
MGRS 352	3
MGRS 365	3
SPCM 213 or 217 or 329	3
Electives—nonbusiness	6
	33

Senior Year

	Credits
CIS 484	3
CIS 485	3
MGRS 325	3
MGRS 488 (Capstone)	3
Computer information systems electives—Consult department for elective courses	6
EC 463, 464 or 481	3
Electives—nonbusiness	7
International business course	3
	31

Accounting and Computer Information Systems Option

Sophomore Year

	Credits
ACC 201, 202	6
CIS 201, 202	4
CIS 203	3
EC 261, 262	6
W T 201, 202, 203[5]	9
Elective—nonbusiness	3
Natural science (recommend BIOL 100; CHEM 100 or PHYS 100; prerequisite: mathematics requirement)	3
	34

Junior Year

	Credits
ACC 303, 304	6
ACC 309	3

ACC 313	3
CIS 251	3
CIS 451	3
MGRS 310	3
MGRS 321[3]	3
MGRS 323	3
SPCM 213, 217 or 329	3
Elective—nonbusiness	3
	33

Senior Year

	Credits
ACC 311	3
ACC 405	3
ACC 424	3
ACC 460	3
ACC 480	3
CIS 461	3
MGRS 352	3
MGRS 365	3
MGRS 488 (Capstone)	3
EC 463, 464 or 481 (Capstone)	3
International business course	3
	33

Accounting/computer information systems majors who plan to take the CPA Examination upon graduation must take MGRS 373 and 374 in place of MGRS 325.

Accounting Minor

	Credits
ACC 201, 202	6
ACC 303	3
CIS 201, 202	4
CIS 203	3
Plus upper-division courses in accounting (except ACC 395, 396, 460, 461,491)	6
	22

Computer Information Systems Minor

	Credits
CIS 201, 202	4
CIS 203	3
CIS 251	3
CIS 451	3
CIS 461	3
Computer information systems elective—consult department for elective courses	3
	19

ECONOMICS (EC)

Department Office: 318 Business Building, 784-6850

The economics major is designed to prepare students for positions as economic and statistical analysts in business, government and nonprofit organizations, and for the teaching profession. In addition, it provides a strong foundation for graduate study and research in the fields of economics, business, public policy and law.

Two economics degree programs are offered. One leads to the bachelor of science in business administration and complies with all the requirements of the American Assembly of Collegiate Schools of Business, as administered through the College of Business. The other degree program leads to the bachelor of arts with a major in economics and follows the traditional liberal arts approach.

The department also offers a minor or related area program in economics.

Bachelor of Science in Business Administration

This program is intended for economics majors desiring a curriculum that includes a foundation in the functional areas of business administration. Candidates for the degree are not required to earn credits in a foreign language.

Economics Major

Freshman Year

	Credits
EC 101, 102	6
ENGL 101, 102[4]	6
GEOG 103	3
MATH 124	3
MATH 176	3
PSY 101	3
SOC 101	3
Fine arts core course	3
Elective—nonbusiness	1
	31

Sophomore Year

	Credits
ACC 201, 202	6
CIS 201, 202	4
EC 261, 262	6
W T 201, 202, 203[5]	9
Elective—nonbusiness	3
Natural science (recommend BIOL 100, CHEM 100 or PHYS 100; prerequisite: mathematics requirement)	3
	31

Junior Year

	Credits
EC 303	3
EC 321	3
EC 322	3
MGRS 310	3
MGRS 321[3]	3
MGRS 323	3
MGRS 325	3
MGRS 352	3
MGRS 365	3
SPCM 213, 217 or 329	3
Elective—nonbusiness	3
	33

Senior Year

	Credits
MGRS 488 (Capstone)	3
EC 431 or EC 441	3
EC 463, 464 or 481 (Capstone)	3
Economics courses (300 or above)	9
Electives—business and nonbusiness	12
International business[6]	3
	33

Bachelor of Arts

This program is intended for economics majors desiring a curriculum that emphasizes a foundation in the social sciences. Candidates for this degree are required to successfully complete a fourth semester college course in a foreign language or show evidence of equivalent proficiency. They are also required to complete a minimum of 38 credits in economics courses.

Freshman Year

	Credits
EC 101, 102	6
ENGL 102[4]	3
MATH 176	3
SOC 101	3

Elective	4
Fine arts core course	3
Foreign language[7]	8
	30

Sophomore Year

	Credits
Foreign language[7]	6
GEOG 103	3
EC 261, 262	6
CIS 201, 202	4
W T 201, 202, 203[5]	9
Elective	2
	30

Junior Year

	Credits
PSY 101	3
EC 303	3
EC 32, 322	6
MGRS 321[3]	3
SPCM 213, 217 or 329	3
Elective	12
Natural science laboratory course (BIOL 100, CHEM 100 or PHYS 100 recommended)	4
	34

Senior Year

	Credits
EC 431 or EC 441	3
EC 481 (Capstone)	3
EC 463 or 464 (Capstone)	3
Electives	17
Other economics courses (300 or above)	8
	34

Minor or Related Area in Economics

The minor or related area program is designed for students who seek a background in economics to complement their own major programs.

	Credits
EC 101, 102	6
EC 321	3
EC 322	3
Other economics courses (300 or above)	6
	18

MANAGERIAL SCIENCES (MGRS)

Department Office: 313 Business Building, 784-6993

The managerial sciences department offers major fields of study in finance, logistics, management and marketing. The department also offers courses in business law.

The following program outline is suggested for freshmen and sophomores planning to major in finance, logistics, management, or marketing:

Freshman Year

	Credits
EC 101, 102	6
ENGL 101, 102[4]	6
GEOG 103	3
MATH 124	3
MATH 176	3
PSY 101	3
SOC 101	3
Elective—nonbusiness	3
Fine arts core course	3
	33

Sophomore Year

	Credits
ACC 201, 202	6
CIS 201, 202	4
EC 261, 262	6
W T 201, 202, 203[5]	9
Elective—nonbusiness	3
Natural science (recommend BIOL 100, CHEM 100 or PHYS 100; prerequisite: mathematics requirement)	3
	31

Finance Major

Students with career objectives in financial management, banking and other financial institutions, investments or insurance may choose to major in finance. Course requirements for the finance major include:

1. Satisfaction of the basic curriculum requirements for all business students. As part of those requirements, finance majors must complete:

EC 303	3
MGRS 325	3
MGRS 420	3

2. Nine credits required for all finance majors:

MGRS 370	3
MGRS 404	3
MGRS 462	3

3. Twelve credits chosen from the following list. Students should select courses with the written approval of their adviser and the department chairman.

ACC 309	3
ACC 313	3
BADM 480[6]	3
EC 321	3
EC 322	3
EC 403	3
EC 441	3
EC 451	3
MGRS 353	3
MGRS 415	3
MGRS 481[8]	3
MGRS 482[8]	2 to 3
MGRS 490[8]	1 to 3
MGRS 493	3

The following program outline is suggested for finance majors during their junior and senior years:

Junior Year

	Credits
EC 303	3
MGRS 310	3
MGRS 321[3]	3
MGRS 323	3
MGRS 352	3
MGRS 365	3
MGRS 370	3
MGRS 325	3
SPCM 213, 217 or 329	3
Elective—nonbusiness	6
	33

Senior Year

	Credits
MGRS 404	3
MGRS 420	3

Elective—nonbusiness	2
Selected course from major field options	3
	32

Senior Year

	Credits
MGRS 452	3
MGRS 460	3
MGRS 462 (Capstone)	3
MGRS 488 (Capstone)	3
Electives—business and nonbusiness	11
Human resource, entreneurship or general management options	9
	32

Marketing Major

Students with career objectives in advertising management, consumer behavior, general marketing, international marketing, marketing research, quantitative marketing and retailing and distribution may choose the marketing major. Course requirements for the major include:

1. Satisfaction of the basic curriculum requirements for all business students. As part of those requirements, marketing majors must complete:

EC 321	3
MGRS 470	3

2. Twelve credits required for all marketing majors:

MGRS 312 or 316	3
MGRS 462 (Capstone)	3
MGRS 471	3
MGRS 489	3

3. Nine credits chosen from the following list. Students should select courses with the written approval of their adviser and the department chair.

BADM 480[8]	3
JOUR 335	3
MGRS 312 or 316	3
MGRS 314	3
MGRS 422	3
MGRS 424	3
MGRS 455	3
MGRS 481[8]	3
MGRS 482[8]	2 to 3
MGRS 490[8]	1 to 3
MGRS 492	3
PSY 362	3

The following course outline is suggested for marketing majors during their junior and senior years:

Junior Year

	Credits
EC 321	3
MGRS 310	3
MGRS 312 or 316	3
MGRS 321[3]	3
MGRS 323	3
MGRS 325	3
MGRS 352	3
MGRS 365	3
SPCM 213, 217 or 329	3
Elective—nonbusiness	2
Electives—business and nonbusiness	3
	32

Senior Year

	Credits
MGRS 462 (Capstone)	3
MGRS 470	3
MGRS 471	3
MGRS 488 (Capstone)	3
MGRS 489	3
Electives—business or nonbusiness	8
Marketing courses (with written approval)	9
	32

Minor in Business Administration

This minor program is for non-College of Business Administration students only who desire a background in general business to complement their own major program.

	Credits
EC 101, 102	6
ACC 201, 202	6
MGRS 310	3
MGRS 323	3
MGRS 365	3
	21

International Business Minor

This minor program provides business students with a broad background in international business. A complement to the major programs in the College of Business Administration, the international business minor is open only to students in the college.

Program

	Credits
ACC 420	3
EC 458	3
MGRS 420	3
MGRS 452	3
MGRS 470	3
Selected elective (refer to the following list)	3
	18

Electives

	Credits
EC 301	3
EC 367	3
EC 410	3
EC 459	3

Prelegal Education in the College of Business Administration

For more information about the university's prelegal curricula, refer to the College of Arts and Science section of this catalog. Students who are interested in obtaining an undergraduate degree in business in preparation for admission to law school may gain more information by contacting the College of Business Administration associate dean, 409 Business Building, 784-4912.

Graduate Programs

Graduate Student Classifications

Graduate Special

Graduate special classification applies to students who (1) do not wish to pursue a program leading to an advanced degree, (2) wish to pursue a program leading to an advanced degree, but need to complete additional undergraduate course work or take an examination in order to meet the admission requirements for graduate standing, or (3) can demonstrate that they meet the requirements for

admission to graduate standing, but are unable to complete the application for admission prior to registration.

To gain admission to graduate special status, students must file official documents showing that they have a baccalaureate degree from a fully accredited four-year college or university.

With graduate special classification, a student may enroll for undergraduate credit in the College of Business Administration. *Graduate special students must have the written approval of the director of graduate programs, in advance, in order to register for graduate-level courses in the college.*

International students who are on a student visa are not eligible for admission to the graduate special classification.

Graduate Standing

Graduate standing classification is for those students who wish to pursue a program leading to an advanced degree.

In addition to meeting the requirements of the Graduate School, the following are the *minimum standards normally required for admission to graduate standing* in the College of Business Administration. If the applicant does not meet any of the following requirements, admission to graduate standing on a **prescribed program** may be considered. A student enrolled in a prescribed program is ineligible for a teaching or research assistantship.

For more information, contact the College of Business Administration associate dean, 409B Business Building, 784-4912.

For Master of Business Administration: The applicant must have a baccalaureate (or an advanced) degree from an accredited four-year institution with a satisfactory combination of undergraduate grade-point average and scores on the Graduate Management Admission Test (GMAT). The Graduate Record Examination (GRE) is normally not acceptable for admission to the MBA program.

For master's degree in economics:

1. The applicant must have a baccalaureate degree from an accredited institution with an overall grade-point average of at least 2.75 on a scale of 4.0.
2. The applicant must earn satisfactory scores on the GMAT or GRE Aptitude and Advanced economics tests. Scores must be submitted prior to admission.
3. The applicant must have completed at least 18 semester credits of undergraduate course work in economics. Undergraduate prerequisites may be completed while enrolled at the university as a graduate special student (see "Graduate Special" classification).

The GMAT and GRE tests are administered at many locations by the Educational Testing Service. Information and application forms may be obtained by writing directly to Educational Testing Service, Box 966, Princeton, NJ 08540.

Application Procedures

To apply to the MBA program, submit the following to the Office of Admissions and Records:

(1) a completed and signed Application for Admission form
(2) a $20 nonrefundable application fee
(3) two official transcripts from each college or university where work has been completed or is in progress
(4) the official report of the Graduate Management Admission Test (GMAT).

The following is to be submitted to the Office of Graduate Programs, College of Business Administration:

(1) current detailed resumé
(2) a personal statement indicating the applicant's educational and career objectives
(3) a letter(s) of recommendation from individual(s) familiar with the applicant's fitness for graduate study and promise of effective business performance.

Application Period

All admission applications and credentials must be received in the Office of Admissions and Records by Aug. 1 to be considered for the fall semester, and Jan. 2 for the spring semester.

If the student is applying for financial assistance or a graduate assistantship, the application should be completed and returned no later than Feb. 1.

International Students

Applications from international students are evaluated on an individual basis.

The minimum TOEFL (Test of English as a Foreign Language) score required for admission to advanced degree programs in business administration is 550.

International applicants must satisfy the medical examination and financial responsibility requirements prior to admission.

Advisement

The MBA degree offering is a college-wide program. Advisement is provided by the office of the associate dean and director of graduate programs. Upon completion of the core and the required advanced courses in the breadth area, the student may tailor the program to his or her needs through elective courses and/or an individualized advanced field project or thesis. These specialized courses, along with any substitutions of advanced courses, require permission from the office of the associate dean.

The department of economics advises all students enrolled in the master of arts or master of science programs in economics.

Students are cautioned that some graduate courses in the college are offered only one semester per academic year and program conflicts may result if proper advisement is neglected.

All graduate standing students should meet with the director of graduate programs prior to initial registration to develop their program of study.

A student is permitted to alter the program of study only after consultation with the directors's office.

Limitations on Transfer and S/U Courses and Courses Taken as Graduate Special

Subject to the approval of the graduate director, **a maximum of nine appropriate graduate transfer credits may be accepted.**

S/U graded courses are not acceptable for 600- or 700-level graduate credit in the MBA (except by examination in core courses) or economics programs.

A maximum of nine graduate credits earned as a graduate special student may be used in satisfying requirements for any advanced degree.

Academic Standards and Probation

Graduate students in the College of Business Administration who do not maintain an overall grade-point average of at least 3.0 in all graduate courses are placed on probation. Students on probation may be prohibited from further enrollment if they fail to raise their overall GPA to at least 3.0 by the end of the first probationary semester. Exceptions are made only at the discretion of the director of graduate programs and the graduate school dean and may then be for a single additional semester if warranted. Additional information on the graduate academic standards requirements is included in the Graduate School section of this catalog.

Continuous Matriculation

A graduate student who discontinues enrollment for more than one year may be required by the director of graduate

programs to apply for readmission. Enrollment is defined as registration in one or more courses for credit relevant to the student's degree program. (See the "approved leave" information under "Academic Requirements" in the Graduate School section of this catalog.) Enrollment begins when students register for the first course for credit.

In addition, a student who discontinues enrollment for more than one year must meet the requirements of the current catalog when he or she chooses to re-enroll.

Advanced Degrees

The College of Business Administration offers the following advanced degrees:

1. Master of Business Administration (MBA)
2. Master of Science in Economics
3. Master of Arts in Economics

The college also offers minors in many of the primary fields within the business administration discipline.

The master of science and master of arts degrees require the successful completion and defense of a thesis (Plan A). A nonthesis option (designated Plan B) is available to candidates for the Master of Business Administration degree.

Master of Business Administration (MBA)

The program is designed for managers and executives, or those students with at least two years of equivalent experience. The MBA program generally can be completed by most students in three years or less of part-time study. Full-time students are encouraged to enter the program as well, but they must have obtained a minimum of two years of meaningful experience in a business, government or nonprofit organization.

This program is distinguished by four characteristics:

(1) it allows specializations such as logistics and gaming, and gives students flexibility to focus on specific industry and professional needs

(2) all appropriate courses have international and computer components

(3) the program responds to those presently in managerial and professional positions and is flexible to their needs

(4) it is accredited by AACSB.

The program has been designed to promote understanding of the basic tools and techniques needed to manage effectively and efficiently in the changing global marketplace. An MBA from the University of Nevada, Reno will enable a manager or executive to perform a wide range of managerial functions, including:

(1) managing human and material resources in a culturally diverse and rapidly changing technological world

(2) making decisions based on complex accounting and financial information

(3) using state-of-the-art computer data bases and information systems for analysis and interpretation

(4) understanding the implications of an increasingly global economy and the changing legal, ethical, cultural and political environments of business

(5) developing business policies and strategies that are responsive to rapid change.

Admission Requirements

The MBA graduate programs are open to those who hold a bachelor's degree from an accredited college or university, or its equivalent, and candidates with managerial or executive experience. Any undergraduate major is acceptable for most programs and a student with a nonbusiness degree may find the program particularly worthwhile.

The college is primarily concerned with the candidate's fitness for graduate study and promise of effective business performance. A judgment of these qualities is made from the following information: undergraduate record, performance on the Graduate Management Admission Test (GMAT), letters of recommendation, a written statement indicating the candidate's educational and career objectives, business or military experience, resume and a personal interview with the director of graduate programs.

At the time of the interview, the applicant will be expected to demonstrate proficiency in oral and written communication. The written communication requirements are fulfilled by submitting a written statement indicating the candidate's educational and career objectives and other writing samples the applicant may wish to have considered.

Applicants need to have a working knowledge of microcomputers and be able to use them for word processing and spreadsheets. They also must have the ability to solve the type of quantitative problems that are important in analyzing business problems.

If the applicant needs to improve in any of the the areas mentioned above, skills counseling will be provided by the office of graduate programs.

Waiver Policy

Individual common body of knowledge or core courses generally may be waived by permission of the associate dean if students completed them or their equivalent at an AACSB accredited or equivalent institution with a grade of at least B. The course must have been completed within a reasonable amount of time. Waivers of core courses may also be made upon examination.

Course Requirements

The following courses are required unless waived:

The Common Body of Knowledge (Core)

	Credits
BADM 700	3
BADM 701	3
BADM 710	3
BADM 720	3
BADM 730	3
BADM 741	3
BADM 760	3
	21

Breadth

	Credits
BADM 750 (required)	3
BADM 772 (required)	3
And four of the following courses:	
BADM 706[9]	3
BADM 711	3
BADM 729	3
BADM 740	3
BADM 749	3
BADM 769	3
BADM 780	3
BADM 791	3
	18

Specialization

In consultation with the associate dean, students may choose nine elective credits that have an industry or functional specialization. Common specializations include logistics, gaming and tourism, entrepreneurship, professional management and technological management. Additional specialties may be developed using courses in other colleges, independent studies, field projects or a thesis. (nine credits)

Integration (Required)

	Credits
BADM 781	3
	51

Master of Science or Master of Arts in Economics

The master of arts and master of science degree programs are designed to be terminal degree programs for individuals who seek

careers in applied economics. The programs are also valuable for individuals considering careers in finance, banking, or law, as well as other professions that require analytical and quantitative skills. The master of arts and master of science programs also provide excellent preparation for those who are considering a Ph.D. in economics, public policy or in a related field.

Applied economists are employed in both the private and public sectors, and are often involved in forecasting, market analysis, policy analysis and advisory activities.

Specific course requirements for degrees in economics include:

1. EC 721, 722
2. nine additional credits taken at the 700 level
3. a total of at least 24 credits of graduate-level courses
4. six credits of thesis work

The master of arts and master of science degrees both require a thesis, and the course work and thesis must be approved by the student's faculty advisory/examining committee. Each candidate's program of study must be approved by the student's departmental adviser and the College of Business Administration director of graduate programs. Students must also meet all university and college requirements for the master's degree.

For full admission into the master or arts or master of science program in economics, a student should complete 18 credits in economics, including intermediate microeconomics, intermediate macroeconomics, and money and banking. Students may enter the graduate programs in economics in either the fall or spring semesters.

The master's program may be completed in three or four semesters if the student maintains full-time status. The following is a typical schedule of courses for study at the master's level:

First Semester

	Credits
EC 721	3
Electives	6
700-level elective	3

Second Semester

	Credits
EC 722	3
Elective	3
700-level elective	3

Third Semester

	Credits
Thesis	6
700-level elective	3

Graduate Minor in Business Administration

Graduate students with majors outside the College of Business Administration who wish to minor in business administration should complete at least three courses that are relevant to their business interests (subject to the approval of the director of graduate programs), as well as any preparatory courses that may be necessary for prerequisites. For a minor in economics, a student at the graduate level must take at least 12 units in economics, including EC 721 and 722.

Footnotes

[1] Completion of nonbusiness requirements satisfy the university Core Curriculum.
[2] Managerial sciences department majors check department section for specific course requirements.
[3] Or an approved equivalent.
[4] University requirement. (ACT scores may also require a student to take ENGL 101 as a prerequisite for ENGL 102.)
[5] W T 202 may be corequisite with W T 203.
[6] May not include upper-division courses needed to meet the 12 credit requirements in the senior year.
[7] Students may meet the foreign language requirement by completing course No. 204 or No. 209 in any language.
[8] A maximum of three credits may be applied to major requirements from these courses.
[9] An equivalent graduate-level quantitative course may be substituted.

College of Education

Frank D. Meyers, *Dean*
Dean's Office: 100 Education Building, 784-6905

Departments of Instruction:

Counseling and Educational Psychology
Curriculum and Instruction
Educational Leadership

Objectives

The main goal of the College of Education is to prepare professional personnel to function effectively as teachers, guidance personnel and administrators in the challenging and demanding field of education.

A second major goal of the college is to stimulate in the education profession and the public a deeper interest in the promotion of good teaching practices and sound educational policies.

A third major goal is to contribute directly to the redefinition of educational goals and policies through research and development.

Support for maintaining these objectives is provided through the college departments of instruction, the Center for Learning and Literacy, the Learning and Resource Center, Simulation-Demonstration Facility, Early Learning Center (grades 1-3) and the Research and Educational Planning Center.

Accreditation

The College of Education is accredited by the Northwest Association of Secondary and Higher Schools and Colleges for all teacher education, undergraduate and graduate curricula. It is also accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary teachers and school service personnel, with the doctoral degree as the highest degree approved. These two accrediting bodies are recognized by the Council on Postsecondary Accreditation.

Programs

The College of Education offers two undergraduate degree programs—the bachelor of arts in education and the bachelor of science in education.

Master's degrees are offered with majors in counseling and educational psychology, educational leadership and elementary, secondary and special education.

Education specialist degrees are offered in counseling and educational psychology, curriculum and instruction and educational leadership.

Doctoral degrees are offered in counseling and educational psychology, curriculum and instruction (reading and special education options only) and educational leadership.

Licensure

By law all teaching licenses in Nevada are granted by the Nevada State Board of Education. Students in the College of Education enrolled in the integrated five-year course of study are at the same time meeting the specific licensure requirements of the State Board of Education.

Admission to Teacher Education Program

Effective July 1, 1988, students accepted into a teacher education program are required to complete an integrated five-year course of study, which begins in the freshman year and continues through the fifth year. Successful completion of the five-year program leads to a bachelor's degree at the end of four years and a Nevada teaching license at the end of the fifth year. This program includes a combination of undergraduate and graduate coursework. Students must contact an adviser in the department of curriculum and instruction regarding the course of study in the new program.

Before students may enroll in specific upper-division professional education courses and supervised internships, they must first be formally admitted to pre-professional standing in a specific teacher education program. Students who plan on pursuing a program leading to initial licensure must meet these requirements:

1. Complete the pre-professional standing admission criteria and approval form and return it to the dean's office, 100 Education Building.

2. Pass the Pre-Professional Skills Test in reading, writing and mathematics with a satisfactory score, established by the Nevada Department of Education.

Students may attempt the PPST a maximum of three times. Students failing to pass all portions of the PPST **are removed from the teacher education program.** Students who do not pass the first PPST test may retake the failed portion(s) at the next offering of the exam. After the second failure, the student must wait an academic year before taking the test for the final time. Students must take the PPST before the end of the sophomore year.

3. Attain pre-professional standing before admission to methods courses.

4. Students seeking admission to elementary education, special education, elementary/special education, or secondary education programs must have a 2.5 or higher grade-point average in all courses taken prior to receiving advanced standing. Those seeking admission to secondary education programs must earn a minimum 2.5 grade-point average in the major teaching field and a minimum 2.3 grade-point average in the minor teaching field. All students in the teacher education program must have a minimum 2.75 grade-point average in preprofessional core education courses.

5. Pass the speech and hearing test.

6. Be qualified in the professional judgment of the faculty.

Students seeking teacher licensure who are not enrolled in the College of Education must comply with the above requirements. They must also complete the requirements for supervised internship.

Students entering the College of Education with a baccalaureate degree should see a curriculum and instruction adviser immediately.

Program Completion Requirements

Candidates for the bachelor's degree in education and teacher licensure must satisfy these requirements:

1. Gain admission to the teacher education program.

2. Earn 128 credits or more in required and elective courses.

3. Complete 40 credits or more in courses numbered 300 or above.

4. Earn a 2.5 or higher grade-point average in the major teaching field and a 2.3 or higher grade-point average in the minor teaching field (secondary education).

5. Earn a grade-point average of at least 2.75 in courses taken in the College of Education and a minimum 2.50 grade-point average overall.

6. Meet all university requirements for fulfillment of core curriculum, total credits, grade-point average and resident credit.

7. Meet requirement for instruction in Nevada school law. This requirement is usually met by taking E L 101.

A maximum of 30 semester credits may be earned with satisfactory/unsatisfactory (S/U) grades, subject to the approval of the assigned education adviser.

Elementary/Special Education Teaching Curricula

English

	Credits
ENGL 101, 102, approved expository writing course	9
Approved literature course	3
	12

Fine Arts

	Credits
Core requirement	3
MUS 324, ART 342 and/or C I 433 (See adviser for details)	3 or 6
	6 or 9

Mathematics

	Credits
Core requirement	3
Approved electives	6
	9

Social Science

	Credits
W T 201, 202, 203	9
Social science core	3
	12

Science

	Credits
Biology (core requirement)	3
Physics (core requirement)	3
GEOL 101 or GEOG 103	3
Chemistry (core requirement) or CHS 471	3
	12

Physical Education

	Credits
RPED 350, 351, 352, or 451	3
	3

Capstone courses

	Credits
(See adviser for details)	6
	6

Preprofessional core

	Credits
C I 270, 271, 300, 310	10
CEP 330	3
E L 101	3
	16

Education Core

	Credits
C I 393, 410, 431, 432, 464, 468 or 469, 471	19
	19

Elementary Major

	Credits
C I 407 or ENGL 431	3
C I 463, 465, field experiences (six credits)	12
Area of concentration	15
	30

Special Education Major

	Credits
C I 313, 314, 315, 414, 417, 418	18
Area of concentration	12
	30

Dual Elementary/Special Education Major

	Credits
C I 313, 314, 315, 414, 417, 418, 463, 465; six credits field experiences and CI 407 or Engl 431	33
	33

Fifth-Year Core

	Credits
CEP 601	3
C I 605, 620, 634	10
C I 613 (dual majors only)	3
C I 550	2
C I 551 a, b, or d	12-16
	27-34

Bachelor's degree (minimum required): 128 credits
Bachelor's degree, plus certification: 155-162 credits

Secondary Education (Bachelor of Arts Degree)

Communication Skills and Humanities

	Credits
ENGL 101, 102, approved expository writing course	9
ENGL 235, 236, 281, 291, 292, 293	3
PHIL 211 or 213	3
SPCM 113	3
Fine arts elective from core curriculum	3
	21

Foreign Language

	Credits
FLL 203, 204	6
	6

Mathematics and Science

	Credits
Biological science course	3
MATH 120	3
Physical science course	3
	9

Professional Education—Undergraduate

	Credits
C I 350, 409, 432, 450	12
CEP 330, 400	6
E L 101	3
	21

Social Sciences

	Credits
Social science elective from core curriculum	3
W T 201, 202, 203	9
	12

Capstone courses

	Credits
(See adviser for details)	6
	6

Secondary Education (Bachelor of Science Degree)

Communication Skills and Humanities

	Credits
ENGL 101, 102, approved expository writing course	9
PHIL 213 or 224	3
SPCM 113	3
Fine arts elective from core curriculum	3
	18

Mathematics and Science

	Credits
Biological science course	7
MATH 124 or higher	3
Physical science course	7
	17

Professional Education—Undergraduate

	Credits
C I 350, 409, 432, 450	12
CEP 330, 400	6
E L 101	3
	21

Social Sciences

	Credits
HIST 281 or 282	3
W T 201, 202, 203	9
Social science elective from core curriculum	3
	15

Capstone courses

	Credits
(See adviser for details)	6
	6

Certification (Fifth Year)

Preprofessional standing in the College of Education is required for admission.

First Semester

	Credits
C I 500-level course (teaching methods)	3
C I 500-level course (teaching methods)	3
C I 604	3
C I 615 or CI 639	3
C I 620	3

Second Semester

	Credits
C I 551	12

Foreign language majors and minors must have demonstrated oral and written proficiency in their language for admission to the fifth-year program. Contact the foreign languages and literature department for details.

English majors and minors must check with their curriculum and instruction adviser concerning required English courses not included in major and/or minor.

Six units of approved university core capstone courses are required.

Secondary Teaching Field

Students who plan to teach in junior and senior high schools must complete one major and at least one minor teaching field. Two teaching minors are recommended, especially for students planning to teach in junior high schools.

Students must select major and minor teaching fields from the list below. In general, it is expected students will choose their teaching fields during the sophomore year, although this decision may be made at the beginning of the freshman year. Each student is assigned an adviser from the curriculum and instruction department and the major and minor teaching fields. Outlines of the departmental and interdepartmental curricula requirements are available for major and minor teaching fields listed below.

Secondary Education

(Grades 7-12)

Major Teaching Fields

An outline of specific requirements for each field should be obtained from the curriculum and instruction department.

Agriculture	Journalism
Art	Mathematics
Biological Sciences	Music
Business Education	Physical Education
Chemistry	Physical Science
English	Physics
French	Political Science
General Science	Social Studies
German	Spanish
Health Education	Speech Communication
History	Theatre
Home Economics	Trade and Industrial Education
Industrial Arts	

(The student should secure adviser's approval before beginning a major or minor.)

Minor Teaching and Supporting Fields

An outline of specific requirements for each field should be obtained from the curriculum and instruction department.

Agriculture	Journalism
Anthropology	Latin
Art	Mathematics
Biological Sciences	Music
Business Education	Occupational Education
Chemistry	Physical Education
Computer Education	Physical Science
Earth Science	Physics
Economics	Psychology
English	Political Science
English as a Second Language	Reading
General Science	Recreation
Geography	Russian
German	Social Studies
Health Education	Sociology
History	Spanish
Home Economics	Special Education
Industrial Arts	Speech Communication
Italian	Theatre

Supervised Internship in Teacher Education

Supervised internship experiences are provided in the public schools. Students are assigned to cooperating teachers employed by a school system.

Staff members of the College of Education are responsible for the supervision of interns, making regular visits to observe the student's teaching, and holding conferences with the student and the cooperating teacher concerning the internship experience.

Prerequisites for Supervised Internship

Only those students who have demonstrated scholarship, dependability and a commitment to the profession of education are accepted for supervised internship. The failure on the part of the student intern to meet any requirements may result in the immediate forfeiture of internship privileges.

Applicants for supervised internship must:

1. Achieve preprofessional standing in a teacher preparation program.
2. Maintain an overall grade-point average of 2.75 or higher in professional education courses and a cumulative grade-point average of 2.5 or higher in all courses (elementary, special, elementary/special or secondary education).
3. Maintain a 2.5 or higher grade-point average in the major teaching field and a 2.3 or higher grade-point average in the minor teaching field.
4. Test negative in a tuberculosis screening immediately prior to beginning internship.
5. Pass the professional knowledge and subject matter sections of the National Teachers Examination with satisfactory scores, established by the Nevada Department of Education, prior to applying for internship.
6. Be qualified in the professional judgment of the College of Education faculty.

Admission to supervised internship is secured through the director of laboratory experiences for either the elementary/special education or secondary teaching field. **Applications for the fall semester must be received by March 15 and applications for the spring semester must be received by Sept. 15.** A student must have completed a minimum of 15 prescribed semester credits at the university prior to admission to student internship.

Graduate Programs

Master's Degree

Graduate students may major in counseling and educational psychology, educational leadership, or elementary, secondary and special education. The seven specializations available in counseling and educational psychology are:

Elementary
Secondary
College
Community
Marriage and family
Aging
Career development

Three specializations are offered in the educational leadership major. The specializations are:

Elementary or secondary principalship
School administration
The superintendency

In the elementary, secondary and special education majors, there are a total of 10 specializations. The study specializations are:

Reading
Early childhood education
Computer education
Computer education/media
Media/library science
Occupational education
Behavior disorders
Early childhood special education
Learning disabilities
Mental retardation

The specific curriculum requirements are adapted to the professional needs of the student. Students should not enroll in any graduate-level course without first securing the approval of the department that such a course is acceptable toward a selected major or minor.

Generally, students are advised to enroll in improvement courses for in-service education on the graduate level. These courses are also offered in extension or branch centers, workshops, short conferences, evening schools and individual problem courses by arrangement. Inquiries are encouraged.

In order to earn the master of arts, master of science and master of education degrees, students must complete 30 to 42 credits of approved courses with a major in education, as well as a six-credit thesis, for a total of 36 to 48 credits. A nonthesis master of arts or master of science degree option, which includes the completion of 36 to 48 credits, may also be selected. Program outlines can be obtained from each of the three instructional departments in the College of Education. All degree candidates are required to complete a research course and a minimum six credits of courses outside the selected department of study.

A maximum of six graduate credits of S/U grades may be applied toward a master's degree requiring at least 36 semester credits.

Each candidate for the master of education degree must have completed a minimum of two academic years of satisfactory teaching or administrative experiences.

In addition to admission requirements specified by each department, applicants must be qualified in the professional judgment of the College of Education faculty.

Education Specialist (Ed.S.) Degree

The education specialist degree is a 32- to 33-credit, sixth-year degree program beyond the master's degree. Majors are offered in counseling and educational psychology, curriculum and instruction and educational leadership. Degree candidates should consult the department in which the desired major field is offered for more information.

Entrance Requirements

1. Earn an accredited and relevant master's degree.
2. Following the completion of an accredited master's degree program, candidate must gain satisfactory experience relevant to the master's degree.
3. Maintain a grade-point average of at least 3.5 in the master's degree program.
4. Earn acceptable scores on either the Graduate Record Examinations (GRE) or the Miller Analogies Test.
5. Gain departmental acceptance (standards may be higher than those listed in the university requirements).
6. Qualify in the professional judgment of the College of Education faculty.
7. Gain acceptance from the College of Education's Graduate Studies Committee and from the college dean.
8. Gain acceptance from the Graduate School.

Program Completion Requirements

1. A minimum of 32 graduate credits beyond the related master's degree is required.
2. Six post-master's or 15 post-baccalaureate acceptable credits must be obtained in courses taken outside the department.
3. At least 16 of the total credits earned must be taken in the department offering the degree, and at least 16 of the total credits earned must be taken in courses at the 700 level.
4. A maximum of six post-master's credits taken prior to admission may be applied toward the education specialist degree upon admission.
5. A maximum of six post-master's credits taken off campus or through continuing education may be applied toward the degree.
6. A maximum of three graduate credits of S/U grades may apply toward the education specialist degree.
7. An examining/guidance committee is appointed for each student in the Ed.S. degree program. The committee is comprised of four members of the graduate faculty: two are members of the department in which the student is pursuing the degree; one is from another department within the college and one faculty member is selected from a department outside the College of Education.
8. A research project or its equivalent must be completed. The form of the project may vary, but it must represent a contribution to the professional field in which the degree is obtained.

9. Requirements for the degree must be completed during a period not to exceed six years.

Doctor of Education (Ed.D.) Degree

Candidates for the doctor of education degree may major in counseling and educational psychology, curriculum and instruction (reading and special education options only) and educational leadership.

Applicants for the doctor of education degree must meet general university requirements for admission, Graduate School requirements, College of Education requirements and departmental requirements.

The degree program includes a minimum of 90 semester credits beyond the baccalaureate degree, including 12 credits of dissertation. A maximum of six graduate credits of S/U grades may apply toward the doctor of education degree. A residency requirement of at least two full-time summer or regular semesters with a minimum of 12 graduate credits must be completed.

Degree candidates should consult the department in which the desired major field is offered for more information.

Entrance Requirements

Each applicant must satisfy the regular graduate admission requirements listed for doctoral programs and the following special requirements:

1. Complete at least two full years of successful professional experience in a field appropriately related to the chosen major.
2. Hold a master's degree from a regionally accredited institution in an area appropriately related to the chosen major.
3. Gain recommendation by the graduate faculty of the department in which the major is offered and gain approval by the College of Education Committee for Graduate Programs.

Program Requirements

The standard doctorate graduate regulations apply with these modifications:

Full-Time Study: At least two full-time summer or regular semesters must be completed with a minimum of 12 graduate credits for each semester. A maximum of three credits of dissertation, independent study or workshop credits may be applied per full-time term. This requirement must be satisfied *after* admission to the doctoral program. (Special rules apply for curriculum and instruction, special education option. Consult an adviser for details.)

Program: A minimum of 90 semester credits beyond the baccalaureate degree, including 12 credits of dissertation, must be completed. In addition to 30 credits earned at the master's-degree level, a maximum of 16 relevant credits in an accredited program beyond the master's degree may be applied to the approved Ed.D. program. There are also specific course requirements and qualifying, comprehensive and final examinations.

Dissertation: The dissertation must involve scholarly and practical consideration of a professional problem. The research should contribute to an improvement in educational practices or to the body of educational theory. Dissertation topics may include:

1. practical educational experiences
2. directed field experiences
3. a scholarly study of an educational problem involving theoretical implications.

Foreign Language: There is no foreign language requirement.

Fees: All course credits are assessed at the regular fee schedule in effect at the time of registration.

COUNSELING AND EDUCATIONAL PSYCHOLOGY (CEP)

Department Office: 213 Education Building, 784-6637

The department offers graduate courses in the following specializations:

Counseling
Guidance
Educational psychology
School psychology for kindergarten through 12th grade
College student development
Adult vocational counseling
Community counseling
Marriage and family counseling

Adapted sequences are offered to provide the academic structure needed to meet all Nevada licensure requirements for professionals within the marriage and family, pupil- and student-personnel teams. Entrance requirements and suggested program patterns are available by inquiry. The admission and retention of students in all programs is subject to the professional judgment of the department faculty.

CURRICULUM AND INSTRUCTION (CI)

Department Office: 206 Education Building, 784-4961

Elementary and Special Education

Undergraduate majors are offered in elementary, special and elementary/special education. Completion of the elementary/special education program qualifies students for kindergarten-sixth grade teaching licensure and a kindergarten-12th grade special education endorsement from the Nevada Department of Education. A master's degree student may major in elementary or special education. Graduates who hold a master's degree can also qualify to receive an elementary teaching license or a resource room endorsement from the Nevada Department of Education.

Secondary Education

At the undergraduate level, students choose a major and at least one minor teaching field to complete their degree. Major and minor teaching fields include a variety of subjects in the humanities, sciences and applied arts. For a complete list, refer to the "Secondary Education" section in this chapter. Specific requirements are available in the department office.

A major in secondary education is offered at the master's level only. Department faculty will assist graduate students in planning balanced programs suited to their educational objectives.

Media and Library Science Minor

A minor in instructional media/library science is offered for those individuals who are interested in the utilization, coordination and administration of media materials. The minor provides relevant training for pre- and inservice educational technologists, librarians, teachers, administrators and other workers who are involved with the storage and utilization of learning/communication materials.

Note: This program is not designed to prepare teachers or other school personnel with licensure in the media/library science specialty.

EDUCATIONAL LEADERSHIP (EL)

Department Office: 108 Education Building, 784-6518

The department supports teacher preparation at the undergraduate level by offering courses dealing with the legal, historical, social and philosophical foundations of education. Graduate courses are offered leading to the master of arts, master of education, education specialist and doctor of education degrees with a major in educational leadership. After completing the appropriate courses, the graduate student will meet licensure requirements for administrative positions in Nevada's public schools.

Service Divisions

Center for Learning and Literacy

The Center for Learning and Literacy organizes and promotes teaching and research in literacy, provides opportunities for students to develop competence in diagnosing and correcting reading and learning disabilities, and provides diagnostic and tutorial services for those people with reading and learning disabilities.

Certified teachers or prospective teachers also diagnose and correct the learning and reading problems of students at the facility. The center is equipped to demonstrate diagnostic and remedial techniques.

The programs offered at the Center for Learning and Literacy prepare teachers in remedial education and aid those students who are pursuing an advanced degree in the field.

For more information, contact the Center for Learning and Literacy, 203 Education Building, 784-4951.

Learning and Resource Center

The Learning and Resource Center in the Education Building provides instructional media facilities in many areas. Included among the facilities are the:

Media library—a cooperative effort with the Washoe County School District that features:

An extensive children's book collection
Course-related books and educational materials
Resource files
Audio and video tapes
Filmstrips
Study prints
Slides
Media kits
Apple II microcomputers

Media production facility—mounting and laminating pictures, lettering, duplication, production of overhead transparencies, book binding and use of photographic copy stand.

Instructional enhancement—Microteaching facilities, audio and video tape dubbing and editing and consultation in instructional design.

The Learning and Resource Center is open regularly from 8 a.m. to 8 p.m., Monday through Thursday and from 8 a.m. to 4:30 p.m. on Friday. Audiovisual equipment is available for use in the College of Education. Materials in the media production facility are available to university faculty and students at nominal costs.

For more information, contact the Learning and Resource Center, 249 Education Building, 784-4971.

Nevada Cooperative Extension

The College of Education, through its department of educational leadership, provides expertise to Nevada Cooperative Extension community-based faculty in the areas of curriculum development, program design and strategies, and evaluation. The department helps educate many of the state's citizens through its work with the cooperative extension program.

Nevada Project LEAD

Nevada Project LEAD supports the state's practicing school administrators by providing training opportunities, materials to improve leadership and statewide network development. Funded by a federal grant and contributions from Nevada's school districts, the project focuses on development of leadership skills and current issues of local and national concern.

Research and Educational Planning Center

The Research and Educational Planning Center conducts sponsored research, development and training projects of state and national significance in education and related social science areas. The center also provides consultation and technical services to Nevada school districts and research-related technical assistance to the College of Education faculty, as well as faculty from other university colleges and departments.

The Nevada University Affiliated Program, a campus-wide service administered through REPC, offers the following features:

1. multidisciplinary training for judges, human service professionals, paraprofessionals and parents;
2. model exemplary services in audiology, speech pathology, behavioral analysis and multidisciplinary evaluation;
3. information on developmental disabilities and service options;
4. technical assistance for research and other essential projects;
5. relevant research and evaluation studies.

College of Engineering

Jon A. Epps, *Dean*
Dean's Office: 132 Scrugham Engineering-Mines, 784-6925

For footnote explanation, see Page 109

Departments of Instruction:

Civil engineering
Electrical engineering
Mechanical engineering

Objectives

Engineers apply a knowledge of science, mathematics, logical decision making and creativity to the invention and design of those things that are needed by society.

The various engineering curricula provide the necessary basic and advanced knowledge to prepare students for positions of responsibility and leadership in their fields of interest, now and in the future. Students are prepared to meet the technical and ethical demands of the profession and to become informed citizens in the community.

Accreditation

The civil, electrical and mechanical engineering programs for the baccalaureate degree are accredited by Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (EAC/ABET). Faculty members maintain affiliations with their professional societies and various industrial and governmental organizations that help keep them current in their fields, and provide stimulation for both undergraduate and graduate research projects.

Cooperative Programs

Several cooperative programs are available, in which students may gain funds and experience during the summer (three months), a semester (eight months), or for an academic year (15 months). For details, refer to the undergraduate curriculum information in each department and inquire at the dean's office.

Degree Programs

Baccalaureate Degrees: upon satisfactory completion of the prescribed curriculum, engineering students become candidates for the degree of bachelor of science in civil engineering, electrical engineering, engineering physics or mechanical engineering.

Graduate Degrees: The degree of master of science and doctor of philosophy may be earned in civil, electrical, mechanical engineering and hydrology/hydrogeology, subject to the general requirements of the university, the department concerned and the Graduate School. A professional degree in construction engineering is offered through the civil engineering department.

Minor in Engineering
(For baccalaureate engineering students only)

The following requirements apply to the minor program:

1. At least 18 credits of formal courses must be completed in the minor department, 12 credits of which are upper-division courses approved by the chairman of both the minor and major departments.
2. The 12 credits of upper-division courses in the minor department must be in addition to the credits completed in upper-division required courses in the major department. Course requirements are specified by the curriculum of the major department.

Engineering as a Preparatory Degree

Engineering majors currently have one of the highest rates of acceptance to U.S. medical schools. They also have an advantage over other majors in gaining acceptance to architecture, business, dental and law schools. However, engineering students may need to complete additional courses to gain the full benefits of their degree. Students interested in using engineering as a preprofessional degree should consult with the assistant dean.

College of Engineering Admission

Applicants to the College of Engineering with a minimum high school grade-point average of 3.3 or an ACT mathematics test score of at least 28 (minimum SAT mathematics test score of 580) may select the engineering major of their choice. Students who do not meet this criteria must earn acceptance to an engineering major by enrolling in the College of Engineering as a premajor (i.e., pre-civil, pre-electrical or pre-mechanical engineering). Premajor engineering students must complete a **related, freshman-year engineering curriculum,** as listed in this catalog, with at least a 2.5 grade-point average to be admitted into a degree-granting engineering program.

Mathematics and Science Entrance Requirements

In addition to the university requirements for admission to the baccalaureate programs (see Admission section of this catalog), the College of Engineering specifically recommends the following entrance requirements for its degree candidates: four units of mathematics (including trigonometry) and three units of science, including physics, chemistry and a half year of computer programming. Advanced placement classes in mathematics and science are particularly valuable.

Advisement

All students must receive advisement from a faculty member assigned by the department. Advisers will assist students in maintaining the academic standards needed to complete the degree requirements for their chosen program. Undeclared students will be advised by the assistant dean. Students *are not* permitted to attend engineering classes without prior advisement from an engineering faculty representative.

Transfer Students

A student from outside the University of Nevada, Reno, who wishes to be accepted into the College of Engineering must follow general university policy for admission to advanced standing. Transfer applicants are considered for admission based on their qualifications and the availability of space in the specific program they have applied for.

Baccalaureate Degree Requirements

Students who are not subject to core curriculum requirements should consult with their academic adviser. *The university core curriculum requirements are satisfied by engineering core and departmental requirements.* Transfer students may meet core and departmental requirements with similar course work from other colleges and universities.

In any field of specialization, the degree requirements consist of the general university requirements, the engineering core and the departmental requirements. To satisfy degree requirements, students must earn a total of at least 129 to 132 semester credits.

Engineering students may register for a maximum of nine satisfactory/unsatisfactory (S/U) credits in any courses, except those courses specifically required in engineering, mathematics, or science. The nine S/U credit restriction also applies to those courses classified as technical or science electives.

In addition to the general university requirement of a C average for graduation, engineering students must also maintain a C average in the following courses:

All engineering courses offered by the college;
All basic science courses;
All science electives;
All technical electives.

Candidates for baccalaureate degrees from the College of Engineering may not use two-year technology courses to fulfill the grade requirement for engineering courses. All engineering students must also take the national EIT examination prior to graduation.

Field Trips: Course requirements in the College of Engineering may include field trips as an integral part of the educational experience. Field trips may be scheduled by the college's student organizations and may also be organized by the college's faculty to meet educational goals and needs.

Application for Graduation

Major program curriculum requirements make it necessary to offer many of the required courses in alternate semesters only. Due to this restriction, additional time is needed to assist students in planning properly for graduation. All applications for graduation in the College of Engineering must be filed in the dean's office 12 months prior to the anticipated date of graduation. It is each student's responsibility to file the application by this date.

CIVIL ENGINEERING (CE)

Department Office: 105 Scrugham Engineering-Mines, 784-6937

Undergraduate Curriculum

The objective of the degree program in civil engineering is to give students an educational background that will allow them to enter the profession of engineering. Civil engineering includes the planning, analysis, design and construction of physical systems involving structures, soils, mapping, water resources, transportation, hydrology, water supply, wastewater disposal and water quality management. The curriculum is designed to give an introduction to these disciplines. Students with an interest in environmental engineering can pursue an undergraduate track which emphasizes additional chemistry and microbiology classes.

Two cooperative training programs are available for civil engineering students. These programs are offered jointly with the civil engineering department and two sponsoring agencies: the Nevada Department of Transportation and the Associated General Contractors of Nevada. Both programs offer financial assistance to the student through summer employment with the participating organizations. For further information, contact the director of civil engineering cooperative training programs.

The Nevada chapter of the Associated General Contractors supports a fractional chaired professorship in the department. This support allows the department to offer an undergraduate course in construction engineering.

The suggested curriculum for the bachelor of science in civil engineering degree is listed below:

Freshman Year – First Semester

	Credits
C E 141	3
C E 140	1
CHEM 101	4
ENGL 101	3
MATH 181	4
	15

Freshman Year – Second Semester

	Credits
C E 101	2
ENGL 102	3
MATH 182	4
PHYS 201	3
PHYS 204	1
Social science core curriculum course	3
	16

Sophomore Year – First Semester

	Credits
C E 241	3
C E 243[1]	3
MATH 281	4
PHYS 202	3
PHYS 205	1
W T 201	3
	17

Sophomore Year – Second Semester

	Credits
C E 368	1
C E 372	3
MATH 285	3
MECH 367	3
MECH 371	3
W T 202	3
	16

Junior Year – First Semester

	Credits
C E 364	2
C E 375	3
C E 389	2
C E 390	3
ENGR 201	3
MECH 242	3
	16

Junior Year – Second Semester

	Credits
C E 376	2
C E 381	3
C E 388	2
C E 471[2]	3
C E 489	3
C E 492	4
	17

Senior Year – First Semester

	Credits
C E 366	3
C E 484	3
C E 485	3
W T 203	3
Humanities/social science elective	1
Restricted science elective[2]	3
	16

Second Semester

	Credits
C E 491	2
E E 201	3
Fine arts core curriculum course	3
Technical elective[2]	9
	17
Total credits for a bachelor of science in civil engineering	130

Students enrolled in civil engineering cooperative programs are required to take a one-credit seminar course (C E 250, 350, 450) at the appropriate level each summer they are enrolled in the program. These credits are in addition to the total required for other engineering students.

Class attendance is mandatory in all civil engineering courses. Civil engineering students who need to repeat courses to meet the minimum grade-point average requirement set by the university or the college are allowed to repeat only those courses in which they received a grade of "D."

Professional Degree in Construction Engineering

The department offers a postbaccalaureate professional degree in construction engineering. The program is funded by the Northern Nevada Division of the Associated General Contractors. Students entering the program must have a bachelor of science degree from an ABET-accredited civil engineering program. The degree program is designed to be completed in two semesters. For more information, contact the AGC professor, civil engineering department.

Graduate Program

Continuing education beyond the bachelor's degree is a necessity for prospective civil engineering professionals. The master's degree programs are a recommended course of study for civil engineers.

The department offers programs leading to the master of science in civil engineering degree and the doctor of philosophy degree in engineering. In consultation with an adviser, students take courses in the general civil engineering field or with specialization in structures, soil mechanics and foundations, highway materials, or environmental engineering. Both Plan A (requiring the completion of a thesis) and Plan B (nonthesis) options are available for the master of science degree program. Specific departmental requirements for the masters and doctorate programs may be obtained from the civil engineering department.

The department also participates in the interdisciplinary master of science degree with a major in land use planning policy or hydrology/hydrogeology in cooperation with several other departments. At the doctorate level, the department participates in an interdisciplinary program in hydrology/hydrogeology. For further information about the programs, refer to the Interdisciplinary and Special Programs section of this catalog.

Teaching and research assistantships are available in civil engineering. Applications for assistantships are due by April 15 for the fall semester and by Oct. 15 for the spring semester.

ELECTRICAL ENGINEERING (E E)

Department Office: 235 Scrugham Engineering-Mines, 784-6927

Undergraduate Curriculum

Electrical engineering is a diverse and dynamic area of study. The undergraduate curriculum is specifically formulated with three goals in mind:

1. to ensure that graduating engineers are well-studied in those areas that form the foundation of all electrical engineering endeavor;
2. to ensure that the curriculum, and hence our students, keep pace with changing technologies;
3. to ensure that the curriculum remain consistent with electrical engineering curricula at other accredited institutions.

In reaching these departmental goals, senior electrical engineers must satisfy a breadth and depth requirement in the following six areas:

1. Communications
2. Computer
3. Control
4. Electronics
5. Fields
6. Power

The department of electrical engineering is fully accredited by the Accredition Board for Engineering and Technology (ABET) and cooperates with local industry to offer a number of summer internships for qualified undergraduate electrical engineers. The suggested curriculum for the bachelor of science in electrical engineering degree is listed below.

NOTE: The professional EIT examination, administered by a state board of engineering registration, must be taken by all electrical engineering students before graduation during the senior year of study.

Freshman Year – First Semester

	Credits
CHEM 101	4
ECON 102	3
ENGL 101	3
MATH 181	4
Fine arts core curriculum course	3
	17

Freshman Year – Second Semester

	Credits
C S 183	4
ENGL 102	3
MATH 182	4
PHYS 201	3
PHYS 204	1
	15

Sophomore Year – First Semester

	Credits
E E 231	3
MATH 281	4
MECH 241 or C E 241	3
PHYS 202	3
W T 201	3
	16

Sophomore Year – Second Semester

	Credits
E E 200	1
E E 201	3
E E 202	2
E E 333	3
MATH 285	3
PHYS 203	3
W T 202	3
	18

Junior Year – First Semester

	Credits
E E 301	3
E E 320	1
E E 321	3
E E 361	3
MECH elective (242 or 371)	3
MATH 352	3
PHYS 206	1
	17

Junior Year – Second Semester

	Credits
E E 330	1
E E 336	3
E E 351	3
E E 380	1
E E 381	3
E E 386	3
ENGR 201	3
	17

Senior Year – First Semester

	Credits
E E 490	2
W T 203	3
Humanities or social science elective	3
Technical electives	8
	16

Senior Year – Second Semester

	Credits
E E 491	4
Science or technical elective	3
Technical electives	9
	16

Total credits for a bachelor of science in electrical engineering 132

NOTE: E E 200, 201, 301, 333 are offered every semester; E E 231, 320, 321, 361 are offered during the fall semester; E E 202, 330, 336, 351, 380, 381, 386 are offered during the spring semester.

Areas of Concentration

Senior-year technical electives consist of six courses (18 credits) to be selected from at least four of the following areas of concentration: *Communication:* E E 481, 482, 484; *Computer:* E E 431, 434, 437, 439; *Control:* E E 486, 487; *Electronics:* E E 422, 423, 424, 426, 427, 428; *Fields:* E E 450, 451, 452, 455, 456, 458; *Power:* E E 461, 463, 466, 467, 468.

Engineering Physics

The engineering physics program, administered by the electrical engineering department, leads to the bachelor of science in engineering physics degree. The program is designed for the student who desires a background in engineering science, based on a firm foundation of physics, as well as an introduction to computer science. The program is also for students who would like to pursue graduate studies in physics. The curriculum provides for 18 credits of humanistic-social electives, a requirement for accredited engineering programs.

Freshman Year – First Semester

	Credits
C S 183	4
CHEM 201	4
ENGL 101	3
MATH 181	4
	15

Freshman Year – Second Semester

	Credits
E E 231	3
ENGL 102	3
CHEM 202	4
MATH 182	4
PHYS 201	3
PHYS 204	1
	18

Sophomore Year – First Semester

	Credits
C S 283	3
MATH 281	4
MATH 352	3
PHYS 202	3
PHYS 205	1
W T 201	3
	17

Sophomore Year – Second Semester

	Credits
C S 333	3
E E 201	3
MATH 285	3
PHYS 203	3
PHYS 206	1
W T 202	3
	16

Junior Year – First Semester

	Credits
E E 301	3
E E 321	3
PHYS 351	3
PHYS 361	3
PHYS 363	1
W T 203	3
	16

Junior Year – Second Semester

	Credits
E E 386	3
PHYS 352	3
PHYS 362	3
PHYS 364	1
Fine arts core curriculum course	3
Science or technical elective	3
	16

Senior Year – First Semester

	Credits
PHYS 421	3
PHYS 425	3
PHYS 473	3
Social science core curriculum course	3
Science or technical electives	5
	17

Senior Year – Second Semester

	Credits
E E 491	4
PHYS 422	3
PHYS 426	3
PHYS 474	3
Elective	5
	18

Total credits for a bachelor of science in engineering physics degree 132

Graduate Programs

It is strongly recommended that prospective electrical engineering professionals take at least one year of graduate study. Both the undergraduate and graduate curricula at the university are designed to offer students the range of education needed for leadership in the profession, as well as knowledge of the physical sciences and basic professional techniques.

The electrical engineering department offers graduate programs leading to both the master of science and the doctor of

philosophy degrees in electrical engineering. Primary areas of focus in the department include: image and signal processing, electromagnetics and microwaves, and power.

Graduate course work and research opportunities are available in the following specializations:

- Acoustics
- Neural networks
- Computer design and applications
- Synthetic aperture radar simulation
- Biomedical image processing
- Microprocessor design and applications
- Antenna measurement and design
- Radar cross section measurement
- Microwave devices and distribution systems
- Numerical electromagnetics and materials characterization
- Optical fiber communications and sensors
- Microwave integrated circuits
- Power system simulation, planning and protection
- Power electronics
- Electric drives
- Control systems

General requirements for graduate degrees are determined by the Graduate School and are listed in the Graduate School section of this catalog.

Master's degree candidates must select a graduate committee before or upon the completion of nine credit hours. The graduate student's committee recommends specific programs of study based on the needs and interests of the student. Both Plan A (requiring the completion of a thesis) and Plan B (nonthesis) study options are available in the master of science degree program.

Doctor of philosophy degree candidates must successfully complete a written qualifying examination administered by the department. The examination includes separate exams in four of six major study areas in electrical engineering. Additionally, the Ph.D. candidate must pass a final comprehensive exam administered by his or her committee.

A number of teaching and research assistantships are typically available in electrical engineering. They are awarded on a competitive basis. For more information, contact the department chairman or the Graduate School dean's office.

MECHANICAL ENGINEERING (MECH)

Department Office: 106 Palmer Engineering, 784-6931

Mechanical engineers work in all segments of the economy. Challenging opportunities exist in both heavy and light manufacturing, natural resource development, utilities, aerospace industries, medicine, management and government.

The undergraduate curriculum is broadly based to accommodate a variety of career goals. Students take a core of required courses in engineering, the humanities, mathematics and science, as well as supplementary elective courses. The courses introduce basic engineering science and design concepts and provide students with the opportunity to develop specific career interests.

General Requirements

	Credits
English (writing):	
ENGL 101, 102; ENGR 201	9
Mathematics and Science:	
CHEM 101; MATH 181, 182, 281; MECH 299 or MATH 285; MECH 402; PHYS 201, 202, 204, 205; three-credit mathematics/ science elective	33
Humanities and Social Sciences:	
ECON 102; W T 201, 202, 203; three-credit fine arts elective; three-credit humanities elective	18
Engineering Science and Design:	
C E 372; E E 200, 201; MECH 150, 201, 241, 242, 250, 310, 351, 367, 371, 391, 410, 452, 461, 465, 491; METE 350; six credits restricted elective	63
Six credits mechanical engineering electives	6

The mechanical engineering curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET). The program is designed so that required courses are used to meet minimum ABET requirements for engineering design and engineering science content. The mechanical engineering curriculum meets or exceeds all university core curriculum requirements.

Beacuse many upper-division mechanical engineering courses have strict prerequisites, it is important that courses are completed in the order listed below. Students who do not meet prerequisites for MATH 181 should attend summer school prior to their first semester.

The three-credit math/science elective may be any science course or any upper-division math course.

Students enrolled in mechanical engineering cooperative programs may take a one-credit course (MECH 198, 298, 398, 498) at the appropriate level each academic period in which they are enrolled in the program. These credits are in addition to the total required for other mechanical engineering students.

Note: Students are required to consult with their faculty adviser prior to registration.

Freshman Year – First Semester

	Credits
CHEM 101	4
ECON 102	3
ENGL 101	3
MATH 181	4
	14

Freshman Year – Second Semester

	Credits
ENGL 102	3
MECH 150	3
MATH 182	4
PHYS 201	3
PHYS 204	1
Fine arts elective	3
	17

Sophomore Year – First Semester

	Credits
MECH 201	3
MECH 241	3
MATH 281	4
METE 350	3
PHYS 202	3
PHYS 205	1
	17

Sophomore Year – Second Semester

	Credits
C E 372	3
ENGR 201	3
MECH 242	3
MECH 250	3
MECH 299 or MATH 285	3
	15

Junior Year – First Semester

	Credits
E E 200	1
E E 201	3
MECH 351	4
MECH 367	3
MECH 371	3
MECH 402	3
	17

Junior Year – Second Semester

	Credits
MECH 310	4
MECH 391	3
MECH 461	3
W T 201	3
Mechanical engineering restricted elective	3
	16

Senior Year – First Semester

	Credits
MECH 410	3
MECH 465	3
MECH 491	2
W T 202	3
Fine arts core curriculum course	3
Mechanical engineering restricted elective	3
	17

Senior Year – Second Semester

	Credits
MECH 452	4
W T 203	3
Mechanical engineering electives	6
Math/science elective	3
	16

Total credits required for a bachelor of science in mechanical engineering 129

Graduate Programs

The department currently offers the master of science and doctor of philosophy degrees in mechanical engineering. The department does not have a language requirement for the Ph.D degree.

The program of courses and research for both the master's and doctoral degrees is tailored to the background, needs and interests of the individual student.

Both Plan A (requiring the completion of a thesis) and Plan B (nonthesis) master's degree programs are available. All master's degree candidates are initially accepted into Plan B, but may be invited to complete Plan A in cooperation with a faculty research adviser.

Incoming candidates for the doctoral degree are required to take the Ph.D. Qualifying Examination at the earliest possible date once they begin their studies. The exam is offered annually in February.

Graduate-level students in Plan A are eligible to apply for teaching assistantships.

Current areas of research specialization include:

- Laser anemometry
- Heat transfer augmentation
- Fluid-solid interaction
- Viscoelasticity
- Fluid mechanics
- Temperature control of electronic devices
- Thermodynamics
- Solar energy collection and systems
- Materials engineering
- Mechanics of fiber-reinforced composites
- Smart materials
- Superconductivity
- Manufacturing processes

For more information, refer to the Graduate School section of this catalog or contact the department chair.

Footnotes

[1] C E 243 is a prerequisite for all 300-level courses.

[2] Students electing to take the environmental option take CHEM 102 for the restricted science elective, BIOL 251 instead of C E 471 and CHEM 142 instead of one technical elective. The remaining technical electives are C E 497 and 499.

College of Human and Community Sciences

Jean L. Perry, *Dean*
Dean's Office: 101 Sarah H. Fleischmann Building, 784-6977

Departments of Instruction:

Community Health Sciences
Human Development and Family Studies
Nutrition
Recreation, Physical Education and Dance
School of Social Work

Objectives

The college is composed of faculty whose primary focus is on the needs of individuals and families over the lifespan and across all social strata and income levels. The course of study emphasizes the human dimension in community life. The topics addressed include parenting, aging, communicating and maintaining individual health and fitness. The college's mission is excellence in interdisciplinary undergraduate and graduate preparation, research and service to the community. There are four university-wide centers in the college: the Child and Family Research Center, the Geriatric and Gerontology Center, the Health Career Advisement Center and the Senator Alan Bible Center for Applied Research.

Degree Programs

The college offers the following degree programs:

Baccalaureate degrees: a.) bachelor of science with majors in health education, human development and family studies, human ecology, nutrition, physical education, predentistry, premedicine, prephysical therapy and recreation; b.) bachelor of arts with majors in physical education, recreation and social work.

Master's degrees: master of science with majors in human development and family studies, nutrition and physical education; b.) master of social work.

COMMUNITY HEALTH SCIENCES (CHS)

Department Office: 215 Sarah H. Fleischmann Building, 784-4930

Undergraduate Degree: bachelor of science
Majors: health education, predentistry, premedicine, prephysical therapy

The department coordinates education for the health-related fields of health education, predentistry, premedicine and prephysical therapy. The program emphasizes a broad-based education in the physical sciences as well as a component of biomedical ethics, communication skills, humanities and health.

Career Potential
In addition to the previously listed preprofessional majors, community health sciences provides preparatory courses for careers as a chiropractor, optometrist, pharmacist, podiatrist, public health practitioners and in other related fields. The health education program prepares students for careers as community health educators, health agency program planners and health teachers.

Health Career Advisement Center
In addition to seeking advice from their academic advisers, students planning a career in any of the health professions should consult with the director of the Health Career Advisement Center. The office is a centralized resource for all university students interested in health careers. The director can provide students with information on many career opportunities and options, as well as information about the health-related degree programs at the University of Nevada, Reno and other schools. The office has up-to-date information about professional school admission requirements and applications for national admission testing. For more information, call 784-4939.

HUMAN DEVELOPMENT AND FAMILY STUDIES (HDFS)

Department Office: 212 Sarah H. Fleischmann Building, 784-6490

Undergraduate Degree: bachelor of science
Major: human development and family studies
Minor: human development and family studies
Graduate Degree: master of science
Major: human development and family studies

The degree program addresses the quality of life for individuals and families. As an area of specialization, students may choose a particular time in the life span, family studies, or consumer studies.

Career Potential
The programs prepare students for careers as administrators of child development or family services programs, child development specialists, curriculum coordinators and teachers of programs for young children, school age program coordinators, youth program specialists, community education instructors, parent educators, senior center coordinators, family financial planners, consumer advocates and family public policy advocates.

HUMAN ECOLOGY (HuEc)

Coordinator's Office: 212 Sarah H. Fleischmann Building, 784-6490

Undergraduate Degree: Bachelor of Science
Major: human ecology
Options: multicultural human sciences, community services administration, human and community public policy studies

The human ecology degree program examines social problems, such as hunger, population control, maternal and child health or the preservation of human rights. The preprofessional degree program includes courses in the College of Human and Community Sciences as well as in various university departments, including sociology, political science, geography, anthropology and philosophy.

Career Potential
The human ecology degree is suited to students who are interested in working with individuals and families from various cultures, socioeconomic groups and those individuals who do not have the benefits of advocacy. The multicultural human sciences

option prepares students for careers in urban development, human services organizations or international services. The community services administration option prepares students for work in private nonprofit agencies, cooperative extension or human services businesses. As a prelaw program, the human and community public policy studies option prepares students for careers in child and family law.

NUTRITION (NUTR)

Department Office: 113 Sarah H. Fleischmann Building, 784-6440

Undergraduate Degree: bachelor of science
Major: nutrition
Options: clinical dietetics, nutritional sciences
Minor: nutrition
Graduate Degree: master of science
Major: nutrition

The department offers a bachelor of science degree in nutrition with two options: clinical dietetics or nutritional sciences. Degree candidates study human anatomy, physiology, microbiology and biochemistry, and learn how each of these disciplines relates to nutrition. Students also study the effects of nutrition in health and disease as they apply to various stages of the life cycle; food science; techniques of food preparation and nutrient composition of food; and nutritional assessment, planning, intervention and evaluation.

Career Potential

The clinical dietetics option prepares students for either an accredited internship or an approved AP4 program in preparation for the National Registered Dietitian Examination. The career may include work as a registered dietitian in community nutrition, hospital settings and private practice.

The nutritional science option prepares students for graduate work and nutrition research.

RECREATION, PHYSICAL EDUCATION AND DANCE (RPED)

Department Office: 203 Lombardi Recreation, 784-4041

Undergraduate Degree: bachelor of arts
Majors: physical education, recreation
Option: dance, municipal recreation
Minor: dance
Undergraduate Degree: bachelor of science
Majors: physical education, recreation
Options: fitness management, municipal recreation
Minors: physical education, athletic training
Graduate Degree: master of science
Major: physical education

The degree program examines the relationship between exercise, fitness, health, recreation and movement science as they relate to issues of public health, rehabilitation, stress reduction, mental health and individual well-being.

Career Potential

The department prepares students as fitness professionals, recreation supervisors/planners, physical education teachers, dance professionals, athletic coaches and trainers.

SOCIAL WORK (S W)

School Office: 525 Business Building, 784-6542

Undergraduate Degree: bachelor of arts
Major: social work
Graduate Degree: master of social work
Major: social work

The baccalaureate program offers coursework and field studies that prepare individuals for beginning-level professional social work practice. The program may also prepare students for admission to graduate school in social work. Program graduates are eligible to take licensing examinations that will qualify them as social workers.

The bachelor's degree course of study is accredited by the Council on Social Work Education. The master's degree program is being considered for initial accreditation.

Career Potential

Students gain knowledge of the theories, skills and professional values that enable them to become social workers in a variety of programs. Those programs include child welfare, community development, corrections, delinquency, employee assistance, health settings, mental health, mental retardation, planning and administration, public assistance and services to the aged.

The undergraduate degree program prepares students for entry-level professional practice; the graduate level program prepares students for advanced practice.

Instructional Programs

University Core Requirements

The completion of core curriculum requirements is necessary before a baccalaureate degree can be awarded. For further information, refer to the University Core Curriculum section of this catalog.

College Requirements

The following requirements apply to all majors offered in the College of Human and Community Sciences:

1. A minimum of 128 total credits.
2. Completion of HCS 101 for three credits. This course requires 45 hours of community service volunteer work.
3. Completion of a research course for three credits.

Bachelor's Degree Programs

Health Education Major

The bachelor of science degree with a health education major prepares students for the planning, implementation and evaluation of health education programs for the community. Courses in the natural sciences, social and behavioral sciences and supervised field work enable graduates to explain and interpret the latest knowledge and developments in the health field. This degree program also prepares students for graduate studies.

Major Interest Subject

	Credits
CHS 300	3
CHS 325	3
CHS 354	3
CHS 452	3
CHS 462	3
CHS 470	3
CHS 475	3
CHS 488	3-6

General Requirements

BIOL 223, 224	6
BIOL 251	3
NUTR 121	3
Health Content	
CHS 464	3
S W 474	3
HDFS 430	3
CHS 471	3
Professional Preparation	
SPCM 113	3
CEP 330	3
C I 432	3
Electives	
Three credits from approved electives list	3
	63

Human Development and Family Studies Major

The bachelor of science degree with a major in human development and family studies prepares students to work with individuals of all ages and their families. The study of theory and research findings is coordinated with a variety of supervised field experiences. Students investigate the ways individuals interact within the family system and with the larger socio-economic environment. An area of concentration may be selected in early development and education, adolescence, adult development and aging, family studies, consumer studies, or general human development and family studies.

Required Courses

	Credits
Foundations	
PSY 101	3
SOC 101	3
EC 101 or 102	3
One methods or statistics course (PSY/SOC 210 or 392 or S W 390)	3
SPCM 113 or 217 or 329	3
NUTR 121	3
	18

Human Development and Family Studies Core

HDFS 233	2
HDFS 274	4
HDFS 371	3
HDFS 431a-e	3
HDFS 436	3
HDFS 470	3
	18

Electives

An additional 18 credits in an area of specialty should be taken from a list of approved electives (i.e., early development and education, adolescence and adult development and aging, or a general HDFS emphasis) 18

Total credits required for major 54

Human Ecology Major

The bachelor of science degree with a major in human ecology prepares students for nontraditional careers in human service organizations, nonprofit agencies, cooperative extension, or private businesses. Graduates assume professional positions and/or pursue advanced-level education, where an understanding of individuals and families from a cultural, organizational, political or business perspective is essential.

Required Courses

	Credits
HCS 490	3
HDFS 274	4
HDFS 371	3
HDFS 436	3
HDFS 438	3
HuEc 101	3
NUTR 121	3
TAM 375	3
TAM 419	3
Internship and Seminar (an appropriate internship selected by adviser)	3
Total credits required for major	34

Area of Concentration

In addition to the required courses, students select a minimum of 33 credits for an area of concentration in one of the following areas: multicultural human services, community services administration, or human and community public policy studies. Students should consult with the human ecology coordinator to develop their area of concentration.

Nutrition Major

The bachelor of science degree in nutrition, with either the clinical dietetics or nutritional sciences option, requires a minimum of 128 credits. At least 40 credits must be earned in courses numbered 300 or 400. A maximum of 30 required or elective credits on a satisfactory/unsatisfactory (S/U) basis may be utilized as part of the credit requirements.

Clinical Dietetics Option

The American Dietetic Association requires that students complete the following programs to become registered dietitians:

1. complete an undergraduate degree in nutrition that includes courses comprising an approved Plan IV program
2. complete an accredited internship or an approved AP preprofessional practice plan.

The clinical dietetics option consists of required and elective courses approved by the American Dietetic Association as a Plan IV program. Students who complete the clinical dietetics degree, Plan IV program are eligible upon graduation to complete the second requirement. Students who complete both of the above requirements are then eligible to sit for the national registration examination for dietitians and pursue employment as a registered dietitian. A variety of careers are available in the field, including clinical/hospital dietetics, administrative dietetics, community nutrition and private or consulting nutrition services.

The following courses are required for the clinical dietetic option:

Natural science and mathematics courses: BIOL 190, 223, 224, 251; CHEM 101, 102, 142, 143; MATH 128.

Social sciences: P SC 210, 304; PSY 101, 210; SOC 101.

Professional courses: NUTR 121, 220, 221, 223, 270, 326, 419, 426, 427, 440, 470, 480.

Other required courses: ACC 201; CEP 330; HDFS 438; MGRS 323; SPCM 411.

Recommended Courses

Freshman Year

	Credi
C S 105 or CIS 201, 202	3-
ENGL 101, 102	
CHEM 101	
HCS 101	
MATH 128	
NUTR 121	
PSY 101	
SOC 101	
	29-3

Sophomore Year

	Credits
BIOL 190, 251	7
CHEM 102, 142, 143	8
ACC 201	3
NUTR 220, 221, 270	7
W T 201, 202	6
Electives	1
	32

Junior Year

	Credits
BIOL 223, 224	6
CEP 330	3
MGRS 323	3
NUTR 223, 326, 427	9
W T 203	3
PSC 210 or 304	3
SPCM 411	3
Electives	2
	32

Senior Year

	Credits
PSY 210	3
HDFS 438	3
NUTR 419, 426, 440, 470	12
Capstone course (core curriculum), NUTR 480	6
Capston course (core curriculum), general	3
Fine arts (core curriculum)	3
Electives	3
	33

Nutritional Sciences Option

The nutritional sciences option develops students' research skills and is designed to prepare students for graduate work/research in nutrition. The following courses are required for the nutritional sciences option:

Natural science and mathematics courses: BIOL 190, 191, 223, 224, 251; CHEM 101, 102, 343, 344, 345; MATH 128, 178; PHYS 151, 152, 153, 154.

Social science courses: PSY 101, SOC 101, plus an additional nine credits of social science.

Nutrition courses: NUTR 223, 419, 426, 427, 440, 470, 480, plus three elective credits in nutrition.

Recommended Courses

Freshman Year

	Credits
BIOL 190, 191	7
CHEM 101	4
ENGL 101, 102	3-6
HCS 101	3
MATH 128	5
PHYS 151, 152	6
PSY 101	3
Elective	1
	32-35

Sophomore Year

	Credits
BIOL 223, 224	6
CHEM 102, 343	7
NUTR 223	3
PHYS 153, 154	6
W T 201, 202	6
Elective	1
	29

Junior Year

	Credits
BIOL 251	3
CHEM 344, 345	5
MATH 178	3
NUTR 419, 427	6
SOC 101	3
W T 203	3
Nutrition elective	3
Social sciences	6
	32

Senior Year

	Credits
B CH 400, 403	6
NUTR 426, 440, 470	9
Capstone courses (core curriculum)	6
Fine arts (core curriculum)	3
Capstone course (core curriculum), general	3
Social sciences	3
Electives	2
	32

Physical Education Major

The bachelor of science or bachelor of arts degree with a major in physical education offers a wide range of courses in the theory and teaching of athletic and physical fitness activities. Students in this major may be certified to teach in junior high, middle and high school by taking a prescribed number of courses in the College of Education. The requirements include 10 credits of supervised teaching in the public schools and specialized courses in teaching methods.

Curriculum

	Credits
HCS 101	3
University core curriculum requirements	33-36
RPED 201, 204, 253, 257, 401, 403, 405, 406, 451, 452	25
RPED 234	2
RPED 235	2
Electives	7-11
Minor requirements	25-35
Related field	22
RPED courses (additional)	10
	128

Physical Education Major with Emphasis in Dance

In this bachelor of arts degree program, students seek careers in the performing arts or teaching for public and private institutions. The course of study emphasizes dance technique, choreography, production and teaching methods.

Curriculum

	Credits
HCS 101	3
MUS 101	3
RPED 110-122, 219, 253, 261, 262, 263, 264, 265, 363, 364, 365, 403, 461, 493	39
THTR 119	3
Research class	3
Electives	38-56
University core curriculum requirements	33-36
	128

Predentistry and Premedicine Majors

Both majors include course and field work that prepares the student for admission to health-related graduate or professional schools, such as medical school and dental school. Graduates are also prepared for advanced training in such fields as public health, health planning and administration and community health education.

Students who are pursuing a premedical or predental course of study should complete a bachelor of science degree. Occasionally, a student is accepted to professional school prior to completing baccalaureate degree requirements. Predental or premedical students who transfer to approved professional schools, and who wish to earn a baccalaureate degree from the University of Nevada, Reno, should refer to the "Resident Credit Requirements" information in the Registration and Records section of this catalog. For more information about this option and about admission requirements for professional schools, contact the Health Careers Advisement Center, 215 Sarah Fleischmann Building, 784-4939.

The following courses are required to complete the predentistry and premedicine degree programs:

Departmental Requirements

	Credits
CHS 300	3
CHS 354	3
CHS 452	3
CHS 462	3
CHS 475	3

General Requirements

	Credits
Chemistry	
CHEM 101-102	8
CHEM 343-344	6
CHEM 345	2
Behavioral Science	
PSY 101	3
PSY 441	3
Additional behavioral science course	3
Biology	
BIOL 191	4
Additional credits may be selected from the following (six credits must be upper division): BIOL 190, 223, 224 (strongly suggested), 251, 368, 414, 475, 480	9
Physics	
PHYS 151-152	6
PHYS 153-154	2
Mathematics	
MATH 178	3
	64

Prephysical Therapy Major

The bachelor of science degree with a major in prephysical therapy is designed to meet the admissions requirements of accredited schools of physical therapy, as recommended by the Council of Medical Education and the American Medical Association.

To be certified as a physical therapist, students must complete a professional or certification program from an accredited school of physical therapy. Currently, Nevada has no such program; however, Nevada does participate in the Western Interstate Commission for Higher Education (WICHE) program to place students in physical therapy schools in the Western region. Students can apply to accredited out-of-state certification programs at the beginning of their junior year.

For further information, contact the Health Career Advisement Center, 215 Sarah Fleischmann Building, 784-4939.

The following courses are required to complete the prephysical therapy degree program:

Departmental Requirements

	Credits
CHS 300	3
CHS 354	3
CHS 452	3
CHS 462	3
CHS 475	3
Mathematics	
MATH 128	5
Biology	
BIOL 191	4
BIOL 251	3
BIOL 223-224	6
Chemistry	
CHEM 101-102	8
CHEM 142-143	4
Recreation and Physical Education	
RPED 403	3
RPED 406	3
Physics	
PHYS 151-152	6
PHYS 153-154	2
Behavioral Science	
PSY 101	3
PSY 441	3
	65

Additional electives (i.e., statistics, human growth and development and an additional psychology course) should be selected based on the requirements of the specific physical therapy schools to which the student will apply.

Recreation Major

Fitness Management Option

This option includes study in exercise, life-long physical activity, human physiology and exercise, nutrition, fitness assessment and motivation. In the program, students also learn about business principles, preparing them for work in public and private fitness centers in both management and consulting capacities.

Curriculum

	Credits
HCS 101	3
RPED 234, 256, 257, 290, 302, 341, 342, 343, 370, 396, 403, 406, 408, 421, 492	38-40
University core curriculum requirements	36
Nutrition:	
NUTR 121, 422c, 422d, 422e, 422f, 427	10
Related Subjects:	
MGRS 367	3
CIS 201	3
CIS 202	1
CIS 203	3
ACC 201-202	6
BIOL 223-224	6
College requirements	3
Electives	19-21
	128

Municipal Recreation Option

This option prepares students to plan, organize, administer and manage intensive programs of athletic and physical fitness activities. Students learn how to design and maintain facilities for community-based recreation programs and also learn how to manage public parks and sports complexes. Career opportunities are available in state, county and city recreation programs.

Predentistry and Premedicine Majors

Both majors include course and field work that prepares the student for admission to health-related graduate or professional schools, such as medical school and dental school. Graduates are also prepared for advanced training in such fields as public health, health planning and administration and community health education.

Students who are pursuing a premedical or predental course of study should complete a bachelor of science degree. Occasionally, a student is accepted to professional school prior to completing baccalaureate degree requirements. Predental or premedical students who transfer to approved professional schools, and who wish to earn a baccalaureate degree from the University of Nevada, Reno, should refer to the "Resident Credit Requirements" information in the Registration and Records section of this catalog. For more information about this option and about admission requirements for professional schools, contact the Health Careers Advisement Center, 215 Sarah Fleischmann Building, 784-4939.

The following courses are required to complete the predentistry and premedicine degree programs:

Departmental Requirements

	Credits
CHS 300	3
CHS 354	3
CHS 452	3
CHS 462	3
CHS 475	3

General Requirements

	Credits
Chemistry	
CHEM 101-102	8
CHEM 343-344	6
CHEM 345	2
Behavioral Science	
PSY 101	3
PSY 441	3
Additional behavioral science course	3
Biology	
BIOL 191	4
Additional credits may be selected from the following (six credits must be upper division): BIOL 190, 223, 224 (strongly suggested), 251, 368, 414, 475, 480	9
Physics	
PHYS 151-152	6
PHYS 153-154	2
Mathematics	
MATH 178	3
	64

Prephysical Therapy Major

The bachelor of science degree with a major in prephysical therapy is designed to meet the admissions requirements of accredited schools of physical therapy, as recommended by the Council of Medical Education and the American Medical Association.

To be certified as a physical therapist, students must complete a professional or certification program from an accredited school of physical therapy. Currently, Nevada has no such program; however, Nevada does participate in the Western Interstate Commission for Higher Education (WICHE) program to place students in physical therapy schools in the Western region. Students can apply to accredited out-of-state certification programs at the beginning of their junior year.

For further information, contact the Health Career Advisement Center, 215 Sarah Fleischmann Building, 784-4939.

The following courses are required to complete the prephysical therapy degree program:

Departmental Requirements

	Credits
CHS 300	3
CHS 354	3
CHS 452	3
CHS 462	3
CHS 475	3
Mathematics	
MATH 128	5
Biology	
BIOL 191	4
BIOL 251	3
BIOL 223-224	6
Chemistry	
CHEM 101-102	8
CHEM 142-143	4
Recreation and Physical Education	
RPED 403	3
RPED 406	3
Physics	
PHYS 151-152	6
PHYS 153-154	2
Behavioral Science	
PSY 101	3
PSY 441	3
	65

Additional electives (i.e., statistics, human growth and development and an additional psychology course) should be selected based on the requirements of the specific physical therapy schools to which the student will apply.

Recreation Major

Fitness Management Option

This option includes study in exercise, life-long physical activity, human physiology and exercise, nutrition, fitness assessment and motivation. In the program, students also learn about business principles, preparing them for work in public and private fitness centers in both management and consulting capacities.

Curriculum

	Credits
HCS 101	3
RPED 234, 256, 257, 290, 302, 341, 342, 343, 370, 396, 403, 406, 408, 421, 492	38-40
University core curriculum requirements	36
Nutrition:	
NUTR 121, 422c, 422d, 422e, 422f, 427	10
Related Subjects:	
MGRS 367	3
CIS 201	3
CIS 202	1
CIS 203	3
ACC 201-202	6
BIOL 223-224	6
College requirements	3
Electives	19-21
	128

Municipal Recreation Option

This option prepares students to plan, organize, administer and manage intensive programs of athletic and physical fitness activities. Students learn how to design and maintain facilities for community-based recreation programs and also learn how to manage public parks and sports complexes. Career opportunities are available in state, county and city recreation programs.

Curriculum

	Credits
HCS 101	3
University core curriculum requirements	33-36
Research class	3
Major field of study requirements:	
RPED 201	3
RPED 240	2
RPED 256	1
RPED 257	1
RPED 270	2
RPED 290	1
RPED 302	2
RPED 341	3
RPED 342	2
RPED 351	3
or	
RPED 352	3
RPED 421	3
RPED 440	3
RPED 492	8-10
Electives	49-52
	128

Social Work Major

The bachelor of arts degree with a major in social work includes course and field work preparing students for entry-level professional social work practice and licensure as a state of Nevada social worker upon examination. The major also prepares students for admission to graduate school in such programs as social work, public health, counseling, corrections, law, or public administration. By combining course work and field experience, students learn the professional foundation of knowledge, theories, skills and values that enable them to function as social workers in public assistance, child welfare, mental health, mental retardation, rehabilitation, delinquency, corrections, community development and planning and administration.

The student is required to complete 34 credits in the department, 28 in required courses. The remaining six credits are elective and should be selected in consultation with an adviser. Twenty-one credits are required in courses outside the department.

Additionally, students who major in social work must meet the following requirements:

1. complete departmental-required options in cultural diversity (Specific courses in cultural diversity can be determined by an adviser.) or

2. complete a fourth-semester college course in a foreign language.

Undergraduate students interested in the social work major are admitted to premajor status. Students enrolled in the School of Social Work as premajors, or those who have been accepted into the major, must have their courses reviewed by an adviser before registering.

Students must apply for admission to the major by Nov. 1 for spring semester and by April 1 for fall semester. Admission materials are available in the school office, Room 525 Business Building.

To be considered for admission, students must meet the following requirements:

1. complete 56 credits with a minimum grade-point average of 2.0;

2. complete S W 220 and 330 with a grade-point average of at least 2.0;

3. submit a formal application and an essay discussing professional goals and your potential for improving interpersonal/helping relationships;

4. submit satisfactory references.

Requirements for graduation with a social work major include completion of at least 128 credits with an overall grade-point average of 2.0 or higher and completion of all required social work courses with at least a "C" grade in each course.

The program is accredited by the Council on Social Work Education at the baccalaureate level.

Major Interest Subject Requirements

	Credits
S W 220	3
S W 320	3
S W 330-331	6
S W 390	3
S W 450	3
S W 480-481	10
Social work electives	6
	34

General Requirements

	Credits
ANTH 101	3
BIOL 100	3
PSY 101	3
SOC 101	3
Three credits each in political science and economics	6
	18

Additional required courses: Students also must take courses in cultural diversity or meet a language proficiency requirement.

Minor and Certificate Programs

Athletic Training Minor

Students majoring in another field may minor in athletic training by completing the following requirements:

	Credits
BIOL 223	3
BIOL 224	3
RPED 354	3
RPED 370	2
RPED 403	3
RPED 406	3
RPED 470	2
RPED 494	4
	23

Dance Minor

Students majoring in another field may minor in dance by completing the following requirements:

Credits	
RPED 110	1
RPED 111	1
RPED 119	1
RPED 120	1
RPED 253	2
RPED 261	2
RPED 262	3
RPED 264	3
RPED 265	3
RPED 362	3
RPED 364	2
RPED 365	2
	24

Gerontology Certificate Program

An interdisciplinary course of study in aging issues is administered through the Geriatric and Gerontology Center. The 24-credit curriculum includes 12 credits selected from approved electives emphasizing gerontology. The program provides students with educational and practical experience to increase their effectiveness in working with older adults.

For further information, refer to the description of program and course requirements in the Interdisciplinary and Special Programs section of this catalog.

Gerontology Minor

To complete the minor program, students are required to earn 18 credits of gerontology coursework, including nine credits of required subject matter and nine credits selected from approved electives emphasizing gerontology.

For further information, refer to the description of program and course requirements in the Interdisciplinary and Special Programs section of this catalog.

Human Development and Family Studies Minor

This minor program requires students to take a total of 18-24 credits with nine credits in upper-division courses. HDFS 274 is required. Students may select courses to support their particular academic and professional goals.

Nutrition Minor

Students majoring in another field may minor in nutrition by completing 18 credits from the following list: NUTR 121, 223, 419, 421, 422, 426, 427, 433, 440.

Physical Education Minor

Students majoring in another field may minor in physical education by completing the following requirements:

	Credits
RPED 201	3
RPED 204	2
RPED 234 or 235	2
RPED 257	1
RPED 301 or 302	2-3
RPED 403	3
RPED 405	3
RPED 406	3
Electives	1-3
	21-24

Master's Degree Programs

Human Development and Family Studies Major

Students who seek the master of science degree with a major in human development and family studies must meet the following requirements before they begin graduate-level study:

1. earn a bachelor's degree from an accredited educational institution with course credit and/or work experience in human development, interpersonal relationships, families, or family economics;

2. maintain an overall undergraduate grade-point average of at least 2.75;

3. score 400 or above on the verbal portion of the Graduate Record Examinations (GRE).

In the graduate program, students may specialize in an area of academic interest through the selection of electives and a thesis or professional paper topic. The master's degree candidate may select a thesis plan or professional paper plan. In both options, 12 hours of credit in courses numbered 700 or above are required. A total of 32 credits is required, as listed below:

	Credits
HDFS 631	3
HDFS 636	3
HDFS 720	3
or	
HDFS 730	3
HDFS 740	3
HDFS 771	3
HDFS 796	3
or	
HDFS 797	6
Electives	8-11
Statistics course	3
	32

Nutrition Major

Students who seek the master of science degree with a major in nutrition must meet the following requirements before they begin graduate-level study:

1. earn a bachelor's degree from an accredited educational institution;

2. maintain an overall undergraduate grade-point average of at least 3.0;

3. score at least 1,000 on the combined verbal and quantitative portions of the Graduate Record Examinations (GRE).

After gaining admission to the program, students consult with their graduate adviser to:

1. form an appropriate graduate committee;

2. develop an approved course of study (the course of study must include three credits of NUTR 725; three semesters of NUTR 726; six credits of thesis; and 12 credits of courses in nutrition and a selected support area, such as biochemistry, biology, physiology, or recreation and physical education). Of these 12 credits, six must be at the 700 level.

3. begin the thesis project and submit a preliminary draft to the graduate committee for approval.

The second year of graduate study includes completion of the thesis and all coursework and the comprehensive and final examinations.

Students must maintain an overall grade-point average of 3.0 to maintain progress in the master of science program. They will also be required to take at least one credit each semester in order to maintain progress toward earning their degree. Graduate assistants will be required to earn sufficient credits to constitute full-time enrollment.

The master of science degree with a major in nutrition requires 24 credits of coursework and six credits of thesis, as listed below:

	Credits
NUTR 725	3
NUTR 726 (three semesters)	3
Research methods	3
Statistics course	3
Support elective courses at 600/700 level	12
Thesis	6
	30

Graduate Assistantships

A limited number of graduate assistantships are provided. An application for graduate assistantships can be obtained from the nutrition department. In order to maintain an assistantship, students will be expected to maintain at least a 3.0 grade-point average, maintain satisfactory degree progress and perform the assistantship tasks in a satisfactory manner.

Physical Education Major

The recreation, physical education and dance department offers a graduate program leading to the master of science degree with a major in physical education.

Entrance requirements for the program include a bachelor's degree from an accredited educational institution, an undergraduate grade-point average of at least 3.0 and sufficient Graduate Record Examinations (GRE) scores.

After gaining admission to the program, the student will be assigned a graduate adviser who, within the first year, will assist the student to:

1. form an appropriate graduate committee ;

2. develop the course of study and submit it for approval to the student's graduate committee;

3. begin to formalize the thesis project and submit a preliminary draft of the thesis proposal to the graduate committee for approval.

The second year of graduate study will include:

1. completion of all coursework;
2. completion of the thesis or professional paper;
3. completion of comprehensive and final examinations.

An overall grade-point average of 3.0 or higher is required to maintain progress in the program. Students will also be required to take at least one credit per semester, or in the case of graduate assistants, sufficient credits to constitute full-time enrollment in order to maintain degree progress.

The master of science degree with a major in physical education requires 24 or 29 credits of coursework and either six credits of thesis or three credits for the completion of a professional paper, as listed below:

	Credits
RPED 702	2
RPED 703	2
RPED 704	2
RPED 705	2
RPED 792	2
RPED 793	2

(Prerequisite: 15 graduate credits in RPED)

Total credits 30 (thesis 6, coursework 24); 32 (professional paper 3, coursework 29).

Graduate Assistantships

A limited number of graduate assistantships are provided. An application for graduate assistantships can be obtained from the recreation, physical education and dance department. In order to maintain an assistantship, students will be expected to maintain at least a 3.0 grade-point average, maintain satisfactory degree progress and perform assistantship tasks in a satisfactory manner.

Further details may be obtained from the office of the dean of the Graduate School or from the chair of the department.

Social Work Major

The master of social work degree prepares students for advanced social work practice. For students without a bachelor's degree in social work from an accredited program, the master of social work degree requires the completion of 60 credits of graduate coursework,including 18 credits of field work. Students who hold a bachelor's degree in social work from an accredited program must complete 42 graduate credits, including 12 credits of field work.

The curriculum stresses a commitment to quality social services in the public setting. A wide variety of field experiences is available, including options in urban and rural settings.

Students in the graduate program demonstrate their ability to complete the professional foundation curriculum in social work and specialize in one of three areas of concentration: the elderly, vulnerable families, or at-risk physically or mentally ill populations.

Program graduates will be eligible to qualify for licenses as social workers, clinical social workers and independent social workers through testing and accumulated field experience.

For further information about the master of social work program, contact the director of the School of Social Work.

Donald W. Reynolds School of Journalism

James K. Gentry, *Dean*
Dean's Office: 301 Reynolds School of Journalism, 784-6531

Objective

The objective of the Donald W. Reynolds School of Journalism is to help students acquire the combination of general education and journalistic skill that will enable them to pursue inquiry intelligently, treat issues fairly and communicate facts clearly.

The successful practice of these skills demands competence in writing and understanding of government, economy and society.

Bachelor of Arts Degree

Students seeking the bachelor of arts degree from the Reynolds School of Journalism must complete at least 128 credits, 40 of which must be numbered 300 or higher.

The university requires completion of the Core Curriculum.

Of the 128 credits required for graduation, at least 90 credits must be in courses other than journalism and journalism-related skills courses, and at least 65 credits must be earned in the liberal arts. A minimum of 30 credits must be in journalism, including courses in the journalism core and one career option, as described in this section.

Of the journalism courses, only JOUR 101, 201 and 203 may be taken during the freshman and sophomore years. Students are urged to enroll in liberal arts courses and to satisfy requirements of the Core Curriculum, as well as the journalism school's requirement for foreign language proficiency during the first two years of university-level study.

Journalism majors are required to pursue a second major field of study, a minor, or an approved interdisciplinary cluster of courses in an outside field.

To gain approval to major in journalism, a student must have junior standing and a cumulative grade-point average of at least 2.5. Freshmen and sophomores are classified as prejournalism majors.

Students majoring in journalism may count toward graduation no more than 15 credits taken for satisfactory/unsatisfactory (S/U) grades. With the exception of journalism courses offered for S/U grade only, all courses satisfying specific requirements for the major must be taken for a letter grade.

Liberal Arts Requirements

The curriculum for journalism majors includes a strong liberal arts education. The following requirements comprise the university's Core Curriculum requirements *and* the journalism school's additional liberal arts requirements.

	Credits
Writing	
ENGL 101, 102	3-6
Mathematics	
MATH 120, 128, 176, 178 or 181	3
Economics	
ECON 101, 102	6
Basic Science	
BIOL 100, 191; CHEM 101, 102, 105, 201, 202; PHYS 100, 151-153, 152-154, 201-204, 202-205 or 203-206	3
Behavioral Science	
PSY 101, 103; SOC 101; or ANTH 101	3
Environmental Science	
GEOG 103; GEOL 101; B CH 150; or ANTH 102	3
Political Science	
P SC 101, 211, 231, 304, 305, 308 or 309	3
Fine Arts	
ART 100, 116, 117; MUS 120, 121, 122, 201, 202, 203; or THTR 100	3
The Western Tradition	
W T 201, 202, 203	9
Literature	
ENGL 235, 236, 241, 244, 253, 261, 291, 292, 293, 337 or FLL 366	6
Philosophy	
PHIL 110, 112, 125, 130, 200, 203, 207, 211, 212, or 213	3
Cultural Studies	
ANTH 200, 201, 205, 464, 467, 468, 488; FR 221, GEOG 476, 487, 488, 489; GER 221; ITAL 221; JAPN 221; SPAN 221 or 222	3
Integrative Capstone Courses	
Two courses from the list of capstone courses identified as part of the university's Core Curriculum	6
Additional Liberal Arts	
Additional courses from those listed above or the following: MATH 101, ENGL 101, or any foreign language course numbered 101, 102, 203, 204, 205, 209	12

Outside Field of Study

Journalism majors are required to complete one of the following: a dual *major or a minor* in another department, or an approved *interdisciplinary cluster* of courses. A cluster comprises at least 18 credits of course work, nine credits of which must be numbered 300 or above. The cluster, which must be approved by the student's adviser, should form a coherent study plan of an interdisciplinary topic.

Language Requirement

Journalism majors must demonstrate proficiency in one foreign language by successfully completing a fourth-semester course in that language or by passing an examination at that level.

Grade-point Average Requirement

As a professional school, the Reynolds School of Journalism expects students to demonstrate a solid commitment to performance and excellence.

To major in journalism, students must maintain a grade-point average of at least 2.5 in all courses. A student whose grade in a journalism course is lower than "C," and whose grade-point average for journalism courses is below 2.5, must repeat the course.

Students who do not satisfy the grade-point average requirements for two successive semesters may not register for additional journalism courses without advance written approval of the dean.

Journalism Courses

All journalism majors must complete courses in the journalism core, which provides basic knowledge and skills for students seeking careers in print and broadcast journalism, advertising or public relations. Journalism majors are also required to complete the courses in one career option. Students who successfully complete the journalism core and one career option earn 30 credits.

The Journalism Core

	Credits
Freshman Year	
JOUR 101	3
Sophomore Year	
JOUR 201, 203	6
Junior and Senior Years	
JOUR 303, 401	6

Career Options

Career option courses may be taken only by students who have junior standing, satisfy the grade-point average requirements and have successfully completed JOUR 101, 201 and 203. Career option courses should be taken in the listed sequence.

	Credits
Print Journalism	
JOUR 311, 313, 411, 413, 499	15
Broadcast Journalism	
JOUR 321, 323, 421, 423, 499	15
Advertising	
JOUR 331, 333, 334, 431, 433, 499	18
Public Relations	
JOUR 313, 341, 343, 411, 441, 499	18

Minor in Journalism

Students majoring in another field may minor in journalism by completing the following courses:

	Credits
JOUR 101, 201, 203, 303, 401	15
At least one three-credit course from one or more of the career options listed above	3-6

Journalism Teaching

Students may prepare for a career as a high school journalism teacher by taking a combination of courses in journalism and education. This program is offered by the university's College of Education.

Accreditation

The Donald W. Reynolds School of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communications. Accreditation was first granted in 1970.

Master of Arts Degree

The master's degree program in journalism prepares students for careers in the media or teaching. The student acquires research skills and develops journalistic competence.

The program is designed to accommodate students' diverse academic and professional interests. The Reynolds School of Journalism encourages applications from those who hold degrees in other disciplines as well as those students with journalism backgrounds who wish to continue their education.

Admission Requirements

Students are admitted to the graduate program each fall semester on a competitive basis, with notification of acceptance by May 1.

A completed application and supporting credentials must be submitted directly to the university's Office of Admissions and Records by April 15. Supporting credentials include:

1. Official transcripts from each college and university attended;
2. Graduate Record Examination (GRE) scores (from a test taken within the past five years);
3. Application fee (nonrefundable).

In addition, each applicant must provide the following information directly to the Reynolds School of Journalism for consideration:

1. Letter of intent explaining study goals;
2. Three letters of recommendation;
3. Other evidence of potential for success in graduate study.

Successful applicants generally have an undergraduate grade-point average of at least 3.0 and a composite GRE score of at least 1,500. Primary consideration is given to the verbal and analytical sections of the GRE.

One of the letters of recommendation should be from an appropriate professor at the student's undergraduate institution, appraising the applicant's capabilities for graduate work. Additional letters of recommendation from employers are acceptable. The applicant's statement of experience and interest in journalism should specify what he or she expects to accomplish from pursuing graduate study.

Students entering the master's program should have demonstrated writing and editing skills and have satisfactorily completed courses in media law and the history and ethics of journalism. Depending upon a student's educational and professional background, the student may be required to complete courses in these areas. If the student's grade-point average in the courses is below 2.5, the student must retake courses with grades of "C" or below.

International Students

The Reynolds School of Journalism welcomes applications from international students. The school recognizes that journalism, more than many other fields, requires language skill. International students must be able to follow rapid speech both in the field and the classroom, as well as to deal with abstract ideas communicated in English. Completion of the master's degree in journalism attests to the student's proficiency in English.

The Test of English as a Foreign Language (TOEFL) is required of international students whose native language is not English. Students must score 650 or higher on the TOEFL to be admitted. Students taking the TOEFL are not required to take the GRE.

Plan of Study

Prior to a student's registration for the first semester of study, a member of the journalism graduate faculty is assigned as the student's adviser. The adviser helps the student develop a study program that details appropriate course work and the anticipated completion date for the degree. This plan of study constitutes the terms and conditions that the student must meet in order to complete the degree requirements. Subsequent changes in the plan of study must be approved by the director of graduate studies.

Writing Proficiency Examination

A writing proficiency examination is administered at the beginning of the fall semester. Students take the examination during their first fall semester of graduate standing. Students who score less than 80 percent on the exam take the test again during the same semester. Those who score less than 80 percent in a second test are required to pass a prescribed undergraduate writing course with a grade of at least "B" or to correct their writing deficiencies with the assistance of the university's Writing Center.

Graduate Assistantships

Graduate assistantships are available in the Reynolds School of Journalism each year. Graduate assistants teach selected courses and assist faculty in preparing their courses and research.

Graduate assistants receive stipends for one academic year. Stipends are accompanied by grants-in-aid, which pay most of the student's tuition costs.

Students applying for assistantships, which begin in the fall semester, should file their applications with the school no later than April 15. Graduate assistantships are awarded only to students who are officially admitted to graduate standing.

Degree Requirements

To qualify for the master of arts degree with a major in journalism, students must complete the following academic requirements:

1. Writing proficiency examination;
2. Undergraduate prerequisites, if any;
3. Graduate core curriculum for journalism (21 credits);
4. Directed study (12 credits);
5. Maintenance of at least a 3.0 grade-point average;
6. Professional research project (four credits);
7. Project development course (two credits);
8. Oral defense of professional research project.

Of the 33 required graduate credits, at least 21 must be in courses numbered 700 or higher. Courses numbered lower than 600 are not counted toward the degree. With the exception of JOUR 797 and 798, no course may be taken for S/U grade.

Directed Study

Graduate students with undergraduate degrees in journalism or mass communication, or with extensive professional experience, take 12 credits in a minor field. Students without such backgrounds take solely journalism courses.

Core Curriculum

The following courses are required for all journalism graduate students:

	Credits
JOUR 701	3
JOUR 702	3
JOUR 797	4
JOUR 798	2
And one journalism writing course from the following:	
JOUR 618	2
JOUR 707	3
JOUR 771	3
JOUR 779	3
JOUR 790A	3
JOUR 790B	3
Also required: two journalism graduate-level electives and 12 enrichment credits in journalism or other colleges, as specified by the Advisory/Examination Committee	
	33

Electives

Elective graduate courses in journalism include such topics as: media management, advertising and public relations research, mass media history, international journalism, legal restraints on the media, television network programming, literary journalism, technical writing, public affairs reporting, and magazine writing and editing.

Maintaining Progress

Students are expected to maintain satisfactory progress toward the degree. A student's graduate record begins with the first course credited to the degree and includes all subsequent courses. Students must maintain a grade-point average of at least 3.0 within the core curriculum and in all courses counted toward the degree. Students must complete all requirements within four years.

To maintain standing in the program, a student must enroll for at least one graduate-level credit during each regular semester.

Professional Research Project

Each student must complete a professional research project designed to blend research with professional practice. Students identify a problem within the field, investigate the problem in a media setting and apply appropriate research procedures. The project is the capstone of the student's graduate studies.

Students submit a written prospectus to the Advisory/Examination Committee, outlining the purpose and approach of the research, at least 60 days before client affiliation. (NOTE: the **student must complete JOUR 701 or 702 before preparing the initial prospectus.)**

The Advisory/Examination Committee, chosen by the student, consists of three or more members, one from outside the Reynolds School of Journalism. The chairman must be a member of the graduate faculty of the school. Once approved by the dean of the Graduate School, committee membership can be changed only after approval by that dean.

A consultative meeting is held between the student and the advisory committee to discuss revisions of the research project. After the meeting, the committee votes to accept or reject the prospectus. Final approval of the project is required before the student can begin working with a media firm. In completing the project, the student submits periodic progress reports to the committee adviser while working with the media firm.

Oral Defense

Following completion of the professional research project, the master's degree candidate prepares an oral defense of the project. It is evaluated as a measure of the student's conceptual, research and writing abilities.

The student schedules the defense, with the consent of the committee, for a date not later than two weeks before the end of spring or fall semester. All members of the committee must have adequate time to read the project document before the oral examination. The student is responsible for duplicating and distributing document copies to the advisory committee and making arrangements for scheduling the oral defense. Students also should make sure their academic progress sheets are filed with the director of graduate studies in journalism at least two weeks prior to the oral defense.

A majority vote of the committee is sufficient to approve the project. The signatures of all committee members must appear on the signature sheet.

After the oral defense is presented, the committee advises decides whether final corrections have been properly made and checks the style and form of the final typed version. Procedures for the professional research project are the same as those listed for the thesis in the Graduate School section of this catalog.

As a final requirement, three copies of the professional research project document should be delivered to the Reynolds School of Journalism.

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School of Medicine

Robert M. Daugherty, Jr., M.D., Ph.D., *Dean*
Dean's Office: 27 Savitt Medical Sciences, 784-6001

Departments of Instruction:

Biochemistry
Clinical Laboratory Science
Speech Pathology and Audiology

The University of Nevada School of Medicine is one of only 20 community-based medical schools in the United States. This means the school uses existing clinical facilities in its clinical training programs; it owns no teaching hospital. The school is designed to train capable and caring physicians who will practice primary care medicine in a community rather than an academic setting.

In a state like Nevada, with a small and scattered population, limited resources and a need for primary-care physicians, the university-based and community-integrated medical school model is both philosophically and pragmatically the most practical.

The School of Medicine is comprised of seven basic science and seven clinical science teaching departments. Interaction among the disciplines provides students with a well-balanced approach to health care education.

Important allied health programs overseen by the school include the medical technology/clinical laboratory sciences program and the department of speech pathology and audiology.

Baccalaureate Degree Programs

The School of Medicine offers a bachelor of science degree with majors in biochemistry, clinical laboratory science and speech pathology or audiology. The clinical training and practicum associated with these fields are fully integrated with the school's curriculum. Students earn their baccalaureate degrees by completing the following requirements:

1. A total of 128 credits in required and elective courses. Of the 128 credits, a maximum of eight credits of combined courses in recreation and physical education and military science (below 300-level) may apply;
2. A minimum of 40 credits in courses numbered 300 or above;
3. The university Core Curriculum requirements;
4. The general university requirements regarding grade-point average and resident credit.

The number of credits taken on an satisfactory/unsatisfactory (S/U) basis may not exceed 30. These courses may not be taken to fulfill degree requirements.

In addition, a bachelor of science degree with a major in medical sciences is offered for medical students who enter the School of Medicine after three years of university-level study. The major may be completed during the two-year basic sciences curriculum, provided all university and school requirements are satisfied during that time.

Biochemistry (B CH)

Department Office: Howard Medical Sciences, 784-6031

An undergraduate major is offered in biochemistry through the College of Agriculture and the School of Medicine. The program provides the student with a well-rounded general education emphasizing the biological and chemical sciences and provides specific training in the major field through a sequence of standard biochemistry courses during the student's junior and senior years. A minor in biochemistry is also available.

The bachelor of science degree with a major in biochemistry prepares students for graduate study, civil service positions, industry and professional fields related to life, health, agriculture and the medical sciences.

The curriculum for biochemistry majors is listed below. Fulfillment of this program satisfies university core curriculum requirements. Students should contact the biochemistry department for advisement.

Freshman Year

	Credits
BIOL 190, 191	7
CHEM 201, 202 recommended; CHEM 101, 102 accepted	8
ENGL 101, 102	6
MATH 181, 182	8
Electives	3
	32

Sophomore Year

	Credits
AGEC 270 or equivalent	3
CHEM 343, 344	6
CHEM 347, 348	4
PHYS 151, 152	6
PHYS 153, 154	2
W T 201, 202	6
Electives	5
	32

Junior Year

	Credits
B CH 400	4
B CH 403, 404	4
B CH 417	4
CHEM 330	4
CHEM 353, 354 recommended; CHEM 357 accepted	6
W T 203	3
Biological science elective	4
Elective	3
	32

Senior Year

	Credits
B CH 407, 408	6
B CH 413	4
B CH 420, 421	2
Biological science elective	4
Electives	7
Fine arts, social science core	6
Capstone	3
	32

Minor in Biochemistry

Students majoring in another field may minor in biochemistry by completing the following:

	Credits
B CH 400, 403, 404	8
B CH 413 or 417	4
An additional six credits in any course in the physical sciences (including additional biochemistry)	6
	18

Clinical Laboratory Science (CLS)

Department Office: 300 Mackay Science, 784-4846

The clinical laboratory science curriculum is designed to provide students with the knowledge and skills required to perform diagnostic procedures in the clinical laboratory. Emphasis is placed on the role of the clinical laboratory scientist in modern health care delivery.

Students who wish to pursue a career in clinical laboratory science are classified premajors upon admission to the university.

Students may select a two-year course of study, and after they complete the program, enter the work force as a medical laboratory technician (MLT). They also may elect to complete a bachelor of science degree with a major in clinical laboratory science, which can provide students with greater upward mobility and responsibility. The bachelor's degree program prepares students for a career as a medical technologist.

After they have completed the requirements of the first semester, students may apply for acceptance into the MLT program. Admission criteria includes a grade-point average of at least 2.50 in required courses with a C grade or better in each of these courses. Students receive their MLT certificate if they maintain a cumulative grade-point average of at least 2.0 and achieve a grade of C or better in the required program courses.

Similar two-year MLT programs leading to an associate degree are offered through Community College of Southern Nevada (CCSN) and Northern Nevada Community College (NNCC). For more information, contact the clinical laboratory science department at the University of Nevada, Reno or the affiliated programs at the community colleges.

The suggested curriculum for clinical laboratory science majors is listed below:

Freshman Year – First Semester

	Credits
CHEM 101	4
CLS 111	1
ENGL 101	3
MATH 128	5
	13

Freshman Year – Second Semester

	Credits
BIOL 190 or 191	3-4
CHEM 102	4
CLS 161	2
CLS 162	1
ENGL 102	3
Social science core course	3
	16-17

Freshman Year – Summer

	Credits
CLS 251	2
CLS 252	2
CLS 281	1
CLS 282	1
	6

Sophomore Year – First Semester

	Credits
BIOL 223	3
CHEM 142	3
CHEM 143	1
CLS 216	1
CLS 221	1
CLS 271	2
CLS 272	3
	14

Sophomore Year – Second Semester

	Credits
BIOL 224	3
CLS 222	1
CLS 241	3
CLS 242	3
CLS 281	1
CLS 291	2
CLS 292	2
	15

Sophomore Year – Summer

	Credits
CLS 296	3

Students pursuing a bachelor's degree with a major in clinical laboratory science at the University of Nevada, Reno must earn a grade-point average of at least 2.50 with a grade of C or better in each required course. They cannot enroll in CLS courses unless they have completed the medical laboratory technician curriculum or equivalent, or have obtained permission from the instructor. Once admitted to the major, students must maintain a grade-point average of at least 2.50 and must earn a grade of C or better in each major course to satisfy graduation requirements.

Applications for both the medical laboratory technician and medical technology majors are reviewed by the clinical laboratory science faculty. Students are accepted on the basis of academic achievement and available space in the programs. Students who do not meet the acceptance criteria may appeal to the Medical Technology Advisory Council for provisional consideration. Transfer students are considered for admission following an interview and transcript evaluation. The CCSN and NNCC medical laboratory technician programs fully articulate with the bachelor's degree program at the University of Nevada, Reno. Students who successfully complete the MLT curriculum at either community college may enter the bachelor's degree program at the university.

Junior Year – First Semester

	Credits
CHEM 330	4
CLS 317	2
CLS 352	1
PHYS 152	3
W T 201	3
Fine arts core course	3
	16

Junior Year – Second Semester

	Credits
B CH 400	4
CLS 301	1
CLS 371	2
CLS 372	2
W T 202	3
W T 203	3
	15

Senior Year – First Semester

	Credits
CS 105	3
CLS 391	2
CLS 392	1
CLS 425	1
Core Curriculum capstone course	3
Elective	3
	13

Senior Year – Second Semester

	Credits
CLS 431	3
CLS 432	1
CLS 441	3
CLS 442	1
Core Curriculum capstone course	3
	11

Senior Year – Summer

	Credits
CLS 496	15

During their course of study, all students in the CLS program (certificate and bachelor's degree) are required to enroll in clinical practicum and, upon recommendation by the Clinical Laboratory Science Placement Committee, are assigned to affiliated hospital laboratories for practical experience. Recommendation is based upon satisfactory completion of prerequisite courses, space availability in clinical affiliates and the student's ability to meet acceptable psychomotor and behavioral aptitude standards.

Students must successfully complete the practicum rotations, which include satisfactory performance in all clinical laboratory disciplines. Degree candidates must achieve a passing score on a comprehensive examination given at the completion of the clinical practicum.

Students who satisfactorily complete either the MLT or bachelor's degree program are eligible to take the appropriate generalist certification examination given by various agencies.

Speech Pathology and Audiology (SPA)

Department Office: 108 Speech Pathology and Audiology, 784-4887

The bachelor of science degree with a major in speech pathology (and an option in audiology) is for a *preprofessional* program. A master's degree is considered essential for *professional* competence in the field.

In the bachelor's degree program, students must complete a minimum of 40 credits in speech pathology and audiology, and 125 clock hours of supervised practicum with individuals who display a variety of communicative disorders. In addition, students must earn 20 credits in related disciplines, such as anthropology, mathematics, medicine, nursing, biology, physical sciences, psychology, special education, linguistics, sociology, or semantics. Each student must satisfy the university Core Curriculum requirements and demonstrate adequate ability to work with children having articulation and language disorders.

Required Course

	Credits
SPA 259	3
SPA 310	3
SPA 356	3
SPA 357	3
SPA 359	3
SPA 360	3
SPA 361	3
SPA 362	3
SPA 363	4-8
SPA 421	3
SPA 459	2
SPA 463	6-8
SPA 466	3
SPA 467	3

All speech pathology and audiology majors are required to have their programs approved by a faculty adviser within the department.

Graduate Degree Programs

Biochemistry Major

The university offers an interdepartmental biochemistry graduate program, leading to master of science and doctor of philosophy degrees.

For specific program information, refer to the Interdisciplinary and Special Programs section of this catalog.

Cellular and Molecular Biology Major

Cellular and molecular biology is an interdisciplinary program offered by the School of Medicine, the College of Agriculture and the College of Arts and Science. Study programs lead to the master of science and doctor of philosophy degrees. Additionally, medical students may earn a M.D./Ph.D. degree through the program.

For specific program information, refer to the Interdisciplinary and Special Programs section of this catalog.

Cellular and Molecular Pharmacology and Physiology Major

Cellular and molecular pharmacology and physiology is an interdisciplinary graduate program. The program leads to master of science and doctor of philosophy degrees.

For specific program information, refer to the Interdisciplinary and Special Programs section of this catalog.

Combined M.D./Ph.D.

A combined M.D./Ph.D. degree program is offered with majors in anatomy, biochemistry, cellular and molecular biology, pharmacology and physiology.

Degree candidates may be accepted to the M.D./Ph.D. program only after being accepted to the School of Medicine as a regular M.D. student. Candidates also must meet the admission criteria of the Graduate School. Students may apply for the program in the same manner in which they apply for admission to the School of Medicine. An additional application must be submitted to the M.D./Ph.D. program committee and the Graduate School.

For further information, contact the pharmacology department chair at 784-6956.

Speech Pathology and Audiology Major

The master of science degree program is designed to provide a professional level of competency in speech pathology. Degree candidates must meet the general admission requirements of the Graduate School. Before they are admitted to graduate standing, students are expected to complete a concentration of course work in speech pathology and audiology, subject to department approval. The speech pathology and audiology masters program is accredited by the Educational Standards Board of the American Speech Language and Hearing Association.

A minimum of 40 academic credits must be completed at the graduate level. The thesis program, Option A, requires a minimum of 34 credits plus six credits of thesis, as well as a comprehensive oral examination covering the thesis and background information.

The nonthesis program, Option B, requires a minimum of 40 credits. During the student's final semester, a comprehensive oral and written examination covering communication science, the normal speech and hearing processes, pathologies and clinical procedures is given.

Students who complete the masters program are expected to acquire the background and experience necessary to pass the American Speech Language and Hearing Association national examination. Students must pass the exam to be recognized and certified as a competent speech pathologist or audiologist.

Graduate students must complete a minimum of 300 clock hours of supervised clinical experience at the graduate level and a total of 400 supervised clock hours for both graduate and undergraduate programs.

An approved program in speech pathology and audiology (meeting national certification requirements) is developed by the graduate adviser, supervising committee and the student. The suggested curriculum is listed below:

	Credits
SPA 659	2
SPA 660	1
SPA 661	2
SPA 663	6-8
SPA 664	2
SPA 665	3
SPA 666	3
SPA 667	3
SPA 720	3
SPA 721	3
SPA 751	3
SPA 752	3
SPA 753	3
SPA 754	2
SPA 757	3
SPA 759	2
SPA 762	3
SPA 765	3
SPA 767	2
SPA 768	3
SPA 769	2
SPA 794	1-3
SPA 780	1-3
SPA 797	1-6

Early Childhood Special Education Endorsement – Students who are interested in working with young children with special needs may complete interdisciplinary courses, which lead to a Nevada teaching endorsement in early childhood special education. Additional information is provided in the College of Education section of this catalog.

For further information on the speech pathology and audiology graduate program, contact the department chair.

Professional Degree Programs

Four-year Medical School Program

The School of Medicine was established in 1969 on the Reno campus as a two-year basic sciences program and was authorized to convert to a four-year, M.D. degree-granting school in 1977 by the state legislature. In 1980, the school graduated the first class of physicians trained completely in Nevada.

The school emphasizes the development of primary care physicians who will provide comprehensive health care, meeting the needs of the individual, the family and the community.

Classes, laboratories and clinical activities take place in a combination of on-campus buildings and community health facilities in both urban and rural Nevada. Affiliation agreements with hospitals located throughout the state provide students with access to clinical facilities totaling nearly 2,000 beds.

The School of Medicine is fully accredited by the Liaison Committee on Medical Education.

The four-year medical school curriculum is divided into two components: the basic sciences and the clinical sciences.

The Basic Science Years

During their first two years of instruction, students are provided with opportunities to learn the facts and concepts essential to the practice of medicine from seven basic sciences—biochemistry, behavioral sciences, anatomy, physiology, microbiology, pathology and pharmacology; the elementary skills necessary for entering the clinical years; and methods of integrating basic and clinical sciences.

First Year

	Credits
B CH 601-602	9
ANAT 601	6
ANAT 602	3
ANAT 603	4
PCHY 601	3
PCHY 660	3
PHSY 601	6
PHSY 602	5
MED 601	4
MED 670	2
FCM 601	1
FCM 663	4
	50

Second Year

	Credits
MICR 601	9
PHAR 601	9
PATH 601	4
PATH 602	6
PATH 603	2
PATH 604	2
PCHY 602	4
MED 602	4
MED 673	2
FCM 676	3
	45

A clinical medicine preparation course (PCM) is a required course taken prior to the student's first clinical clerkship. The course is not taken for credit.

At the end of the second year, students are required to take Step I of the U.S. Medical Licensing examination. Students must earn a passing score to continue course work in the second semester of the third year.

The Clinical Years

The second two years of medical school are spent in Reno, Las Vegas and rural Nevada communities in the clinical setting (in doctors' offices, the affiliated hospitals and university-operated ambulatory care centers). The School of Medicine currently requires that students complete the following clinical rotations: family and community medicine, eight weeks; internal medicine, 12 weeks; obstetrics and gynecology, eight weeks; pediatrics, eight weeks; psychiatry, eight weeks; and surgery, 12 weeks.

Students are required to take the internal medicine and surgery rotations during the third year of study and they must also select three of the four eight-week rotations during the third year. The remaining eight-week rotation is taken during the fourth year. Although these are the clinical requirements at the time of printing the catalog, they are likely to change as the faculty revises the curriculum.

The rotations are conducted under close supervision of medical school faculty and residents.

Required Clerkships: Third and Fourth Year

	Credits
IMED 451, 651	12
SURG 451, 651	12
OBGY 451, 651	8
PEDI 451, 651	8
PCHY 451, 651	8
FCM 451, 651	8
	56

Additional Required Clinical Courses

	Credits
FCM 461a	4
Electives	24
	28

In addition to the final rotation, fourth-year medical school students choose a number of elective courses, both in Nevada and out of state, to develop depth and breadth in their clinical training. The choices are based on their interests, potential strengths and desire to enhance clinical skills.

Students also spend a required four-week rotation with a rural Nevada physician in order to become acquainted with the practice of medicine in a small community.

Also in the fourth year, students must take Part II of the National Boards.

Requirements for Entrance

Because the School of Medicine utilizes the centralized application service of the Association of American Medical Colleges (AAMC), students must submit their applications through the American Medical College Application Service (AMCAS). Applications may be obtained from the university's Health Career Advisement office, the Admissions Office at the medical school or the AAMC, 1776 Massachusetts Avenue, Northwest, Washington, D.C. 20036. The completed application must be sent directly to AMCAS. **The application deadline is Nov. 1.**

The Medical College Aptitude Test (MCAT) is required of all applicants. The exam is offered twice yearly, once in the spring and once in the fall. Registration packets for the MCAT may be obtained from the Testing Services Office or from the Admissions Office at the medical school. The MCAT must be taken within three years of the anticipated date of enrollment and no later than the fall prior to the planned year of entrance.

NOTE: MCAT test scores earned prior to 1991 will not be accepted.

In addition to the MCAT, a minimum of three years of college study (90 semester hours) is required for admission to the medical school. The Admissions Selection Committee strongly recommends completion of a bachelor's degree.

Application requirements include:

	Semester Credits
Chemistry (including 8 credits of organic chemistry)	16
Biology	8
Physics	8
Behavioral Sciences (three credits of the behavioral-science requirement must be upper-division)	6

Students should take courses that deal with the psychological stages of the life cycle in fulfilling the behavioral science requirement (human growth and development, adolescence, aging, human sexuality, abnormal psychology, family dynamics, or medically-oriented sociology). Supplementary courses strongly recommended as useful to the study or practice of medicine but *not required* for admission include: history, literature, philosophy, ethics and computer science.

Students are required to demonstrate competency in English composition and language. Generally, students are expected to satisfy the English composition requirements of their undergraduate institution.

Accepted students are responsible for completing all prerequisite course work prior to beginning classes. Students will not be allowed to use credit by examination, satisfactory/unsatisfactory (S/U) grades, or audit grades in lieu of a letter grade for required courses.

Students are strongly encouraged to apply for admission during the summer months.

Selection Factors

Candidates are evaluated on the basis of academic performance; performance on the MCAT; the nature, breadth and depth of their scholarly, extracurricular and health-care related activities during college years; their balanced knowledge of the natural sciences, social sciences and humanities; academic letters of evaluation; and personal interview, if requested by the Admissions Selection Committee.

Legal residents of Nevada are given the highest priority for admission. A small number of out-of-state applicants who have a strong residential connection to Nevada are considered each year. Residents of Alaska, Idaho, Montana or Wyoming, all generally rural, Western states without medical schools, are also considered. Individuals who do not meet these residential requirements are discouraged from applying to the University of Nevada, Reno. Those students who are not U.S. citizens must have permanent resident visas and be Nevada residents to be considered for admission.

Mackay School of Mines

James L. Hendrix, *Acting Dean*
Dean's Office: Second Floor, Mackay School of Mines, 784-6987

For footnote explanation, see page 134

Departments of Instruction:

Chemical and Metallurgical Engineering
Computer Science
Geological Sciences
Mining Engineering

Objectives

The primary objective of the Mackay School of Mines is to provide a comprehensive education for geoscientists and mineral resource engineers seeking professional careers in the mineral and energy industries. The school also has a mission to develop highly competent research scientists who will provide new insights into the origin of mineral and energy resources and their distribution, and to produce outstanding geoscientists who will make major contributions to improving understanding of the origin and evolution of the solid earth. Assisted by the resources of the computer science department, housed within the School of Mines, the school seeks to include the latest in high technology for its academic programs.

The curricula of the Mackay School of Mines are rigorous and demanding. Students who plan to begin studies in the school should be well-prepared in mathematics, physics and chemistry. Although the school's emphasis is on preparation for professional fields, well-rounded general education courses are included in the course of study.

Auxiliary Organizations

The original Mackay School of Mines building will house the expanded G.W. DeLaMare Mines and Engineering Library, the W.N. Keck Mineral Museum and administrative offices of the Mackay School of Mines.

The G.W. DeLaMare Mines and Engineering Library supports undergraduate studies and graduate research in all disciplines. The W.N. Keck Mineral Museum displays rare collections of minerals, Nevada ores and fossils that are used extensively in teaching and research.

The Nevada Bureau of Mines and Geology, Seismological Laboratory and Mackay Mineral Resources Research Institute share facilities in the same building complex. Teaching staff and laboratory facilities are supplemented through programs conducted with the Water Resources Center and the U.S. Bureau of Mines, which have large research centers on or near the campus. The school also maintains close contact with other state and federal agencies, as well as more than 100 geological, geophysical, exploration, engineering, metallurgical, mining and petroleum companies with offices in the Reno-Sparks area.

Degree Programs

The Mackay School of Mines offers the following degree programs:

Bachelor of Science Degrees—
Chemical engineering, computer science, geology, geological engineering, geophysics, materials science and engineering, metallurgical engineering and mining engineering.

Master's Degrees—
Computer science, geology, geological engineering, geochemistry, geophysics, hydrology and hydrogeology, metallurgical engineering and mining engineering.

Doctor of Philosophy—
Geology and related earth sciences, geophysics, hydrology and hydrogeology, and metallurgical engineering

Baccalaureate Degree Requirements

Students may graduate with degrees in any of the programs offered by the school, as listed at the time of admission or graduation. The student's choice of electives must be approved by the department in which the student enrolls, and in general, electives should be chosen to broaden the student's education in humanities and social studies or in fields of study related to the major subject. Undergraduate degrees are usually conferred within a field of concentration.

Required social studies or humanities electives must be selected from the prescribed list of courses.

Students who wish to pursue an academic minor follow the sequence of courses prescribed by the minor department and approved by the student's academic adviser.

Students seeking a bachelor's degree in the School of Mines may apply a maximum of 30 earned credits of satisfactory/unsatisfactory (S/U) grades only in social studies, humanities, nontechnical electives and approved technical courses. Credits earned with S/U grades may be transferred to the University of Nevada, Reno or taken at this university; however, they must be approved by the student's adviser.

Accreditation

The academic programs leading to the bachelor of science degrees in chemical engineering, geological engineering, metallurgical engineering and mining engineering are accredited by the Accreditation Board for Engineering and Technology, the agency accrediting engineering curricula throughout the United States. The Accreditation Board for Engineering and Technology is recognized by the Council on Postsecondary Accreditation.

Professional Engineer Degrees

The professional engineer degrees, Geological Engineer (Geol.E.) and Engineer of Mines (E.M.), may be conferred upon graduates of the Mackay School of Mines or upon graduates of other institutions who have obtained the university's master of science degree in engineering. Degree candidates must have held responsible positions in engineering for a period of at least five years (for those with bachelor of science degrees) or four years (for those who hold the master of science degree). Candidates must submit theses, displaying their ability to conduct advanced engineering work. Investigations in literature, compilations of routine laboratory tests, or presentations of the work of others are not considered.

Professional engineer degrees may also be conferred upon graduates of the Mackay School of Mines and upon graduates of other engineering colleges of equal standing when the graduate has met the following conditions:

1. Been actively involved, for a period of at least a year, in successful engineering work with a responsible position;
2. Have successfully completed one year of graduate work in engineer, including thesis, at the university.

Students must formally apply for graduation with a professional engineer degree not later than the beginning of the second semester of their year of graduation. The application must be approved by the faculty of the Mackay School of Mines and by the dean of the graduate school.

The application must be accompanied by detailed evidence of the applicant's professional work. The thesis or publication in final form must be approved by a committee appointed by the graduate dean and must be presented to the faculty of the Mackay School of Mines and to the dean of the graduate school at least eight weeks before the date of graduation.

CHEMICAL and METALLURGICAL ENGINEERING (CH E, MET E)

Department Office: 306 Laxalt Mineral Engineering Center, 784-4307

Bachelor of Science in Chemical Engineering

Chemical engineers apply the basic principles of chemistry, physics, mathematics and related engineering disciplines to the production of goods and materials for society. A chemical engineering graduate has the capability for serving the needs of industry or for pursuing advanced academic training. Graduates of the chemical engineering program in the Mackay School of Mines are recruited by the mineral and process industries.

In addition to the general university requirement of at least a 2.0 grade-point average, the student must hold at least a C average in all chemical and metallurgical engineering courses to be eligible for graduation.

Freshman Year – First Semester

	Credits
CHEM 201	4
EC 101	3
ENGL 101	3
MATH 181	4
METE 101	1
	15

Freshman Year – Second Semester

	Credits
C S 113	2
CHEM 202	4
ENGL 102	3
MATH 182	4
PHYS 201	3
PHYS 204	1
	17

Sophomore Year – First Semester

	Credits
CH E 232	3
CHEM 343	3
MATH 281	4
PHYS 202	3
PHYS 205	1
W T 201	3
	17

Sophomore Year – Second Semester

	Credits
CHEM 344	3
MATH 285	3
MECH 241	3
PHYS 203	3
W T 202	3
	15

Junior Year – First Semester

	Credits
CE 372	3
CH E 373	3
CHEM 353	3
EE 201	3
W T 203	3
Math technical elective*	3
	18

Junior Year – Second Semester

	Credits
CH E 361	4
CH E 374	3
CH E 441	1
CH E 484	3
CHEM 354	3
CHEM 355	3
	17

Senior Year – First Semester

	Credits
CH E 442	2
CH E 450	3
CH E 451	3
CH E 485	3
Fine arts core course	3
Technical elective*	3
	17

Senior Year – Second Semester

	Credits
C E 440	3
CH E 482	3
Social studies or humanities elective	3
Technical elective*	3
Technical elective*	3
	15

Total credits required—131
* Requires approval by adviser

Bachelor of Science in Materials Science and Engineering

Materials science and engineering includes elements from a variety of engineering disciplines, and the demand for professionals in the field has been growing rapidly. Engineers trained in materials science are at the forefront in the development of materials designed to contain ultra-high temperatures and pressures in aircraft, spacecraft and energy generation systems. In the materials field, engineers also develop electronic, photovoltaic and superconductor devices, as well as other high-technology innovations.

The materials science and engineering program requires that students gain basic preparation in chemistry, physics and mathematics during their first two years of university-level study. Early in the sophomore year, students are taught the principles of the atomic and microscopic structure and properties of metallic, ceramic, polymeric (plastic), composite and electronic materials. Advanced instruction, featuring specialized courses in crystal structure, mechanical and physical properties of materials, corrosion and solid state reactions, is included in the course of study. Graduates can pursue a diverse selection of careers, including materials processing and manufacturing, materials selection for advanced applications and design and development of new materials. Outstanding graduates may also pursue advanced graduate study.

Freshman Year – First Semester

	Credits
CHEM 201	4
EC 101 or 102	3
ENGL 101	3
MATH 181	4
METE 101	1
	15

Freshman Year – Second Semester

	Credits
C S 113	2
CHEM 202	4
ENGL 102	3
MATH 182	4
PHYS 201	3
PHYS 204	1
	17

Sophomore Year – First Semester

	Credits
GEOL 211	3
MATH 281	4
METE 232	3
METE 250	3
PHYS 202	3
PHYS 205	1
	17

Sophomore Year – Second Semester

	Credits
MATH 285	3
MECH 241	3
METE 416	3
PHYS 203	3
W T 201	3
Social studies, humanities elective	3
	18

Junior Year – First Semester

	Credits
C E 372	3
CH E 373	3
CHEM 353	3
METE 460	4
W T 202	3
	16

Junior Year – Second Semester

	Credits
CH E 361	4
CHEM 354	3
METE 461	3
W T 203	3
Math technical elective*	3
	16

Senior Year – First Semester

	Credits
CHEM 142	3
E E 201	3
METE 450	3
Fine arts core course	3
Technical elective*	3
Technical elective*	3
	18

Senior Year – Second Semester

	Credits
CHEM 442	3
METE 430	3
METE 472	3
METE 482	3
Technical elective*	3
	15

Total credits required—132

*Requires approval by adviser

Minor in Materials Science

The chemical and metallurgical engineering department offers an undergraduate minor in materials science for students majoring in engineering and physical sciences.

The university requires students earn at least 18 credits in the minor field of study, nine of which must be in 300- or 400-level courses. Students are required to earn at least 12 of the 18 credits in courses offered by the chemical and metallurgical engineering department (see first list below.). The remaining six or more credits may be taken from the second list of approved courses in other departments. Any of the 18 credits may also satisfy other requirements in the undergraduate major.

The student's program of study must be selected in consultation with an adviser in chemical and metallurgical engineering.

In order to receive official recognition of the minor, a student must request such recognition on the Application for Graduation.

Metallurgical Engineering Courses

	Credits
METE 250	3
METE 332	3
METE 401	3
METE 416	3
METE 460	3
METE 461	3
METE 472	3

Other approved courses

C E 246	3
C E 369	1
C E 372	3
C E 374	1
C E 420	3
C E 431	3
CHEM 442	3
E E 202	2
MECH 430	2
MECH 445	3
MECH 446	3
PHYS 421	3
PHYS 426	3
PHYS 473-474	6

Metallurgical Engineering

Metallurgical engineers apply the principles of science, mathematics and engineering to the extraction, refining and utilization of metallic and non-metallic substances from their naturally occurring ores. Metallurgical engineering graduates may assume positions in industry or pursue graduate-level study.

In addition to the university's general graduation requirement of a minimum 2.0 grade-point average, degree candidates must maintain at least a 2.0 average in all chemical engineering and metallurgical engineering courses.

Freshman Year – First Semester

	Credits
CHEM 201	4
EC 101 or EC 102	3
ENGL 101	3
MATH 181	4
METE 101	1
	15

Freshman Year – Second Semester

	Credits
C S 113	2
CHEM 202	4
ENGL 102	3
MATH 182	4
PHYS 201	3
PHYS 204	1
	17

Sophomore Year – First Semester

	Credits
GEOL 211	3
MATH 281	4
METE 232	3
METE 250	3
PHYS 202	3
PHYS 205	1
	17

Sophomore Year – Second Semester

	Credits
E E 201	3
MATH 285	3
MECH 241	3
METE 322	3
METE 324	1
W T 201	3
	16

Junior Year – First Semester

	Credits
C E 372	3
CH E 373	3
CHEM 353	3
METE 460	4
W T 202	3
	16

Junior Year – Second Semester

	Credits
CH E 361	4
CH E 484	3
CHEM 354	3
METE 421/461**	3
W T 203	3
	16

Senior Year – First Semester

	Credits
METE 410	3
METE 411	1
METE 431	3
METE 450	3
Fine arts core course	3
Math technical elective*	3
	16

Senior Year – Second Semester

	Credits
CH E 440/METE 430**	3
CH E 451/METE 416**	3
METE 482	3
Social studies or humanities elective	3
Technical elective*	3
Technical elective*	3
	18

Total credits required—131
*Requires approval by adviser
**Extractive metallurgy/physical metallurgy emphasis

Advanced Degrees

The department offers programs leading to the master of science and doctor of philosophy degrees in metallurgical engineering. The general university requirements for these advanced degrees are listed in the Graduate School section of this catalog.

Students must have a bachelor's degree from an accredited college or university to gain admission to graduate school. For full graduate standing, they must complete at least 30 credits of undergraduate work in metallurgy, chemical engineering and/or a related science. In addition, students must meet at least one of the following requirements:

1. Hold a cumulative grade-point average of 2.75 for four years of undergraduate work;
2. Hold a cumulative grade-point average of 3.0 for the last two years of undergraduate work;
3. Earn acceptable scores on the verbal and quantitative portions of the Graduate Record Examination, and submit letters of recommendation from former instructors indicating their capability for advanced course work and research.

Prospective graduate students should contact the department chair for further information. Formal application is completed through the Office of Admissions and Records.

The department offers several graduate fellowships, research assistantships and teaching assistantships. Requests for assistance should be submitted prior to March 15, but all applications will be considered regardless of the date they are submitted.

In order to assure well-balanced training and experience, all graduate students are required to participate in teaching and research.

COMPUTER SCIENCE (C S)

Department Office: 312 Laxalt Mineral Engineering, 784-6974

The department offers courses leading to an undergraduate and a graduate degree: the bachlelor of science in computer science and master of science degree with a major in computer science.

Undergraduate students majoring in science and engineering may take computer science as a second major. An undergraduate minor in computer science is also offered.

Bachelor of Science in Computer Science

The bachelor of science in computer science degree requires students to have a foundation in mathematics and science. Freshmen and sophomore students who wish to major in computer science are designated as precomputer science majors upon admission to the university. They may later be accepted into the computer science major based upon academic performance.

Required Courses

	Credits
C S 183, 283, 285, 330, 333, 336, 386, 387, 431, 485, 486, 495, 496;	38
CHEM 101[1]; PHYS 201[1], 202, 203, 204[1], 205, 206;	16
MATH 181[1]; 182; 281; 285 or 307; 330; 352; 381	24

Technical Electives (select 15 credits)

C S 434, 437, 439, 481, 482, 483, 484, 487, 488, 489, 493; CH E 434; E E 422, 423, 424, 427, 428, 439, 481, 484; MATH 307, 435, 452, 453, 454; PHYS 355, 466	15
	93

The following curriculum is suggested for students pursuing the bachelor's degree and indicates which semester upper-division computer science courses may be offered:

Freshman Year – First Semester

	Credits
C S 183	4
CHEM 101	4
ENGL 101[1]	3
MATH 181	4
	15

Freshman Year – Second Semester

	Credits
C S 283	3
ENGL 102[1]	3
MATH 182	4
PHYS 201	3
PHYS 204	1
Core Curriculum requirement	3
	17

Sophomore Year – First Semester

	Credits
C S 285	3
MATH 281	4
MATH 352	3
PHYS 202	3
PHYS 205	1
Core Curriculum requirement	3
	17

Sophomore Year – Second Semester

	Credits
C S 386	3
MATH 330	3
MATH 381	3
PHYS 203	3
PHYS 206	1
Core Curriculum requirement	3
	16

Junior Year – First Semester

	Credits
C S 333	3
C S 387	3
General elective	2
Technical elective	3
Core Curriculum requirement	6
	17

Junior Year – Second Semester

	Credits
C S 330	1
C S 336	3
MATH 285 or 307	3
General elective	3
Technical elective	3
Core Curriculum requirement	3
	16

Senior Year – First Semester

	Credits
C S 486	3
C S 495	3
General elective	2
Technical elective	6
Core Curriculum requirement	3
	17

Senior Year – Second Semester

	Credits
C S 431	3
C S 485	3
C S 496	3
General elective	3
Technical elective	3
	15

Total credits required—130

Computer Science as a Second Major

For students with science and engineering majors, the department offers computer science as a second major. The bachelor of science degree offering is limited to students whose primary major is mathematics, physics, chemistry, biology, biochemistry, geology, geophysics, or any of the seven engineering fields offered at the university. The course requirements for the major are:

C S 183	4
C S 283	3
C S 285	3
C S 333	3
C S 386	3
C S 387	3
C S 485	3
C S 486	3
Computer science courses numbered 300 or above	9
	34

Minor in Computer Science

The computer science minor is open to all students at the university. Required courses are C S 183, 283 and 285. Students also must earn nine credits in upper-division computer science courses. A maximum of three credits from C S 489 or C S 493 may be applied toward the minor.

Students who complete the minor have a strong technical foundation upon which to build further expertise in computer science, and they can strengthen their understanding of the applications of computers in their selected fields.

Master of Science Degree in Computer Science

The department offers an integrated course of study leading to the degree of master of science with a major in computer science. Students investigate the fundamental properties of digital-information processing systems and their applications, studying aspects of both hardware and software.

Current interests of the faculty include: computability, computational complexity, computer networks, distributed and parallel computing, functional programming, fuzzy logic, image processing, intelligent systems, logic programming, machine learning, neural networks, numerical analysis, operating systems, pattern recognition, programming languages, program specification, real-time scheduling, simulation, and software engineering.

Students who are accepted into the graduate program are expected to meet requirements for a bachelor's degree in engineering, mathematics, or science, and have minimum experience that includes the equivalent of the computer science minor. The department may also prescribe other prerequisites for program admission for students whose undergraduate degree is not in computer science.

GEOLOGICAL SCIENCES (GEOL)

Department Office: 401 Laxalt Mineral Engineering Center, 784-6050

Bachelor of Science in Geology

The curriculum leading to the bachelor's degree in geology prepares students for a professional career in the earth sciences. By selecting specific options, students may focus study in mineral industry and enviromental fields, as well as general geology. All options provide background that will allow students to pursue further scientific or technical study at the graduate level.

The suggested curriculum for undergraduates is listed below:

Freshman Year – First Semester

	Credits
ENGL 101	3
Foreign language elective[2]	4
GEOL 101	3
GEOL 103	1
Mathematics sequence[3]	3-5
	14-16

Freshman Year – Second Semester

	Credits
ENGL 102	3
Foreign language elective[2]	4
GEOL 102	4
Mathematics sequence[3]	3-4
	14-15

Sophomore Year – First Semester

	Credits
C S 113 or C S 105	2-3
CHEM 201	4
GEOL 211	3
EC 101, EC 102 or mathematics sequence[3]	3-4
W T 201	3
	15-17

Sophomore Year –Second Semester

	Credits
CHEM 202	4
GEOL 212	3
W T 202	3
Fine arts core course	3
Elective; EC 101 or 102	3-4
	16-17

Junior Year – First Semester

	Credits
G E 385	3
GEOL 332	4
GEOL 351	3
GEOL 468	3
PHYS 201[4]	3
PHYS 204	1
	17

Junior Year – Second Semester

	Credits
GEOL 450	1
GEOL 469	3
PHYS 202[4]	3
PHYS 205	1
Geology specialization course[5]	3-4
Elective[5]	0-4
	14-16

Summer Camp

	Credits
GEOL 451	6

Senior Year – First Semester

	Credits
GEOL 425	3
GEOL 461	4
GEOL 471	3
Geology specialization course[5]	3-4
Elective[5]	0-4
	13-18

Senior Year – Second Semester

	Credits
W T 203	3
Geology specialization course[5]	3-4
Geology elective[5]	3-4
Elective(s)[5]	0-6
	9-17

Required specialization courses for geological sciences program options:

General Geology Option

	Credits
GEOL 290, 455, 490, 492, 494	3-4
GEOL 341	3
GEOL 427	3
	9-10

Economic Geology Option

	Credits
GEOL 290 or 492	3-4
GEOL 489	3
MINE 210 or 472	3
	9-10

Enviromental Option

	Credits
GEOL 480	3
GEOL 484 or 341	3
GEOL 404 or 290, 455, 490, 492, 494	3-4
GEOL 474	1
	10-11

Total credits required—128. Students must take all courses within one of the geological science program options. Military science courses numbered below 300 and recreation and physical education courses do not apply to the required credit total. It is recommended that students meet with their adviser at least once each semester.

Geological Engineering

Bachelor of Science in Geological Engineering

The curriculum leading to the bachelor's degree in geological engineering develops students' professional abilities in both engineering and the geological sciences. The program provides instruction in both geology and engineering, and allows students to specialize during the senior year. Students may select either a geotechnical option (featuring study of civil, mining petroleum and consulting engineering fields), or a resources and environment option, which deals with the aspects of enviromental planning for the mineral industries. Technical electives, approved by an adviser, provide students with flexibility within either option.

Seniors are required to take the Engineers-in-Training (EIT) examination.

The following is the suggested curriculum for undergraduates:

Freshman Year – First Semester

	Credits
CHEM 101	4
ENGL 101	3
G E 106	1
GEOL 101	3
GEOL 103	1
MATH 181	4
	16

Freshman Year – Second Semester

	Credits
CHEM 102	4
ENGL 102	3
MATH 182	4
PHYS 201	3
PHYS 204	1
	15

Sophomore Year – First Semester

	Credits
C S 113	2
G E 385	3
GEOL 211	3
MATH 281	4
PHYS 202	3
PHYS 205	1
	16

Sophomore Year – Second Semester

	Credits
E C 101 or 102	3
GEOL 212	3
MECH 241	3
MECH 299	3
W T 201	3
Fine arts core course	3
	18

Junior Year – First Semester

	Credits
C E 372	3
G E 481	3
G E 483	4
GEOL 332	4
GEOL 468	3
	17

Junior Year – Second Semester

	Credits
C E 141	3
C E 367	3
C E 492	3
GEOL 341	3
MECH 371 (or equivalent)	3
Technical electives	3
	18

Junior Year – Summer Camp

	Credits
GEOL 451	6

Senior Year – First Semester

	Credits
G E 478	3
G E 479	3
G E 484	3
SPCM 113	3
W T 202	3
	15

Senior Year – Second Semester

	Credits
G E 480	3
G E 485	4
G E 487	4
W T 203	3
Social studies or humanities elective	3
	17

Total credits required—138. Military science courses numbered below 300 and recreation and physical education courses do not apply to the required credit total.

Geophysics

Bachelor of Science in Geophysics

The curriculum leading to the bachelor's degree in geophysics develops trained personnel in such fields as gravity, magnetic and electrical geophysical exploration; seismic exploration; theoretical seismology; and electromagnetic remote sensing. Students must have basic skills in physics and mathematics; as well as in geology and geophysics to make satisfactory progress in this major. Optional courses are offered for students who plan to enter graduate study. The following are the minimum requirements for undergraduate majors, who need 130 total credits for graduation:

Required Technical Courses in Geological Sciences—40 credits
24 credits in fundamentals of geology: GEOL 101, 102, 103, 211, 212, 290, 332, 450, 451
16 credits in geophysics: GEOL 455, 490, 492, 494

Other Required Technical Courses—44 credits
CHEM 101. 102; PHYS 201, 202, 203, 204, 205, 206; any two courses from PHYS 351, 352, 473, 474; MATH 181, 182, 281; MECH 299, 403

Core Curriculum Courses—24 credits
The 24-credit total excludes 12 credits in math and science core courses, which are satisfied by the major requirements above. The total also excludes three credits of Capstone courses in geological sciences.
Electives—22
Total Credits Required—130

The following courses are strongly recommended: C S 113; MATH 330; PHYS 351, 352, 355, 473, 474; GEOL 341, 351, 404, 414, 469, 471, 474, 476, 480, 484; G E 479. Students should consult with their adviser to design a program consistent with their career objectives and to select additional technical electives.

Advanced Degrees

The department offers master of science and doctor of philosophy degrees in geology and related earth sciences, geophysics, hydrology and hydrogeology, and a master of science degree in geological engineering. The general university requirements for all advanced degrees are listed in the Graduate School section of this catalog.

Foreign Language Requirements
Students, in some instances, may be required to demonstrate their ability to read and comprehend the technical literature in a foreign language.

General Admission Procedures
Students must hold a bachelor's degree from an accredited college or university to be accepted as a graduate student. For full graduate standing, at least 30 credits of undergraduate work in geology and/or related fields must be completed.

In order to have their application considered, students must meet the following *minimum* departmental requirements:

1. Hold a four-year undergraduate grade-point average of 2.75, or a 3.0 average for the final two years of undergraduate study;

2. Post a combined score of 1,050 or higher in verbal plus quantitative sections of the Graduate Record Examinations (GRE);

3. Earn an advanced GRE score of 580 or higher (applicants for advanced degrees in hydrogeology and geological engineering are not required to take the advanced examination).

The applicant must fulfill all requirements of the Office of Admissions and Records and, in addition, must: 1.) send three letters of recommendation to the department chair, certifying an ability to perform graduate-level work; 2) send the chairman a brief letter specifying an area(s) of scholastic interest in the geological sciences.

Complete applications must be received no later than March 15 for fall semester admission or Oct. 15 for spring semester admission.

Degree candidates in the Ph.D. program must hold an overall grade-point average of at least 3.0. Provisional admission is permitted with grade-point averages below 3.0 in *exceptional* cases. In addition, the Ph.D. degree candidate must meet the requirements listed above.

The department offers a variety of graduate fellowships, research assistantships and teaching assistantships. Although most requests for assistance should be submitted prior to March 15, many assistantships are awarded later in the year and all applications are considered regardless of date of submission.

Specific program requirements are outlined in the following descriptions:

Master of Science and Doctor of Philosophy in Geology; Master of Science in Geological Engineering

Students may enter either a major or major-minor program in geology or geological engineering, choosing an appropriate course of study for their goals and basic training.

In addition to the related advanced degrees listed below, students may specialize in various fields, such as: active tectonism, earth science, engineering geology, exploration geophysics, economic geology, geochemistry and hydrogeology. Other programs of study include: mineral exploration, mineralogy, ore deposits, paleontology, petrography and petrology of igneous and metamorphic rocks. Additional specializations include: sedimentation, seismology, stratigraphy and volcanology.

The location of the university campus at the edge of the Great Basin and Range and Sierra Nevada geological provinces provides students with an excellent locale for field or regional studies. The exceptional facilities available in the area make it possible to undertake laboratory studies in geochemistry, geophysics, hydrogeology, mineralogy, mineralization, petrography and petrochemistry.

Students enrolled in one of the masters programs are required to take the department's comprehensive examination no later than their third semester. The examination requirements for the Ph.D. degrees are outlined in the Graduate School section of this catalog.

Master of Science and Doctor of Philosophy in Geophysics

In this study specialization, research facilities include an array of both permanent and portable seismographic stations, seismic field equipment, along with other important instruments and equipment for field and laboratory studies with electromagnetic remote sensing data.

Graduate study in this field focuses on both theoretical and practical work in seismology, gravity and other geophysical fields, taking advantage of the unique character of the Great Basin and Range and Sierra Nevada regions.

Student support is available through a number of research assistantships.

Students enrolled in the master's program are required to take a written comprehensive examination no later than their third semester. The examination requirements for the Ph.D. degree are outlined in the Graduate School section of this catalog.

Master of Science and Doctor of Philosophy in Hydrology and Hydrogeology

Master of science and doctor of philosophy degrees may be earned in hydrology and hydrogeology in an interdisciplinary program. For specific program information, refer to the Interdisciplinary and Special Programs section of this catalog.

Examination procedures for the degrees are given in the Graduate School section of the catalog.

MINING ENGINEERING (MINE)

Department Office: 413 Laxalt Mineral Engineering Center, 784-6961

Bachelor of Science in Mining Engineering

The department offers a bachelor's degree in mining engineering. The program includes courses in mine design, mining technology, computer applications to operations control and management, environmental concerns, industrial safety and health and mineral economics. The curriculum is arranged to provide students with a broad background for a career as a modern mining engineer. Graduates are prepared for industrial employment or further advanced study.

The department maintains a close liaison with state and federal bureaus of mines and with the mineral industry. Field excursions for students are arranged during the academic year, and they are required to work in the minerals industry during at least one summer vacation. Some cooperative work study programs are arranged for this purpose.

The professional Engineers-in-Training (EIT) examination, administered by a State Board of Engineering Registration, must be taken by all mining engineering students during the senior year of study.

The following is the suggested curriculum for undergraduates:

Freshman Year – First Semester

	Credits
CHEM 101 or 201	4
ENGL 101	3
GEOL 101	3
GEOL 103	1
MATH 181	4
MINE 101	1
	16

Freshman Year – Second Semester

	Credits
C S 113	2
CHEM 102 or 202	4
ENGL 102	3
MATH 182	4
PHYS 201	3
PHYS 204	1
	17

Summer

	Credits
MINE A (report required)	none

Sophomore Year – First Semester

	Credits
G E 385	3
GEOL 211	3
MATH 281	4
MECH 241	3
MINE 210	2
W T 201	3
	18

Sophomore Year –Second Semester

	Credits
MECH 242	3
MECH 299	3
MINE 242	3
MINE 361	3
PHYS 202	3
PHYS 205	1
	16

Summer

	Credits
MINE 243	2

Junior Year – First Semester

	Credits
C E 367	3
E E 201	3
GEOL 332	4
MECH 371	3
W T 202	3
	16

Junior Year – Second Semester

	Credits
C E 372	3
EC 102	3
METE 322	3
METE 324	1
MINE 310	2 or 3
MINE 344	3
MINE 411	2
	17-18

A required senior field trip is generally taken between the junior and senior years.

Senior Year – First Semester

	Credits
GEOL 471	3
MINE 413	3
MINE 415	2
MINE 425	2 or 3
MINE 448	4
MINE 472	3
Technical elective[6]	1
	18-19

Senior Year – Second Semester

	Credits
MINE 400	1
MINE 418	3
MINE 435	2 or 3
MINE 445	2
W T 203	3
Fine arts core course	3
Technical elective[6]	3
	17-18

Total credits required—137.
Military science courses numbered below 300 and recreation and physical education courses do not apply to this total.

Advanced Degrees

The department offers programs leading to the degree of master of science in mining engineering. The general university requirements for advanced degrees are listed in the Graduate School section of this catalog.

The student can elect to pursue one of two program tracks at the graduate level. The first track is a traditional mining engineering program with specialization in various fields, such as: computer applications, automation, mine design, rock mechanics and materials handling. The second track is an option in mineral economics with specialization in fields relating to mine management, operations research and mineral economics.

A bachelor's degree from an accredited college or university is required in order to be accepted as a graduate student. For full graduate standing, at least 30 credits of undergraduate work in mining engineering or related sciences must have been completed.

In addition, students must meet at least one of the following requirements:

1. Hold a cumulative grade-point average of 2.5 for four years of undergraduate work;
2. Hold a cumulative grade-point average of 3.0 for the last two years of undergraduate work;
3. Earn acceptable scores on the verbal and quantitative portions of the Graduate Record Examination aptitude test, and present letters of recommendation from former instructors indicating capability for advanced course work and research.

Prospective graduate students should send an outline of major interests, experience and transcripts directly to the department chair. Formal application is completed through the Office of Admissions and Records.

The department offers several graduate fellowships, research assistantships and teaching assistantships. Requests for assistance should be submitted prior to March 15, but all applications will be considered regardless of date of submission.

A written comprehensive examination is required of all mining engineering graduate students. Degree candidates must earn a passing grade on the exam with only two attempts allowed. Students who do not pass the exam after two attempts will be suspended from the graduate program.

Footnotes

[1] Satisfies university Core Curriculum requirements.
[2] Satisfied by the completion of any first-year sequence in the department of foreign languages and literatures
[3] Mathematics requirement should be completed as soon as possible during the undergraduate program. The requirements are: MATH 178 and 179 (or MATH 181 and 182). Students who cannot meet the prerequisites for MATH 178 should take MATH 128.
[4] The two-semester physics sequence may be taken in the sophomore year by students who have completed the appropriate mathematics courses.
[5] Electives and geological science option courses may be taken in a different order than specified, as some courses are not offered each semester.
[6] Technical electives may be selected in a field of special interest to the student; they must be approved by the adviser and the department chair.

Orvis School of Nursing

Jean L. Perry, *Acting Dean*
Dean's Office: 223 Orvis School of Nursing, 784-6841

For footnote explanation, see Page 138

Objectives

The focus of the curriculum in the Orvis School of Nursing is to provide learning opportunities for students that enable them to develop and demonstrate a wide range of abilities. Students who complete the curriculum will be able to:

1. Use the knowledge derived from the humanities and behavioral, physical and natural sciences in order to assess, plan, implement and evaluate the health care of clients—individuals, families and groups;
2. Strive for productive health care delivery that is consistent with contemporary cultural, social and scientific values;
3. Provide nursing care for clients in a variety of health care settings;
4. Coordinate and consult with colleagues on interdisciplinary health teams in health care delivery;
5. Accept individual responsibility for nursing interventions and their results;
6. Strive for continual personal growth and identity.

Degree Offerings

The Orvis School of Nursing offers a bachelor of science in nursing degree and a master of science degree with a major in nursing.

Bachelor's Degree Program

The bachelor's degree program is designed to provide the high school graduate, as well as graduates of associate degree and diploma nursing programs, with the opportunity to obtain a baccalaureate degree in nursing. The bachelor's degree program is the basic preparation for professional nursing practice and leadership positions in nursing. After completing the program, the graduate is qualified for nursing positions in public health agencies, schools, hospitals and other health-care providers. Nursing school graduates may also earn commissioned status in the military services, as well as admission to graduate education.

The university's bachelor's degree program is approved by the Nevada State Board of Nursing and accredited by the National League for Nursing (NLN).

Curriculum Requirements

1. Total number of credits required for graduation—128
   Lower-division credits required—60-64
   Upper-division credits required—64-68

2. Lower-division requirements for prenursing majors.

Natural Sciences

	Credits
BIOL 223, 224	6
Basic statistics course	3
CHEM 101, 142, 143	8
Mathematics (MATH 120 or higher)	3
CLS 111	1
BIOL 251	3
Natural science elective[1]	3
NUTR 223	3
Elective[1]	3
	33

Behavioral Science

	Credits
HDFS 274	4
PSY 101	3
SOC 101	3
Behavioral science elective[1]	3
Cultural ethnic course[1]	3
	16

Communication Skills

	Credits
CHS 300	3
ENGL 101, 102	6
	9

Humanities

	Credits
W T 201	3
W T 202	3
W T 203	3
Fine arts course	3
	12

3. Upper-division requirements for nursing majors.

A.	Nursing science, self-learning skills laboratories and clinical practica: NURS 301, 303, 317, 318, 327, 328, 337, 417, 418, 427, 428, 441, 450	50
B.	NURS 419	3
C.	Clinical pharmacology	3
D.	Upper-division, non-nursing electives	5
E.	Capstone course (nonmajor)	3
		64

4. Progression Policies

A. Students attempting to progress to the junior nursing sequence must meet the following requirements:

1. Submit a formal application to the School of Nursing by the fourth week of spring semester;
2. Maintain at least a 2.75 cumulative grade-point average in lower-division courses;
3. Earn at least a C grade in prerequisite courses required of prenursing majors. General electives are not included in the requirement. The cumulative grade-point average earned in prerequisite courses is used to determine which students are selected to the upper-division nursing major;
4. Complete all lower-division course requirements for the prenursing major by the end of spring semester during the sophomore year;
5. Earn junior classification at the University of Nevada, Reno by the end of spring semester during the sophomore year (60 earned credits in prenursing major);
6. If the above requirements are completed during the summer session, the student will be considered on a space-available basis;
7. Take all required prerequisite courses for a grade, and not on a satisfactory/unsatisfactory (S/U) basis. Transfer credit and courses taken for S/U credit are evaluated on an individual basis.

Note: Students who fulfill the above requirements do not automatically progress to the nursing major. Nursing majors are selected on the basis of academic achievement, and therefore, are ranked

according to their grade-point average. Each year, students are accepted to the nursing major from the grade-point average ranking. Any student who enrolled in the Orvis School of Nursing prior to 1985 has the option of using the new admission rules.

B. In order to adequately progress within the nursing sequence, students must meet the following requirements:

1. Maintain at least a 2.0 cumulative grade-point average and achieve no less than a grade of C in each nursing course;

2. Achieve at least a grade of C in each specialty area (regardless of the combined grade in theory or practice courses);

3. Earn no less than a grade of C in pharmacology, statistics and research courses;

4. Students in the upper-division nursing program may have to withdraw from the program for academic or nonacademic reasons. If a student withdraws, the following criteria are considered in determining whether the student may re-enter the nursing major:

a.) Beginning with the admission date to the upper-division nursing major, students are allowed three years to complete requirements for graduation.

b.) Following withdrawal for academic reasons, students may re-enter the upper-division program only *one* time. Following withdrawal from the program for nonacademic reasons, the student's re-entry is at the discretion of the Admissions and Progressions Committee in consultation with the dean of the School of Nursing.

Academic Withdrawal: Students who are failing a nursing course, those who are considered clinically unsafe, or those students who have received less than "C" as a final grade will be given the option to return to the upper-division nursing program during the following academic year. This privilege may be used *one* time.

Nonacademic Withdrawal: Students who withdraw from the program for "personal reasons" are required to present a *written* explanation at the time of withdrawal. The explanation must clearly state: the exact reason for withdrawal, whether the student plans to return to the program, and the expected date of reentry. The student must be receiving a passing grade in clinical and theory courses at the time of withdrawal. The privilege to return to the program is given at the discretion of the Admissions and Progressions Committee, in consultation with the School of Nursing dean. Students with extraordinary personal circumstances are given individual consideration.

Readmission: Students who seek readmission to the upper-division nursing program must meet the following requirements: (1) see their adviser at least *four* months prior to the appropriate academic semester to complete a readmission petition; (2) confirm that the problems causing their nonacademic withdrawal have been resolved; (3) inform the Admissions and Progressions Committee of their intent to return to the upper-division program at least *four* months prior to their return; and (4) when requested, students returning to the upper-division program (Level II, III, or IV) may need to demonstrate competency in nursing skills.

5. Students who withdraw and/or transfer from the upper-division nursing program must apply directly to Orvis School of Nursing in order to be considered for readmission and placement. Eligibility depends upon space available and whether the student has met current School of Nursing progression requirements for the junior year.

6. Students who withdraw from NURS 317, 327, 417, 427 or 441 also must withdraw from NURS 318, 328, 418, 428 and 450, respectively.

7. All nursing practice courses must be taken concurrently with nursing theory and/or laboratory skills courses, as show below.

a. NURS 301, 303, 317, 318
b. NURS 327, 328
c. NURS 417, 418
d. NURS 427, 428
e. NURS 441, 450

A "generic student" at the school (one who has not completed the requirements for licensure as a registered nurse) who withdraws from any nursing course for *academic reasons* is required to withdraw from *all* concurrent nursing courses.

A "generic student" who withdraws from a nursing course for *personal reasons*, but is passing at the time of withdrawal, may be permitted to waive the concurrency policy upon the discretion of the Admissions and Progression Committee and/or the School of Nursing dean.

Withdrawing students who are registered nurses are considered on an individual basis.

8. Clinical pharmacology and statistics courses must be taken for a letter grade.

C. Students, after consulting with their advisers, may petition for course substitutions or other considerations pertaining to the Orvis School of Nursing's curriculum requirements. If a student completes required courses more than 10 years before applying to the nursing major, the courses must be evaluated for curriculum content. Requests for course substitutions or waivers that are not approved by an adviser may be submitted to the Admissions and Progressions Committee chair for consideration.

D. The following requirements for satisfactory/unsatisfactory (S/U) grading apply:

1. Students pursuing the bachelor's degree may earn a maximum of 30 semester credits in courses graded on an S/U basis;

2. A transfer student who has taken a course on an S/U basis must submit the course for curriculum evaluation and placement to the Admissions and Progressions Committee.

E. Those students who have taken special examinations must meet the following requirements:

1. Students who wish to earn credit for special examinations will be considered individually, in accordance with university policies;

2. Students who are registered nurses may earn up to 26 nursing credits by special examinations.

F. The following requirement applies for independent study:

1. Individual students will be provided with the opportunity to pursue areas of interest through independent study courses.

NOTE: Students are required to provide their own equipment, including tape recorders, bandage scissors, glasses, watches with second hands, stethoscopes, laboratory coats, uniforms and name pins. In addition, students should provide for their own health and liability insurance, as well as their transportation.

Students must also provide documentation of a physical examination, including a chest X-ray, taken at least six months before their enrollment in the junior and senior years of the program.

A hepatitis B vaccination and a rubella antibody is required prior to enrolling in the junior year of the nursing program. Other immunizations or tests may be required prior to admission.

Current CPR certification is required for all students during their junior and senior years.

Advanced Placement for Registered Nurses

The Orvis School of Nursing offers a program designed for registered nurses seeking the bachelor's degree. Students may fulfill lower-division requirements by transferring appropriate course work. As many as 26 upper-division nursing credits may be earned by special examinations or by graduation from a NLN accredited associate degree nursing program. Registered nurses enrolled in the upper-division nursing program must be licensed in the state of Nevada.

For further information, call the School of Nursing office at 784-6841. The RN program is currently being revised for graduates of National League for Nursing-accredited associate degree programs.

Master's Degree Program

Graduate education in nursing prepares nurses for leadership positions in health care. Graduate-level study also develops clinical competence and increased sophistication in exploring and identifying a theoretical framework for nursing practice.

Graduate education serves as an introduction to scholarly activity for those who wish to pursue the doctoral degree in nursing. Research focuses on the search for nursing knowledge, analysis and evaluation of nursing theory, and the study of strategies for nursing application. Graduate education also provides students with the opportunity to realize their creative potential and collaborate with other health-care professionals in maintaining effective nursing and health care.

The master's degree program offers two study options: clinical specialist and nursing administration. Within the clinical specialist option, students select a specific track in adult health, psychiatric/mental health, or childrearing family. All students are expected to develop research competence.

The master of science program is accredited by the National League for Nursing.

To complete the program, students are required to earn 44 to 50 semester credits with an option for thesis or professional paper.

The academic admission requirements are comprised of the following (Students must apply for admission through the Office of Admissions and Records.):

1. Students must earn a minimum combined score of 1,000 on the verbal and quantitative sections of the Graduate Record Examination (aptitude).

2. Students must maintain an overall undergraduate grade-point average of at least 2.75 or a grade-point average of at least 3.0 for the last half of the undergraduate program.

3. Students must complete a bachelor of science degree with an upper-division major in nursing *from an NLN-accredited nursing school*. The bachelor's degree curriculum must include the following specific course work:

a. Statistics;
b. Growth and development (must cover lifespan);
c. Basic research;
d. Physical-psychosocial assessment;
e. Nursing diagnosis.

Additional admission requirements are:

4. Students must have verification of current registration to practice nursing in the United States. Students must be registered to practice nursing in Nevada before they will be considered for admission to the program;

5. Master's degree candidates must submit a statement of their graduate-study goals;

6. Students must present three letters of reference, addressing their potential for success in graduate school. The reference letters should be collected from: a faculty member at the institution from which the applicant completed the bachelor's degree; the applicant's employer or supervisor; and from another individual who is familiar with the applicant.

If a student has taken prerequisite courses at least 10 years before applying for entry into the graduate program, those prerequisites are evaluated on an individual basis by the student's graduate adviser.

The total of required credits for completing the degree varies according to the options the student selects. The *minimum* number of required credits for completion of the master's degree is 44.

Students who plan to apply graduate-level credit earned at another university to the University of Nevada, Reno may be able to satisfy specific course requirements in the nursing program. Such students must provide specific course information for departmental review to determine if the transferred courses are equivalent to university requirements. If approved, such courses may be included in the official program of study.

Grade Requirements

Graduate nursing students must achieve a grade of at least "B" in required graduate-level nursing courses. Students who receive grades below "B" may repeat those courses only once.

Prerequisite for 700-level Nursing Courses

A prerequisite for *all* 700-level nursing courses is admission to the graduate program in the School of Nursing.

Objectives for the Master of Science Program

Clinical Specialist Option

Upon completion of the master's program, the graduate will:

1. Practice an advanced clinical nursing role within a theoretically-based framework, serving patients and families in a selected health care environment;
2. Demonstrate competence in a selected functional area;
3. Use the process and method of scientific inquiry in the study of nursing;
4. Contribute to the development of nursing science;
5. Function as a change agent within a selected health-care environment;
6. Acquire a foundation for doctoral study in nursing.

Program of study

	Credits
NURS 706	3
NURS 708	3
NURS 720	3
NURS 721	3
NURS 722, 723 or 724	3
NURS 730	3
NURS 731	3
NURS 732, 733 or 734	3
NURS 742, 743 or 744	3
	27
Advanced statistics (a graduate-level statistics course is required)	3
Clinical cognates (physiology or social behavioral course)	3
Electives	5-8
Thesis	6
or	
Professional paper and comprehensive examination	3

Students who select the clinical specialist option may also study a functional area of administration by completing the following courses, in addition to the above program of study:

	Credits
NURS 701	3
NURS 735	3

Administration Option

Upon completion of the master's program, the graduate will:

1. Practice an advanced administrative nursing role within a theoretically-based framework in a selected health-care environment;
2. Demonstrate competence in a selected functional area;
3. Use the process and method of scientific inquiry in the study of nursing;
4. Contribute to the development of nursing science;
5. Function as a change agent within a selected health-care environment;
6. Acquire a foundation for doctoral study in nursing.

Program of study	Credits
NURS 701	3
NURS 706	3
NURS 720	3
NURS 721	3
NURS 722, 723 or 724	3
NURS 730	3
NURS 735	3
NURS 745	3
	24

Advanced statistics (a graduate-level statistics course is required)	3
Administrative cognates (BADM 720, 721)	6
Electives	6-9
Thesis	6
or	
Professional paper and comprehensive examination	3

Students who select the administration option may also study a functional area of clinical practice by completing the following courses, in addition to the above program of study:

NURS 731	3
NURS 732, 733 or 734	3

Footnotes

[1] To be selected from a list of approved electives.

Graduate School

Kenneth W. Hunter, Jr., *Associate Vice President for Research and Graduate Dean*
Ronald C. Dillehay, *Associate Dean*
Dean's Office: 239 Getchell Library, 784-6869

Master's Degree Programs

Agricultural Economics
Animal Science
Anthropology
Atmospheric Science
Biochemistry
Biology
Business Administration
Cellular and Molecular Biology
Cellular and Molecular Pharmacology and Physiology
Chemistry
Civil Engineering
Computer Science
Counseling and Educational Psychology
Economics
Educational Leadership
Electrical Engineering
Elementary Education
English
Foreign Language and Literature (French, German and Spanish)
Geochemistry
Geological Engineering
Geology
Geophysics
History
Human Development and Family Studies
Hydrology and Hydrogeology
Journalism
Judicial Studies
Land Use Planning
Mathematics
Mechanical Engineering
Metallurgical Engineering
Mining Engineering
Music
Nursing
Nutrition
Philosophy
Physical Education
Physics
Plant Science
Political Science
Psychology
Public Administration
Resource Management
Secondary Education
Social Work
Sociology
Special Education
Speech Communication
Speech Pathology and Audiology
Teaching of English
Teaching of English as a Second Language
Teaching of Mathematics

Education Specialist Degree Programs

Counseling and Educational Psychology
Curriculum and Instruction
Educational Leadership

Doctor of Education Degree Programs

Counseling and Educational Psychology
Curriculum and Instruction
Educational Leadership

Combined Doctor of Medicine/Doctor of Philosophy Program

M.D./Ph.D

Doctor of Philosophy Degree Programs

Anthropology
Atmospheric Science
Basque Studies
Biochemistry
Cellular and Molecular Biology
Cellular and Molecular Pharmacology and Physiology
Chemical Physics
Chemistry
Civil Engineering
Ecology, Evolution and Conservation Biology
Electrical Engineering
English
Geochemistry
Geology and Related Earth Sciences
Geophysics
History
Hydrology and Hydrogeology
Mechanical Engineering
Metallurgical Engineering
Physics
Political Science
Psychology
Social Psychology

History of the Graduate School

Graduate-level training and research is a vital function of the University of Nevada, Reno. Postbaccalaureate study has been offered at the university since 1887, and the university awarded its first advanced degree in 1903. The activities of the graduate faculty and students in research and scholarship reinforce the mission of this land-grant university.

To fulfill the university's missions in education, research and public service, the graduate faculty encourages students to develop the skills of intellectual inquiry and critical analysis. It trains them in both the disciplinary and interdisciplinary skills necessary for problem solving, and fosters a dedication to creative thought and the search for knowledge.

Advanced Degrees and Majors

Supported by a variety of research centers and institutes, research services and library holdings, the university offers graduate study leading to the advanced degrees of master of arts, master of arts for the teaching of English, master of arts for the teaching of mathematics, master of business administration, master of education, master of judicial studies, master of music, master of public administration, master of science, master of social work, education specialist, doctor of education and doctor of philosophy. In addition, certain professional degrees are granted in engineering, medicine and mines.

Admission to Graduate School

Application Information

An applicant for admission to graduate-level study must file an application with the Office of Admissions and Records. Applications for graduate standing are subject to approval by the chairman of the major department or program, the dean of the college that offers the major and the Graduate School dean.

Applications for admission are accepted at any time of the year, but some programs make decisions on admission of new students only once or twice a year. To ensure timely processing, applications and all credentials should be received in the Office of Admissions and Records by the published filing date for each semester (as indicated in the University Calendar section of this catalog).

Except in the master of business administration program, the minimum prerequisite for admission to graduate standing is 18 credits in the undergraduate major, or at least 18 credits of undergraduate courses that are approved by the department in which the student will major. Each academic department reserves the right to specify additional requirements beyond those of the university. If a student's undergraduate work is deficient, the department may require the student to complete additional work, either before admission to graduate standing or while the advanced degree is being pursued.

Examination Scores

A number of university departments and programs use scores on standardized tests (the Graduate Record Examinations, the Medical College Aptitude Test, or the Graduate Management Admission Test) as part of their admissions process. These departments and programs require applicants to submit official scores in their application for admission. Other university departments and programs may not use test scores in evaluating applicants. All applicants should contact individual departments or programs in which they are interested to determine admissions policy and to learn whether official examinations scores must be submitted.

International Students

Applications to the university from international students are evaluated on an individual basis.

A Test of English as a Foreign Language (TOEFL) score of at least 500 is required for admission to the Graduate School. Students who have achieved a TOEFL score of at least 600 are exempt from Intensive English Language Center evaluation. Students who score below 600 on the TOEFL must report to the Intensive English Language Center for evaluation and appropriate placement in English language courses. Certain departments may require TOEFL scores in excess of the minimum requirements.

An international student is required to have a TOEFL score of at least 550 to be approved for a teaching assistantship.

International applicants must satisfy the medical examination and financial responsibility requirements prior to admission.

University Faculty

University of Nevada, Reno personnel with the rank of instructor or above are not permitted to obtain a graduate degree at this campus.

Graduate Standing

Admission to graduate standing is the first in a series of requirements leading to an advanced degree. Students who gain admission to graduate standing are not automatically candidates for a higher degree.

Students may be admitted to graduate standing in the Graduate School after they earn a bachelor's degree or an advanced degree, if specified requirements are met. University colleges and departments may require additional entrance requirements along with the requirements of the Graduate School. Before applying for graduate standing, students should contact the appropriate department for its admission criteria.

Each department, with the approval of the academic deans, reserves the right to determine which students are accepted for graduate study, even though the applicant may satisfy the minimum Graduate School requirements. Graduate standing is necessary before a student can pursue an advanced degree. Once they gain admission, students are permitted to form an advisory-examining committee and may begin to develop their approved program of study. With the consultation of the advisory-examining committee, students may then design a research program for thesis or dissertation.

Master's Degree Programs

Students are eligible for admission to a master's degree program under any of the following conditions:

1. If the undergraduate grade-point average is at least 2.75 on a scale of 4.0, or an average of at least 3.0 for courses taken during the last half of the undergraduate program. An international student who is not a University of Nevada, Reno graduate must have a grade-point average of at least 3.0;

2. If the total grade-point average, multiplied by the GRE score (verbal and quantitative), exceeds 2,466. If the student takes the GMAT instead of the GRE, the total grade-point average multiplied by the GMAT must be at least 1,436;

3. If the applicant does not meet any of the preceding requirements, admission to graduate standing on a **prescribed program** may be considered. A student enrolled in a prescribed program is ineligible for a teaching or research assistantship.

Doctoral Programs

Upon recommendation from the major department and academic dean, graduates from accredited colleges and universities may be admitted to work toward a Ph.D. or Ed.D. (note the Ed.D. exceptions in the College of Education section of this catalog) degree in the Graduate School. In order to gain admission, students must meet the following minimal requirements:

1. Hold an overall grade-point average of at least 3.0 on all undergraduate and graduate courses;
2. Satisfactorily complete the necessary prerequisites for credits in a chosen major field;
3. Qualify for admission to a doctoral program with provisional standing (for students with an overall grade-point average of less than 3.0).

Students approved for provisional standing must complete two consecutive semesters of full-time graduate study in a program approved by the department and the Graduate School. Those students who successfully complete the two semesters, with a grade of B or better in each course comprising the 18 credits, will be qualified to apply for graduate standing. Students may not remain on provisional standing for more than two semesters. Courses completed while on provisional status may be applied toward an advanced degree with approval of the advisory-examining committee.

Graduate Special

The graduate special classification is for students who wish to take graduate courses but do not plan to pursue a program leading to an advanced degree, or for applicants who do not meet the requirements for admission to graduate standing. Individuals may qualify for graduate special classification by filing official transcripts or a degree certification with the Office of Admissions and Records, indicating that the applicant has a bachelor's degree from a regionally-accredited, four-year college or university. **Admission to graduate special status does not constitute admission to graduate standing in the Graduate School.**

With graduate special classification, a student may enroll for undergraduate or graduate credit and may satisfy the teacher certification requirements. Admission to graduate special classification does not imply that students may take every course of their choice, as departmental approval must be secured for every course taken. Students must be able to demonstrate that their prerequisites are satisfied for each course they select.

A student with graduate special classification may apply for regular graduate standing by meeting the requirements of the Graduate School.

As many as nine graduate semester credits taken prior to admission to graduate standing may be applied to the program of study. Those nine credits include graduate special credits and/or transfer credits. If credits are earned during the semester in which a graduate special student is officially admitted to the graduate standing classification, those credits are exempt from the nine-credit limitation.

An international student who holds a student visa is not eligible for admission to the graduate special classification, and cannot register as a graduate special.

Transfer Credits

Students with graduate standing who intend to apply graduate credit earned at another university toward an advanced degree at the University of Nevada, Reno must complete a Graduate Credit Transfer Evaluation Request form, available in the Office of Admissions and Records. The evaluation results of a student's transcript are distributed to the student, adviser and graduate dean for reference in graduate program planning.

Registration for Graduate Courses

Students who plan to register for graduate courses must be admitted to graduate standing or graduate special classification at the university *prior* to registration, except for certain seniors as authorized by policy.

Fees

Graduate students are required to pay the application fee, the per-credit registration and capital improvement fees, specialized instruction expenses and tuition (for out-of-state students). In addition, there are fees for the student health service, the Graduate Student Association, operating costs for the student union and for use of the recreation building. The summer session fees are detailed in the Fees and Expenses section of this catalog.

Grants-in-aid to cover the per-credit and capital improvement fees, as well as out-of-state tuition fees, may be awarded to graduate assistants, trainees and fellows, provided such conditions are specified in their contracts.

Undergraduate Students and Graduate Courses

An undergraduate student at the university who is within 14 credits of completing the requirements for the bachelor's degree may enroll in 500- or 600-level courses for graduate credit, provided that such credit is requested by the student and approved by the adviser and graduate dean. Students who enroll in such courses must be scholastically eligible for admission to graduate standing.

The student must complete all requirements for the undergraduate degree in the same semester in which registration for the graduate courses occurs; otherwise, the courses revert to undergraduate credit. Undergraduates taking graduate courses may carry a combined credit load not to exceed the normal load for the department in which the student received the bachelor's degree. Undergraduate students are not eligible to take 700-level courses.

Graduate Assistantships

The Graduate School is responsible for approval of graduate student assistantships. Interested students should check with the appropriate department to determine the availability of assistantships. A graduate assistantship can only be offered after students receive official notification of acceptance to graduate standing from the Office of Admissions and Records.

Academic Requirements

Advanced degrees are conferred by the university upon recommendation by graduate faculty and the graduate dean, following the completion of an approved program of study. The approved program of study describes the student's specific plan of courses, research and related activities. Each type of advanced degree program includes regulations and requirements presented in the description of the degree. The following requirements apply to all graduate programs at the university.

Students must register for an appropriate course load each semester until graduation or obtain an *approved leave* from the department and the Graduate School. Extensions of the six- and eight-year graduation requirements will not be approved by the Graduate School dean unless the approved leave is part of the student's Graduate School records.

Graduate Courses

Courses numbered 500 and above are for graduate credit (See the numbering explanation in the Course Offerings section of this catalog.) and are open only to those students who have been officially admitted to graduate study. A dual-numbered course

completed at the 400 level for undergraduate credit may not be retaken at the 600 level for graduate credit.

Academic Standards

Graduate students must assume full responsibility for complying with the Graduate School's academic standards and must be aware of the consequences of unsatisfactory performance. University departments and graduate faculty are responsible for monitoring and documenting graduate student compliance with academic standards. Penalties for failure to meet the academic standards include the following:

1. Graduate students placed on probation are not eligible for appointments as teaching or research assistants;

2. A student whose overall graduate GPA remains below 3.0 for two consecutive semesters is dropped from graduate standing;

Recommendations by departments or advisory-examining committees to place students on probation, or to drop them from graduate standing must be submitted to the Graduate School. If the recommendation is approved, the Graduate School notifies the student and, if appropriate, the Office of Admissions and Records that the student is dropped from graduate standing. A student dropped from graduate standing for reasons other than grade-point deficiencies may register as a graduate special.

A student who is dropped from graduate standing because of grade-point deficiencies may only enroll as a graduate special in undergraduate courses. To enroll in graduate-level courses, advance written approval must be obtained from the department concerned and the graduate dean.

A student may reapply for graduate standing by eliminating the existing grade-point deficiency and achieving an overall graduate grade-point average of at least 3.0.

Grades and Credit

Each graduate course must be completed with a grade of C or better for the credit to be acceptable toward an advanced degree. Some departments, at their discretion, do not accept any grade lower than B for the fulfillment of graduate program requirements.

In addition, a grade-point average of at least 3.0 must be obtained in all graduate credit attempted at the university. Course grades will be included in the overall average, even when the required time period for obtaining a master's degree has expired. Grades of D or F are included in the average.

Academic Performance at the University of Nevada, Reno

1. Overall graduate credit GPA of at least 3.0—Good standing;

2. Graduate grade point total of one to six grade points below the total necessary for a GPA of 3.0—Probation;

3. Graduate grade point total of seven or more grade points below the total necessary for a GPA of 3.0—Dropped from graduate standing.

Limitations on Courses for the Program of Study

A maximum of nine graduate semester credits toward the master's degree and 24 credits toward the doctor of philosophy degree, selected from eligible graduate courses completed prior to admission to graduate standing, may be applied to the program of study.

1. **S/U Grades:** A maximum of three graduate credits toward a master's degree or nine graduate credits toward a doctoral degree of satisfactory/unsatisfactory (S/U) grading, including transfer credits, is acceptable. **A maximum of six graduate credits of S/U grades may apply to the master and doctor of education degrees offered by the College of Education;**

2. **Thesis Credits:** Final credit for thesis or dissertation is not officially recorded until the candidate is approved by the faculty for the graduate degree;

3. **Graduate Special Courses:** A maximum of nine credits which the student has registered for while classified as a graduate special may be used in satisfying requirements for any advanced degree;

4. **Off-Campus Courses:** A maximum of nine credits earned in off-campus courses may be applied toward any advanced degree;

5. **Workshop Courses:** A maximum of six credits of workshop or institute courses, whether taken in residence or not, may be included in the total for the degree;

6. **Extension Courses:** Graduate credit earned through extension courses is not accepted for transfer credit;

7. **Correspondence Study:** No graduate credit is allowed for correspondence study completed at the university or elsewhere.

Resident Credit

Resident credit on the University of Nevada, Reno campus is defined as credit earned by a student who is physically present on campus for the entire duration of the scheduled instruction or training period, except in those specific cases (e.g., in agriculture, geology or biology) where the field becomes, in fact, a campus laboratory and is the only place where adequate instruction and training can take place.

Student Credit Loads

A full-time graduate student may not register for more than 16 graduate credits in any semester, or more than six graduate credits in any six-week summer session. Graduate assistants may not register for more than 12 graduate credits per semester.

If the graduate student's registration includes courses taken for undergraduate credit, the student's credit load is calculated as follows: three undergraduate credits are equivalent to two graduate credits.

Students who register for nine graduate credits or more in a semester are considered full-time. For graduate assistants on a half-time contract, six graduate credits or more constitute full-time study.

To remain in good standing, all graduate students must register for at least one graduate-level credit each semester until graduation.

Advisory and Examining Committee

An approved application for graduate standing must include the name of the student's temporary adviser. As soon as possible, students select a permanent adviser. The student and the permanent adviser arrange the appointment of the advisory/examining committee, which along with the adviser and department chairman, supervise the student's course of study and examinations.

For master's degree candidates, the advisory/examining committee should be appointed as soon as possible. The committee consists of at least three members of the graduate faculty. Two faculty members represent the student's area of specialization and one faculty member is selected from the university-at-large. If a major-minor program is selected, at least one faculty member must represent the student's major, one must represent the minor and one must be selected from the university-at-large. (In the master of business administration program, the advisory/examining committee is appointed only for students who will complete a thesis.).

For students going directly from the bachelor's degree to the Ph.D., the advisory/examining committee should be formed prior to the completion of 24 credits in graduate courses.

Students entering a Ph.D. program with a master's degree should form the advisory/examining committee during their first semester of enrollment. A faculty member should be selected to serve as committee chairman and as a permanent adviser. The research adviser may be a different faculty member than the chairman. The committee should consist of at least five members:

the committee chairman/permanent adviser, at least two faculty members from the student's major department, at least one faculty member from a department in a field related to the student's major and at least one graduate faculty member representing the university-at-large. Students may request the appointment of a committee member from the faculty of another university. Formal approval of the student's advisory/examining committee is made by the graduate dean.

The university-at-large committee members will represent the Graduate School, assure compliance to Graduate School regulations and procedures, and report any deviations from prescribed standards to the school.

Members of advisory/examining committees must be members of the graduate faculty, unless approved by the graduate dean. The list of university faculty members at the back of this catalog identifies graduate faculty by an asterisk following the name.

All committee members are involved in the approval of the student's program and thesis/dissertation topics, and in the design and conduct of all examinations. Changes in the program may be made only with the approval of the entire committee and the graduate dean. When necessary, substitute members of the committee may be appointed by the graduate dean.

Application for an Advanced Degree

During the first two weeks of the student's final semester or summer session, each candidate for graduation is required to submit an application for an advanced degree to the Graduate School. This application includes the date of graduation, and the approval of the adviser, academic dean and graduate dean.

An applicant who does not complete all degree requirements by the specified deadline must update and resubmit an application during the next appropriate filing period.

Thesis and Dissertation Regulations

Each student must have an outline of the thesis/dissertation approved by the advisory/examining committee. Following this approval, the student is expected to complete the thesis/dissertation in a manner satisfactory to the committee.

The candidate should develop the thesis or dissertation while in residence, as close and constant supervision by the director is required. If the student makes considerable progress in researching, outlining and writing the thesis or dissertation while in residence, the candidate may be permitted to complete work away from the campus. Permission for off-campus work must be arranged with the research adviser and then approved by the graduate dean.

Registration for Thesis or Dissertation: A master's degree candidate who is on a Plan A (thesis) program must complete a minimum of six credits of thesis; a Ph.D. candidate must complete a minimum of 24 credits of dissertation. Students should plan to take the required thesis and dissertation credits during the entire academic year, as many benefits (G.I. Bill, student loans and housing, and visas, for example), require that a student register for at least one graduate credit during each eligibility semester. Departments may require that a student conducting resident research must register for a minimum of one thesis/dissertation credit each semester.

Thesis and dissertation courses are not graded. At the close of each semester of registration for credit, a dash is indicated instead of a letter grade on the student's permanent record. These courses are not counted in grade-point average computations. After the thesis or dissertation is completed, defended and accepted by the student's committee and by the graduate dean, credit is posted to the student's academic record.

Dates for Submission of Thesis or Dissertation: A draft of the thesis or dissertation must be submitted to members of the examining committee not later than eight weeks before the final examination. The completed, unbound thesis must be submitted to members of the examining committee at least one week before the date of the final examination, which must be held at least three weeks before the close of the semester or term. The final date for submission of the thesis or dissertation in final form is two weeks before the close of the semester or term. **No extension of this deadline is permitted.** The graduate dean makes final approval of theses and dissertations.

Format: The thesis/dissertation is to be prepared according to specific directions available at the Graduate School office. Capitalization, abbreviations, quotations, footnotes, bibliography and other conventions should conform with good usage, as listed in standard manuals on research writing. The format must be consistent throughout the thesis.

Copies for Deposit: When the thesis has been approved by the advisory/examining committee, two acceptable copies signed by the chairman of the major department and the thesis director must be submitted unbound to the Graduate School office .

Publication and Abstract: The university library staff will arrange for the microfilming of each thesis and dissertation by University Microfilms. Publication on microfilm does not preclude other forms of publication.

The Ph.D. degree candidate also must submit an abstract, not exceeding 350 words in length. The master's degree candidate must submit an abstract, not exceeding 150 words in length. All abstracts must be approved by the examining committee. The abstract is published in full in *Dissertation Abstracts* or *Master's Abstracts*, both journals with international circulation. Copyright registration must be paid by the degree candidate.

Master's Degrees

Some academic departments at the university offer only a Plan A for completion of the master's degree, in which a six-credit thesis is required. Other departments offer, in addition to Plan A, a Plan B with no thesis required.

Residence and Credit Requirements

1. **Plan A:** In the thesis program, at least 30 credits of acceptable graduate courses must be completed. At least 21 of those credits must be earned in on-campus courses at the university. Any transfer credits from another institution must be recommended in the program of study by the advisory/examining committee, and must be officially accepted by the Office of Admissions and Records. At least 18 credits in the program must be at the 700 level.

2. **Plan B:** The program of study requires the satisfactory completion of at least 32 credits of acceptable graduate courses and a comprehensive examination. At least 23 credits must be earned in on-campus courses at the university. At least 15 of the 32 total credits must be earned at the 700 level.

3. **S/U Grades:** As many as three credits of satisfactory/unsatisfactory (S/U) grades, including transfer credits, is acceptable.

4. **Limits on Transfer and Graduate Special Credits:** As many as nine graduate credits completed prior to admission to graduate standing may be applied toward the master's degree.

5. **Time Limit:** All requirements for the master's degree must be satisfied within the period of six calendar years immediately preceding the granting of the degree.

6. **Second Master's Degree:** A maximum of nine graduate credits earned in a master's degree program may later be applied toward a second master's degree.

Course Requirements

The following programs may be arranged for the master of arts, master of arts for the teaching of English, master of business administration, master of music, master of public administration, or master of science degrees:

Major Programs: A minor is not required. In Plan A, at least 18 of the 24 graduate credits must be in the major field of study. In Plan B, 23 of the 32 graduate credits must be in the major field of study. Credits may be selected in any department with the approval of the advisory committee.

Major-Minor Programs: In Plan A, at least 12 of the 24 graduate credits must be in a major field of study, with at least six credits in a minor field. The minor may be in a different department, or it may be in a second division of the major department. The minor department has the responsibility of approving the candidate's minor program. Any credits not required for the major or minor may be selected in any department with the approval of the advisory committee. Generally, such credits are chosen to support the candidate's thesis. In Plan B, at least 15 of the 32 graduate credits must be in a major field of study, with at least eight credits in a minor field.

Area Programs: The advisory committee, with the approval of the Graduate School dean, may designate an area program that includes the subject matter of several departments.

Education Programs: For the master of arts or master of science degree in secondary education, the Plan A program must include at least eight credits in a minor field of study outside the College of Education. In Plan B, 10 such credits are required.

Foreign Language Requirement: The Graduate School does not have a language requirement for master's degrees, but various departments may require competency in foreign language.

Procedures Toward Master's Degree

A degree candidate's course selections must be approved by the faculty adviser, identified on the admissions certificate, during the first semester of enrollment and prior to establishment of the advisory/examining committee.

Program of Study: The graduate student's adviser, the department head and the advisory/examining committee determine the program of studies for each degree candidate, including the thesis and the acceptable courses for completion of the degree. The graduate dean has final approval of the program of studies. Subsequent changes may be made at any time, but only with the approval of the committee and the dean.

It is the responsibility of the student and the advisory/examining committee to ensure that the graduate courses in the proposed program of study are consistent with the requirements of the Graduate School and the department. (The master of business administration program does not use the usual committee structure. For details, refer to the graduate programs information in the College of Business Administration section of this catalog.)

The student's advisory/examining committee may require the student to take additional courses if, in its opinion, additional training is needed to achieve the expected level of proficiency. Students should consult individual departments to find out the specific requirements for completing the master's degree through either Plan A (thesis) or Plan B (nonthesis).

Comprehensive Examination: Comprehensive examinations are designed to ensure that the student has attained a reasonable proficiency level in the chosen field of study.

At the master's degree level, examinations are administered by the department after most of the course work is completed. In consultation with the major department adviser, the student registers for the comprehensive examination without credit on a satisfactory/unsatisfactory basis. All committee members may review the examination, which must be completed satisfactorily before the student files for degree candidacy. If a student earns a grade of unsatisfactory (U) or incomplete (I) on the examination, that grade must be improved to satisfactory (S) during the subsequent semester, or the student will be removed from graduate standing.

Admission to Candidacy: Advancement to degree candidacy confirms that a student has successfully completed departmental course requirements and university residency requirements. Students pursuing the master's degree should file for candidacy after completing the comprehensive examination. Students pursuing doctoral degrees should file for candidacy not later than eight months prior to graduation. Admission to candidacy forms are available in the Graduate School office. The forms must be approved by the student's adviser, by the chairman of the student's major department and by the Graduate School dean.

In order to gain admission to candidacy, a student must meet the following requirements:

1. Hold at least a B average in all graduate work;
2. Gain the advisory committee's formal approval for the program of study, including thesis development;

A university department may, at its discretion, impose additional requirements for admission to candidacy.

Final Oral Examinations

Many departments require master's degree candidates to pass a final oral examination. Students should consult individual departments for details.

Departments have specific regulations that apply when a student's performance is not satisfactory on the final oral examination. An advisory/examining committee may allow the student to retake the examination, it may recommend that the student be placed on probation, or it may recommend that the student be dropped from graduate standing. These recommendations are made to the graduate dean.

Note: For additional information on specialized master's degree programs, refer to the college and school sections of this catalog.

Doctor of Philosophy Degrees

The doctor of philosophy (Ph.D.) degree is conferred for work of distinction, in which the student displays original scholarship and achievement.

The student must exhibit a broad mastery of their major field by passing a general examination. After passing the examination, the student applies for admission to candidacy. The student also must prove his or her ability to design and complete a program of original research by preparing a dissertation that adds to existing knowledge.

Residence and Credit Requirements

Time Limitation: All requirements for the doctoral program, excluding prerequisite graduate course work or master's degrees, must be completed within a period of eight calendar years. The required prerequisites are clearly defined by the departments concerned, and are approved by the Graduate Council.

Residence: A minimum of six semesters of graduate study beyond the bachelor's degree is required. At least two successive semesters, excluding summer sessions, must be spent in full-time residence on campus at the University of Nevada, Reno. (For Ed.D. refer to specific program description.)

Credits: A minimum of 72 graduate credits is required, including at least 48 credits in course work. (For Ed.D. refer to specific program description.)

A maximum of 24 credits of course work (with grades of B or

better) from a master's degree program or previous postbaccalaureate graduate studies program may be allocated toward the doctoral degree. These credits must be approved by the student's major department, the graduate dean and the Office of Admissions and Records.

700-level Courses: At least 30 credits of 700-level courses beyond the bachelor's degree, exclusive of dissertation credits, are required for the doctoral degree. As many as 18 of these credits may be used from a master's degree program.

Course Requirements

The following Ph.D. programs may be arranged with advance approval of the advisory committee:

Major Programs: Major degree programs may be completed without a minor. In some cases, elective courses may be taken outside the major.

Major-Minor Programs: At least two-thirds of the required credits, including dissertation research, must be earned in the major field. A minor field must be approved by the department offering the minor.

Area Programs: An advisory committee consisting of members of several departments, with the approval of the Graduate School dean, may designate an area program that includes the related subject matter of several departments.

Procedures Toward Doctoral Degree

Qualifying Examinations: The qualifying exam helps assess the student's current knowledge and defines the departmental requirements yet to be completed. Each department will provide explicit guidelines about examinations to its students

For the student entering the Ph.D. program without a master's degree, qualifying examinations should be completed before the student earns 24 graduate credits. For students entering the program with the master's degree, exams should be completed during the first semester of graduate study.

Program of Study: Soon after its appointment, the advisory/examining committee should meet to approve the student's program of study and the outline for the dissertation.

The student's program of study must be accepted by the examining/advisory committee before the student files for degree candidacy. The committee may accept or reject any course work it deems appropriate or inappropriate to the student's program.

Foreign Language Requirement: Individual departments, programs, schools, or colleges may require competency in one or more foreign languages as part of the degree requirements for a doctorate. Students should consult individual departments for details.

Comprehensive Examination: The examination should be taken as soon as possible after completion of any language and all course requirements, but no later than eight calendar months before graduation. The exam may be taken after a minimum of 75 percent of the student's required course work, beyond the bachelor's degree, is completed. This examination must be both oral and written, and test the student's mastery of a broad field of knowledge, and not merely the formal course work that has been completed.

The written examination is designed and administered by the student's major department, and the oral examination is conducted and evaluated by the advisory/examining committee.

The student fails the exam if more than one negative committee vote is cast. The examination may be retaken once, if additional study is approved by the examining board. The advisory/examining committee determines the period of additional study.

Admission to Candidacy: Application for admission to degree candidacy must be filed not later than eight calendar months before awarding of the degree, and not before completion of residence requirements, the comprehensive examination, and foreign language requirements.

The Dissertation: Candidates for the Ph.D. degree must register for at least 24 credits of dissertation work (refer to specific program description) and must submit a satisfactory dissertation to the examining committee. Any exception to the minimum 24 dissertation credits requires the advance written approval of the student's major department and the graduate dean.

The dissertation must represent original and independent investigation that comprises a contribution to knowledge. It should reflect not only a mastery of research techniques, but also an ability to select an important problem for investigation. Each student's research must indicate competent study and demonstrate the dissertation results in an acceptable manner. The graduate dean has final approval of the dissertation.

Note: Additional information about the education specialist, doctor of education, combined M.D./Ph.D. and professional degrees can be found in the relevant college and school sections of this catalog.

Special Services

Special services provided by the Graduate School include:

Assistance in proposal writing: Through the learning laboratory at the university's Getchell Library, the Graduate School makes available "Winning Grants," a series of 10 audio-visual lectures dealing with all aspects of developing proposals and contracts to potential sponsors.

Graduate School Instructional Development (GSID): The Graduate School provides special teaching-skills training for both national and international teaching assistants.

Graduate Student Association: Graduate student participation in university affairs is encouraged through the University of Nevada, Reno Graduate Student Association (GSA). Students have representation from each academic unit offering advanced degree programming. The GSA has voting representation on the Graduate Council and cooperates with the Associated Students of the University of Nevada (ASUN). The GSA president attends University and Community College of Nevada System (UCCNS) Board of Regents meetings.

While social activities are provided by the GSA, the organization is structured to help improve academic and service programs for graduate students. The GSA publishes the *Graduate Student Handbook*, sponsors invited speakers who discuss a wide variety of topics, helps fund graduate students who present papers at professional meetings and promotes graduate student participation in campus and community affairs as well as regional and national scholarly meetings.

Graduate Student Paper Competition: During spring semester, the Graduate School coordinates the "Graduate Student Paper Competition," a program sponsored by the Honor Society of Phi Kappa Phi, the Research Society of Sigma Xi and the Graduate Student Association. Each applicant submits a scholarly research document. Finalists are invited to give oral presentations of their research findings with cash prizes awarded to the winners.

Graduate Teaching Fellow Award: Nominations for the university's outstanding graduate teaching fellow are made by individual departments at the beginning of spring semester. Nominees must be serving in their second year as a graduate teaching fellow at the university and must have completed at least 20 credits of graduate work. The finalists' student teaching evaluations are carefully reviewed and classroom observations are made before an award is presented.

Statistical consulting: For graduate students and faculty, a statistical consulting service at the Statistics and Research Methods Laboratory is available to help them with research and proposal development.

Interdisciplinary and Special Programs

For footnote explanation, see page 154

The University's Interdisciplinary and Special Programs:

Interdisciplinary and special programs are offered at the university to provide students with enriched educational opportunities extending beyond the traditional offerings. Some programs allow students to coordinate study in various academic disciplines. Other programs provide study opportunities in different geographic regions within the United States, as well as in other countries. Most of the programs are coordinated by faculty advisory boards.

The program descriptions are detailed in alphabetical order.

Basque Studies

Program Office: 274 Getchell Library, 784-4854

An undergraduate minor in Basque studies is offered through the College of Arts and Science in cooperation with the Basque Studies Program of the University Library. The University of Nevada, Reno, which maintains the only Basque Studies Program in the United States, periodically offers courses on Basque topics. In addition, the University Studies Abroad Consortium offers Basque courses in the Basque Country. The minor program provides students with an introduction and exposure to one of the unique ethnic heritages of the American West.

Requirements include a four-semester (14-credit) course sequence in elementary and intermediate Basque (the courses may also be utilized to satisfy the college's foreign language requirement), and nine additional credits in upper-division courses selected from the following list:

	Credits
ANTH 499 (when offered as Basque and Iberian Culture, or equivalent)	3
BASQ 101-102	8
BASQ 203-204	6
BASQ 405-406	6
BASQ 451	3
BASQ 455	3
BASQ 466	3
FLL 295b (maximum of 4 credits)	4
FLL 496b (maximum of 3 credits)	3
HIST 428	3
HIST 497 (when offered as Basque and Iberian Culture, or equivalent)	3
P SC 497 (when offered as Political Institutions of the Basques, Spain and Europe, or equivalent)	3
RPED 496 (when offered as Basque Folk Dance)	1

An interdisciplinary tutorial Ph.D. program with a major in Basque studies is offered by the departments of anthropology, foreign languages and literatures, and history. The tutorial nature of the program requires the student to complete a plan of study under the direction of a mentor and with the approval of a standing admissions and policy board, a dissertation committee and the faculty of the academic department concerned. Each student must complete a minimum of one year in residence at the University of Nevada, Reno. Interested students may also gain residence at another American or European university, working under the direction of a recognized Basque studies specialist.

Program applicants must have earned a master of arts degree in a relevant field and must satisfy the preapplication screening requirements of the admissions and policy board. The annual filing date for submitting preapplication screening information to the program coordinator is Feb. 1. Applicants approved by the screening board must file an official application for admission and supporting documents in Admissions and Records by April 1. Applicants will be notified of their admission status by May 15.

In addition, a limited number of graduate fellowships may be available.

For further information, contact the program office.

Biochemistry

Program Office: Howard Medical Sciences, 784-6031

An interdepartmental graduate program leading to master of science and doctor of philosophy degrees in biochemistry is offered at the university.

Candidates for admission to the program must meet the Graduate School's admission criteria, as well as certain additional requirements (a full year of courses in organic and physical chemistry, one semester of analytical chemistry and biochemistry, and specified courses in biology). Students who have not taken one or more of the above courses, but who meet the remaining requirements, may be admitted to the program with the understanding that such courses will be completed during the first year of graduate study.

The program of study for the Ph.D. degree includes 24 credits of dissertation work plus a core curriculum of biochemistry courses and electives in biochemistry and other life and physical sciences. Students, in consultation with their adviser and graduate committee, select a study program that satisfies the program requirements and is consistent with their interests.

Students participate in a variety of educational experiences, including first-year research rotations, cumulative exams, oral comprehensive exams and seminars. All degree candidates present a final seminar on their dissertation research and provide an oral defense of their work.

Graduate fellowships are available on a competitive basis. To ensure full consideration, fellowship applications for fall admission should be completed by March 1.

Cellular and Molecular Biology

Program Office: 146 Howard Medical Sciences, 784-6161

Cellular and molecular biology is an interdisciplinary program offered by the School of Medicine, the College of Agriculture and the College of Arts and Science. Study programs lead to the master of science and doctor of philosophy degrees. Additionally, medical students may earn a M.D./Ph.D. degree through the program.

The highly interactive program offers a wide range of study options dealing with contemporary cellular and molecular biology. Students who seek admission to the program should have completed the following course requirements: eight credits of both organic chemistry and biology, six credits of physics and four credits of calculus. If a student is admitted with a deficiency in these courses, the required courses must be completed during the first year of graduate study.

Candidates for the master of science degree must satisfy all general requirements of the Graduate School and complete a curriculum consisting of 30 credits, which include the following: 18 credits of core curriculum, six credits of research and thesis and six credits of approved electives. Any substitutions of the core curriculum requirements must be approved by the director of the cellular and molecular biology program. A list of approved electives can be obtained from the program office.

Master of Science Core Curriculum:

	Credits
B CH 613	4
B CH 705	4
CMB 701, 702 or 703	6
CMB 790	2
CMB 794	2

Candidates for the doctor of philosophy degree must satisfy all general requirements established by the Graduate School and complete a minimum of 72 credits, which include the following: 31 credits of core curriculum, 24 credits of research and dissertation and 17 credits of approved electives. Substitutions of the core curriculum requirements must be approved by the director of the cellular and molecular biology program. All students must have their study programs approved by the program director, or when appointed, by an advisory committee. A list of approved electives can be obtained from the program office.

Doctor of Philosophy Core Curriculum:

	Credits
B CH 613	4
B CH 705	4
CMB 701, 702 or 703	9
CMB 710	4
CMB 790	2
CMB 794	6

Additional Program Requirements: All students working toward the doctoral degree must pass a comprehensive examination, in which the student independently proposes a research project in the form of a written research grant proposal. Following acceptance of the proposal by an examining committee, the proposal must be defended orally before the the committee. All doctoral degree candidates must present a public seminar of their thesis research and pass an oral defense of the dissertation.

Candidates for the M.D./Ph.D. degree must meet the requirements as outlined in the M.D./Ph.D. program. Refer to the "Combined M.D./Ph.D." description in the School of Medicine section of this catalog for more information or contact the pharmacology department, 784-6956.

In addition, graduate fellowships for the cellular and molecular biology program are available on a competitive basis. Contact the program office for more information.

Cellular and Molecular Pharmacology and Physiology

Program Office: 146 Howard Medical Sciences, 784-6956

Cellular and molecular pharmacology and physiology is an interdisciplinary graduate program. The program leads to master of science and doctor of philosophy degrees.

Candidates for admission to the program must meet the admission criteria of the Graduate School as well as certain additional requirements. Before entering the program, students should have completed the following: five semesters of chemistry (including two semesters of organic chemistry and one semester of physical chemistry), two semesters of both biology and physics and one semester of calculus. If a student is admitted with a deficiency in these courses, the required courses must be completed early in the graduate program.

Twenty-four credits of dissertation work, as well as a core curriculum of required courses and various elective courses, comprise the program. The course of study is flexible enough to satisfy the student's career interests.

During their first year in the program, students participate in a research rotation experience. As their training progresses, students take part in a teaching practicum and are required to pass a comprehensive examination. As part of the examination, each student proposes a research project in the form of a written grant proposal. Following acceptance of the proposal, each student must defend his research project orally before the examining committee.

All candidates present a public seminar on their dissertation research and must pass an oral defense of the dissertation.

Chemical Physics

Program Office: 213 Chemistry Building, 784-6041

Chemical physics is an interdisciplinary program offered by the College of Arts and Science. The program, which leads to the doctor of philosophy degree, provides students with a diverse curriculum covering the scope of contemporary chemical physics.

Students who are admitted to the program must satisfy the Ph.D. admission requirements of either the chemistry or physics department, as well as the general admission requirements of the Graduate School.

Candidates for the doctor of philosophy degree must satisfy the Graduate School requirements and complete a minimum of 72 credits, which include the following: 18 credits of core curriculum, 24 credits of research and dissertation and 30 credits of elective courses (12 of these credits may be in independent study). Acceptable elective courses include any 600- or 700-level course in physics, chemistry, or mathematics, or any course approved by the student's graduate advisory committee.

Doctor of Philosophy Core Curriculum

	Credits
CHEM 752	3
CHEM 755	3
CHEM 757	3
PHYS 701	3
PHYS 702 or PHYS 730	3
PHYS 722	3

Additional Requirements: All students enrolled in the program will be required to pass a comprehensive written and oral examination, based on material covered in the core courses listed above. The written portion of the comprehensive exam must be taken within one year of the student's completion of the core curriculum (typically by the end of the second year). The oral portion of the comprehensive exam will be taken within one week of the written exam. Students who do not achieve satisfactory scores on the first comprehensive examination may retake both parts of the exam within six months of the first testing date.

Once the comprehensive exam has been satisfactorily completed, students are expected to pursue a vigorous research program under the direction of one of the affiliated chemical physics faculty. Research areas supported by the faculty span a broad range of both experimental and theoretical chemical physics topics. Students complete their research programs by writing a dissertation, which must be approved by the graduate advisory committee before a degree is conferred.

Ecology, Evolution and Conservation Biology

Program Office: 122 Knudtsen Resource Center, 784-4439

The ecology, evolution and conservation biology program is a research-based interdisciplinary graduate program leading to a doctor of philosophy degree. The program is offered by the College of Arts and Science, College of Agriculture and the Desert Research Institute.

Students examine the ecology, evolution and conservation biology of organisms of the Great Basin and other arid lands. They investigate a broad range of biological techniques, studying individuals, populations and species.

Students who seek admission to the program should have a cumulative grade-point average of 3.0, a combined verbal and quantitative GRE score of 1,200 (a TOEFL score of 600 for international students) and should have completed the following course requirements: 24 credits of biology (including genetics, evolution and ecology), six credits of physical sciences, or equivalent evidence of ability to succeed in a Ph.D. program.

Candidates for the doctoral degree must satisfy all the general requirements of the Graduate School and complete a minimum of 72 credits, which include the following: 24 credits of research and dissertation, 18 credits of electives, 16 credits of lecture courses, 12 credits of core curriculum and two credits of seminar.

Core Curriculum

	Credits
EECB 701 or equivalent	3
EECB 702 ore equivalent	3
Graduate-level statistics course	3
Presentation of scientific data or research design	3

Additional Requirements: Students enrolled in the program will be required to pass a qualifying exam. To qualify, they must post a minimum score of 680 on the GRE advanced test in biology or subscores of 70 in population biology, 70 in organismal biology and 62 in cellular and subcellular biology. Students with unsatisfactory scores in any of the three study areas must complete an undergraduate biology course in that specialization with a grade of B or better.

In addition, students will be required to pass a comprehensive written and oral examination. The written examination will be taken by the end of the second year of doctoral study. After the written examination is completed, the student's oral exam will be conducted and then evaluated by the student's advisory/examining committee.

After spending a minimum of two semesters teaching an undergraduate laboratory or lecture course, students complete the research programs by writing a dissertation, which must be approved by the graduate advisory committee before a degree is conferred.

Graduate fellowships for the ecology, evolution and conservation biology program are available on a competitive basis.

Environmental Studies

Program Office: Howard Building, 784-4108

The university offers an interdisciplinary minor in environmental studies under the direction of the Environmental Studies Board. The board is authorized to develop a curriculum of special courses, listed in the Course Offerings section of the catalog under "Environment", and related courses in various departments. In addition, the board encourages environmentally-oriented graduate research.

The environmental studies program addresses problems of the environment and of natural resource and energy use. Students study several academic disciplines. To complete the program, students must earn 24 credits in the minor field. At least nine credits must be in upper-division (300-400 level) courses.

Core Requirements: The following courses are required for all students seeking a minor in environmental studies:

	Credits
ENV 101	3
One of the following courses: ENV 305 (GEOG 305), GEOG 435 (RWF 435), RWF 490	3

Additional Environmental Courses: Students pursuing the enviromental studies minor must select at least two courses from each of the following areas of concentration:

Ecological and Physical Principles: AGRO 100, 222; BIOL 100, 191; CHEM 101; ENV 467 (RWF 467); PHYS 100, 106; RWF 100 or equivalent courses in the biological, earth or physical sciences, or in engineering.
Economic and Social Principles: AGEC 202, 466; ANTH 470; EC 101, 459; HIST 316; ENV 294, ENV 494, or equivalent courses in economic or social sciences.
Environmental Planning and Policy: ENV 305 (GEOG 305) if not taken as a core course; ENV 457 (P SC 457); GEOG 456, P SC 336; RWF 490 if not taken as a core course, ENV 494 or equivalent courses concerned with environmental and resource planning and policy.

A maximum of three credits in ENV 301 and three credits in ENV 401 may be used toward the minor program. These earned credits may be substituted for one course in each of two different areas of concentration, as listed above.

Students are advised to gain the approval of the Environmental Studies Board and the student's major department before registering for selected courses each semester; a board adviser works with the student in designing an appropriate program. No student minoring in environmental studies may include more than six credits from courses in his or her major department. If credits from the major department are used, they must be in addition to those earned to fulfill the requirements for the major.

Ethnic Studies

Program Office: 326 Mack Social Science, 784-4548

A minor in ethnic studies is offered through the collaboration of several departments and under the direction of the Ethnic Studies Board. The program focuses on the following ethnic minority groups: African-American, Asian-American, Hispanic-American and Native American. Designed to increase students' awarness of these groups, the program examines the experiences and contributions of a wide range of people. The ethnic studies minor also addresses the characteristics, issues and effects of racism.

Requirements:
I. Students enrolled in the ethnic studies minor will be required to complete 18 credit hours in this specialization. Nine of these credits must be in upper-division courses. Students should select courses from more than one department.

II. Course requirements—
1. Nine of the 18 required credit hours must be completed in courses covering multiple ethnic minority groups. Students may select courses from the following: ANTH 205, E L 421, ENGL 345, ES 307, HDFS 438, P SC 353, PSY 433, SOC 205, SOC 379, SPCM 412;
2. Three credit hours must be taken from courses covering the African-American experience. Applicable courses are ANTH 489 and HIST 455-456;
3. Three credit hours must be taken from courses covering the Hispanic-American experience. Applicable courses include: ANTH 464, HIST 343-344, P SC 415, SPAN 222;
4. Three credit hours must be taken from courses covering the Native American experience. Applicable courses include: ANTH 345, 420, 427, 461, 562 and HIST 418.

General Studies

Program Office: 206 Midby-Byron Center, 784-4046

The university's Bachelor of General Studies (BGS) degree program provides interdisciplinary study across the academic disciplines and professional fields. It is designed for nontraditional students whose age, residence, academic interest or career objectives require an individualized university degree. There is no on-campus resident credit requirement.

Degree candidates are assigned an academic adviser to assist in preparing an appropriate course of study. Prospective graduate students should contact their adviser regarding the degree's applicability to that goal.

The program objectives are:
1. To meet the University of Nevada, Reno's mission as a land-grant university to better serve the general educational needs of the state's citizens;
2. To provide nontraditional students an opportunity to earn a bachelor's degree while maintaining their family and/or employment responsibilities;
3. To provide an opportunity for a degree that includes several disciplinary and professional areas;
4. To provide students an opportunity to build upon the associate of arts and the associate in general studies degrees offered by two-year colleges.

Entrance Requirements: Degree candidates must be admitted as a regular student.

Program Completion Requirements:
1. A minimum of 124 credits must be earned with 40 or more credits in courses numbered 300 or above. A minimum of 45 credits must be completed in university courses (on-campus, off-campus, teleconference or correspondence). Sixty of the 124 total credits must be earned at four-year colleges and universities. A maximum of four credits applicable to the BGS degree may be earned in recreation, physical education and dance activity courses (numbered 100-199);
2. A cumulative grade-point average of at least 2.0 for all courses attempted at the university and an overall grade-point average of at least 2.0 must be earned within the program;
3. Courses in the U.S. and Nevada constitutions must be satisfactorily completed;
4. The ENGL 102 requirement must be completed;
5. Three credits of mathematics at the 100-200 level must be completed;
6. All Core Curriculum requirements must be fulfilled (contact general studies adviser.);
7. Sixty credits must be earned in the following manner:

Humanities and Fine Arts: (12-credit total) ART 116, 117, 214, 257 (three credits only); ENGL 131, 235, 236, 241, 244, 253, 261, 281, 291, 292, 293; FR 221, 223; GER 221, 223; ITAL 221, 223; SPAN 221, 222, 223; HIST 105, 106; MUS 121, 201-202; PHIL 110, 125, 130, 211, 213; THTR 100.

Natural Sciences: (12-credit total) ANTH 102; BIOL 100; CHEM 100, 101, 102, 201, 202; ENV 101; GEOG 103; GEOL 101, 102, 160; HIST 282; MATH 120, 128, 176, 178, 181; PHYS 106, 109, 110, 117, 151-152.

Social Sciences: (12-credit total) ANTH 101, 201, 205; C J 110, 120; EC 101, 102; GEOG 106; HIST 101, 102, 111, 281; JOUR 101; P SC 103, 104, 210, 211, 231; PSY 101; S W 220; SOC 101, 202, 205; SPCM 210; W S 101.

Communication and English Composition: (12-credit total) ENGL 101, 102, 321; SPCM 113; CIS 201-202, 251, 253; C S 105, 113, 183, 233, 283, 284, 285, 386; foreign languages through the intermediate level (205-209).

Colleges other than Arts and Science: (12-credit total) Use of upper-division courses to fulfill the requirements must be approved by an adviser.

Gerontology

Program Office: 100D Sarah H. Fleischmann Building, 784-1689

An interdisciplinary certificate program in gerontology is administered by the Geriatric and Gerontology Center through the College of Human and Community Sciences. Other participating colleges and schools include: arts and science, education, medicine and nursing. The program provides students with educational and practical experience to increase their effectiveness in working with older adults.

The gerontology certificate may be obtained by students regardless of major, by community professionals who work with senior citizens, or by nondegree candidates interested in issues pertaining to the elderly. The 24-credit course of study includes 12 credits of required subjects and 12 credits selected from approved electives emphasizing gerontology. Field study, a vital component of the curriculum, includes work experience and projects that have been approved by the program coordinator. Several of the participating colleges and schools offer field-experience courses for gerontology-related activities.

Students who wish to minor in gerontology need not complete the entire certificate program, but must complete a total of 18 credits. Nine credits must be selected from the required core curriculum (excluding field study). The additional nine credits may be selected from any of the remaining courses, including the additional core course, field study, or one of the designated electives.

The required and elective courses are listed below:

Required Core Courses (12 credits):

	Credits
CHS 301 or HDFS 431e, 631e	3
NURS 430, 630	3
PSY 446, 646	3
Field study	3

Electives (12 credits):

	Credits
CEP 400, 600	3
CEP 753	3
CHS 300	3
CHS 420, 620	3
CHS 475, 675	3
HDFS 437, 637	3
HDFS 440, 640	3
NUTR 422e or f, 622e or f	1
RPED 343	3
S W 430, 630	3
SOC 410, 610	3
SPA 421	3

Community College Courses

—An introductory family and respite caregiving course, CPD 146, offered at Truckee Meadows Community College	3
—An aging and society course, PSY/SOC 276, offered at Truckee Meadows Community College and Western Nevada Community College)	3

Historic Preservation

Program Office: 512 Business Building, 784-6851

The university offers a historic preservation minor through the College of Arts and Science. Historic preservation is a rapidly expanding field devoted to the understanding, recording, preservation, restoration or adaptive reuse of significant objects, buildings, sites, neighborhoods, districts or engineering works that reflect a portion of the nation's historic and prehistoric cultural heritage. Particular emphasis is placed on the heritage of Nevada and the American West.

Students examine the principles of historic preservation, the structure and purposes of private, municipal, state and federal programs and agencies, as well as historic preservation laws. In the program, students participate in field research projects and internships with local, state and federal historic preservation agencies. Related courses from other departments and colleges are utilized in the program, depending upon the student's major program and specific interests in a field of historic preservation.

Students enrolled in the Land Use Planning Policy master's degree program may specialize in historic preservation. A program of study, usually 12-15 credit hours of related coursework, is required.

Minor

Required courses for undergraduate minor:

	Credits
A museology course in one of five departments: ANTH 309, ART 309, BIOL 309, GEOL 309, or HIST 309	3
H P 400	3
H P 401	3
H P 403	3
H P 405	3
H P 470	3
H P 475, 480; P SC 341; or L SC 107	3

Honors Program

Program Office: 101 Lincoln Hall, 784-1455

The honors program offers talented students additional opportunity for developing their skills and training their powers of observation, thought and expression. Successful participation in the program gives students the personal satisfaction of having mastered the most innovative and challenging course of study the university offers.

In completing the program, students enjoy a close relationship with their teachers and fellow honors students. Honors students may graduate *cum laude*, *magna cum laude*, or *summa cum laude* from the university. These marks of distinction indicate the student's ability to complete independent study and exhibit superior scholarship.

Admission to the program, based on high school grades, test scores, admission essay and teacher recommendations, is by application only. Students apply directly to the honors program.

Honors students pursue a regular course of study in their major and minor fields. Thirty credits of honors-designated courses are required to complete the program. These credits include honors-designated classes in the Core Curriculum and in the student's major. The 30 credits in honors courses are part of the normal degree program.

Honors students must maintain a satisfactory grade-point average to continue in the program. Honors requirements are established by the Honors Board.

Graduation *cum laude* requires a grade-point average of at least 3.5; *magna cum laude*, a grade-point average of at least 3.7 with an "A" grade on the senior thesis or project; *summa cum laude*, a grade-point average of at least 3.9 with an "A" grade on the senior thesis or project. Honors students must satisfy the grade-point average requirement by earning at least 96 credits in courses graded "A" through "F."

The honors program is administered by the Honors Program Board, which evaluates all applications for admission and all applications for graduation with honors.

Hydrology and Hydrogeology

Program Office: 357 Laxalt Mineral Research Center, 784-6465

The hydrology and hydrogeology program is administered by the program director and an interdisciplinary board comprised of faculty members with teaching and/or research interests in the areas of hydrology, hydrogeology and water resources. The programs are structured to stimulate the graduate student's professional development by:

1. Providing appropriate channels for specialization;
2. Broadening knowledge and competence through basic and applied concepts relative to the field(s) of choice;
3. Providing a learning and/or working climate conducive to subsequent professional careers in teaching, research, consulting and/or administration.

Students entering the program should have a bachelor of science degree or the equivalent in agricultural engineering, biology, civil engineering, geology, geological engineering, natural resource ecology, or a related field.

Program participants can pursue the master of science degree either with Plan A (thesis) or Plan B (nonthesis). The Ph.D. degree program is also available for qualified students who intend to pursue a career in teaching or research.

Core courses are established by the Interdisciplinary Faculty Board for both the master of science and Ph.D. programs. Prerequisites for the programs include: mathematics through differential equations, a year of physics, a year of chemistry and a course in fluid mechanics. The graduate degrees may be completed through the College of Agriculture, College of Engineering, or School of Mines.

Residents of Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, New Mexico, Oregon, Utah, Washington, or Wyoming, who qualify under the Western Interstate Commission for Higher Education (WICHE) regional graduate programs, may be awarded a first-year, out-of-state tuition waiver. To be eligible, students must send a letter with the application, stating that the applicant seeks a university grant-in-aid for the WICHE-approved program. The WICHE office from the student's home state also must send a letter to the university's Office of Admissions and Records, certifying that the applicant is eligible for the WICHE regional graduate program.

Applications for the program are processed twice a year. For the fall semester, applications and letters of reference must be received by Feb. 15. For the spring semester, applications and letters of reference must be received by Oct. 1.

Interior Design Program

Program Office: 521 Business Building, 784-6577

The baccalaureate program in interior design combines courses in environmental design, behavioral science, business, art and communications with an interior design core curriculum of 49 credits. To obtain the bachelors degree, students must complete a total of 128 credits and meet both university and program requirements. A minimum of 50 credits must be completed in upper-division courses.

The curriculum in interior design prepares students for professional careers in residential and/or commercial interior design, education and related fields.

For the course descriptions specific to interior design, see the Course Offerings section of this catalog. Because many of the courses require completion of prerequisites, students are encouraged to seek academic advisement as they pursue the degree.

Interior Design Major:

	Credits
Core requirements	49
— An architectural drafting course, ADT 105, offered at Truckee Meadows Community College (listed as DFT 105 at Western Nevada Community College)	
— An architectural construction course, ADT 107, offered at Truckee Meadows Community College	
— An introductory computer-aided design course, DFT 131, offered at Truckee Meadows Community College and Western Nevada Community College	
— INTD 151	
— INTD 256	
— INTD 275	
— INTD 350	
— INTD 353	
— INTD 354	
— INTD 355	
— INTD 358	
— INTD 452	
— INTD 456	
— INTD 459	
— INTD 470	
— TAM 216	

	Credits
Interdisciplinary expanded field of concentration:	45
Environmental Design	
H P 400, 402 or 403[1], and six credits from PSY 333, 405; SOC 376; ART/ANTH/HIST 309; or landscape design	9
Behavioral Science	
SOC 101, 342, 371, 391, 393, 480, 494; PSY 435	3
Business	
MGRS 101, 270, 325, 373, 462; ACC 201, 202	6
Art	
ART 100,[1] 116,[1] 117,[1] 121,[1] and six credits in studio art and/or art history	18
Communications	
SPCM 329[1]; and JOUR 303 or 335[1]; and three credits from JOUR 331, 333, 334, 431, 435 or SPCM 315, 410, 411, 412, 428, 435	9

Interior Design Minor:

Students majoring in another field may minor in interior design by completing the following:

	Credits
INTD 151 (four credits), 353, 355, 452	13
Two of the following courses: INTD 275, 350, 402 (at least two credits), 456	5-6
	18-19

For further information, contact the Program Coordinator.

International Affairs

Program Office: 237 Mack Social Science, 784-6791

An interdisciplinary major in international affairs is available within the College of Arts and Science. It includes a core liberal arts component that integrates course work from several disciplines and serves as the foundation for a number of specialized options that can lead toward advanced degrees and careers in international business, diplomacy, education, journalism, or public administration. Such careers normally require proficiency in foreign languages as well as professional degrees beyond the bachelor of arts.

Beginning students should take introductory economics during their first year and either begin or continue their study of foreign languages. International students should take courses in modern European and American history and in American politics before beginning course work in the major. Students would also benefit from electives in comparative cultures and religions. A course in statistics should be taken after fulfillment of the university mathematics requirement. Course work in the major can begin concurrently with the Western Tradition sequence or after part of that sequence has been completed.

The major field of concentration (core component) comprises six courses, including at least one course each in economics and political science, which are approved by the program director. A list of designated options in economics, foreign literature, geography, history, philosophy and political science that can be used to satisfy the core is available from the director. Each student also selects a specialization and must complete five specialized courses as well as a senior research thesis under the supervision of an appointed faculty member. Students may take internships as substitutes for as many as two specialized courses.

Area study specialization options, which must be supported by appropriate language study, are available for East Asia, Latin America, the former Soviet Union and Western Europe. In addition, students may select other specialization programs, including: administration, diplomacy, international political economy, or peace and security. These options do not require selection of a particular foreign language. Students who participate in study-abroad programs will increase the benefits of their international affairs major.

Study programs are individually designed in consultation with the director. All programs must include either a minor or a second major. Skill-oriented options such as economics, foreign languages, geography and journalism are strongly recommended.

Italian Studies

Program Office: 205 Frandsen Humanities, 784-6055

The College of Arts and Science offers an undergraduate minor in Italian studies under the direction of the department of foreign languages and literatures. Twenty credits are required, of which 11-14 credits must be taken through the foreign languages and literatures department and 6-9 credits of related electives (at the 300-400 level) to be taken in at least two different departments. Course work in the related electives must deal specifically with Italian topics.

Core Courses

	Credits
ITAL 204	3
ITAL 221 or ITAL 223	3
ITAL 305-306	3
ITAL 309	2
ITAL 462	3
ITAL 464	3

Related Courses

	Credits
ANTH 469	3
ART 315	3
ART 316	3
HIST 384	3
HIST 385	3
P SC 411	3

Master of Judicial Studies

Program Office: 303 Mack Social Science, 784-6270

The Master of Judicial Studies degree program is offered through a cooperative program of the University of Nevada, Reno, the National Judicial College and the National Council of Juvenile and Family Court Judges. The two judicial organizations are academic affiliates of the university and are located on campus. The purpose of the MJS program is to provide sitting judges with coordinated theoretical and practical academic experience aimed at giving them more knowledge and tools to use in their courtrooms.

Sitting judges may apply for admission to the program and, if admitted, may pursue one of two major courses of study: one intended for trial judges, the other for juvenile and family court judges. The degree requires the successful completion of 32 credits in required and elective courses, and the completion of an acceptable thesis. Candidates spend a minimum of two summers in residence at the university.

Land Use Planning Policy

Program Office: 225 Mackay Science, 784-6995

The university offers a master of science degree with a major in land use planning. The program is interdisciplinary and is offered through several departments—agricultural economics, anthropology, civil engineering, economics, geography, political science and range, wildlife and forestry. The Land Use Planning Policy Board manages the program under the administration of the College of Arts and Science. Program officials frequently consult with planning and related personnel in government and industry.

To complete the program, students must earn a minimum of 39 credits. Candidates take 21 credits of core requirements, including computer graphics, statistical analysis, environmental law, and seminars in resource and land use policy, in urban and regional planning and in economics of renewable natural resources.

The student chooses a field of specialization, for example, planning and administration, environmental policy and law, or historic preservation. In the specialized field, the student takes at least 12 credits in lectures, independent research and seminars, and completes a thesis (six credits). An internship is also highly recommended.

Degree candidates must meet the admission requirements of the Graduate School and the following program admission requirements: hold a grade-point average of at least 3.0, complete introductory work in calculus, computer programming and statistics, and display reasonable competency in communication.

Applications are submitted through the Office of Admissions and Records for evaluation by the Land Use Planning Policy Board, the participating department and its college. Approved applicants must satisfy the requirements of the program and any additional requirements of the specific department and college.

For additional information, contact the Graduate School, 784-6869.

London Study Program

Program Office: 101 Mack Social Science, 784-6562

The London Study Program is a unique and challenging overseas experience for University of Nevada, Reno students. Individuals may study at the University of London for a semester as regularly enrolled Nevada students.

Students register for all classes prior to departure, pay regular university fees and earn university credits applying toward their major and degree. Any financial aid received at the University of Nevada, Reno may be applied toward the cost of the program. Students who have completed at least 30 semester credits with a grade-point average of 2.0 or higher are eligible to participate. Enrollment is limited.

The American Institute for Foreign Studies (AIFS) provides all the necessary nonacademic support services at reasonable rates to participating students. AIFS support includes classroom facilities at the University of London, housing, social activities, cultural events, insurance coverage and transportation arrangements.

Medieval and Renaissance Studies

Program Office: 212 Frandsen Humanities, 784-4674

Medieval and Renaissance studies is an appropriate minor for students majoring in the following disciplines: anthropology, art, criminal justice, English, foreign languages and literatures, history, mathematics, music, philosophy, political science, psychology, sociology, and speech communication and theatre. The purpose of the interdisciplinary program is to enable students to understand and explore the culture of the Middle Ages and Renaissance so they may better understand the roots of Western civilization.

Students wishing to minor in Medieval and Renaissance studies must complete a total of 18 credits, which must include courses from at least two departments. Twelve of these credits must be earned in courses numbered 300 or above.

The acceptable courses for the minor are listed below in two groups, *Group A* (courses with a predominantly Medieval and/or Renaissance content) and *Group B* (courses of an auxiliary nature). At least 12 credits must be chosen from Group A.

Group A: ART 314, 315, 317, 419; ENGL 271, 272, 412, 413, 417, 418, 451, 453, 454, 458, 460, 461, 464, 465; FLL 458; FR 463, 464, 465, 466; GER 458; HIST 373, 384, 393, 473; ITAL 462, 464; MUS 201; PHIL 212; SPAN 353, 462.
Group B: ART 116, 117; ENGL 235, 292, 337; FLL 292; FR 221, 313; GER 221, 459; HIST 105, 281, 371, 372, 377, 385, 421; ITAL 221, 223; PHIL 211, 410, 411; SPAN 221, 464, 466, 469; THTR 471.

In addition, several of the departments have courses relating to individual authors, artists, themes, etc., as well as independent studies courses. Such courses, where appropriate, may be used to

fulfill the requirements of the minor.

Students who minor in Medieval and Renaissance studies may include a maximum of six credits from courses in their major department. Such credits must be in addition to those used to fulfill the requirements of the major. Courses should be chosen with the approval of an adviser and the Medieval and Renaissance Studies Committee.

Museology

Program Office: 158 Church Fine Arts Complex, 784-6836

The interdisciplinary program in museology offers students an opportunity to explore the expanding field of museum work and museum research. The museology minor is designed to provide an introduction to the field, exposure to some of the skills and techniques required of a career museologist, and an initial apprenticeship experience in a museum setting.

Today there are roughly 7,000 public museums in the United States, employing career museologists as well as professional curators, exhibit technicians, educators and others. Students contemplating a career in the museum field, or in a discipline such as anthropology, art, biology, geology, history, historic preservation, textiles and clothing, or in federal or state agency service, will find the minor particularly useful.

Students must complete six credits in required courses as well as 12 credits in elective courses. Students must consult their adviser and the chairman of the museology committee for a specific program plan (see below).

A student minoring in museology may include a maximum of six credits from courses in the major department. Such credits must be in addition to those used to fulfill the requirements for the major. Nine of the total credits in the minor must be upper-division.

Required:

	Credits
ANTH/ART/BIOL/GEOL/HIST 309	3
ANTH 480, BIOL 310, HIST 310, or ART 490	3
Additional Electives: ANTH 330, 340, 345, 360, 362, 402, 403, 423, 425; ART 100, 116, 117, 150, 258, 259, 314, 315, 316, 419; BIOL 333, 334, 370, 372, 373, 376, 377, 378; GEOL 101, 102, 160, 211, 212, 461; HIST 281, 282, 315, 371, 372, 384, 403, 404, 473; H P 301, 475; INTD 151, 353	12
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Suggested Emphases:

History Emphasis: ANTH 340; HIST 281, 282, 309, 310, 315, 371, 372, 384, 403, 404, 473; H P 301, 474

Science Emphasis: ANTH or BIOL 309; ANTH 480 or BIOL 310; ANTH 330, 340, 345, 360, 362, 402, 403, 423, 425; BIOL 333, 334, 370, 372, 373, 376, 377, 378; GEOL 461; HIST 281, 282

Exhibits Emphasis: ANTH 330, 345; ART 100, 116, 117, 150, 258, 259, 309, 319, 419

National Student Exchange

Program Office: 103 Thompson Student Services, 784-6116

The university is a member of the National Student Exchange (NSE). The program provides qualified undergraduate students with an opportunity to become better acquainted with different social and educational patterns in other areas of the United States. Governed by the philosophy that participation is essential to education, the NSE encourages students to experience new lifestyles and appreciate various cultural perspectives.

In their sophomore or junior year, Nevada residents may apply for exchange to one of several regionally accredited state institutions across the country (currently more than 100 schools participate.). To be eligible, students must hold a cumulative university grade-point average of at least 2.5. If accepted, the student pays in-state fees at their selected school.

Religious Studies

Program Office: 19 Frandsen Hall, 784-6750

The interdisciplinary Religious Studies program allows students to investigate aspects of religious experience without regard to sectarian sentiment or affiliation.

Religious Studies Minor

Students who seek a minor in religious studies must complete a total of 18 credits, including courses from at least two departments and R ST 101, an introductory course in religious studies. Twelve of these credits must be earned from courses numbered 300 or above. The introductory course is a prerequisite for 300-level courses unless waived by the religious studies adviser.

The courses required for the minor are listed below in two groups, *Group A* and *Group B*. At least 12 credits must be chosen from Group A; other courses may be selected from Group B.

Group A: ANTH 322; ENGL 268, 335, 337; HIST 317, 318; PHIL 112, 323; B V 264; PSY 350; R ST 101; SOC 333.

Group B: ANTH 338; ART 116, 314; ENGL 292, 333, 339. 340, 453, 464; HIST 105, 371, 372, 373, 403, 404, 427; PHIL 201, 203, 211, 401; S W 340.

In addition, several departments at the university offer courses relating to individual authors, artists and themes, as well as courses in independent studies. Where the subject matter of such courses is appropriate, they may be used toward fulfillment of the minor requirements.

A student minoring in religious studies may include a maximum of six credits from courses in the major department. Such credits must be in addition to those used to fulfill the requirements of the major. Courses should be chosen with the help of the student's adviser and the minor program must be approved by the Religious Studies Committee.

Reserve Officers Training Corps (ROTC)

Program Office: Hartman Hall, 784-6751

The university's Reserve Officers Training Corps (ROTC) provides men and women with an opportunity to earn a commission in the United States Army while completing bachelor's and master's degree requirements. For complete program information, refer to "Military Science" in the College of Arts and Science section of this catalog.

Teacher Licensure

Program Office: 206 Education Building, 784-4961

Students who successfully complete the professional degree requirements of the university's College of Education, with major and minor teaching fields, simultaneously meet all requirements for licensure by the Nevada State Department of Education. However, proper application must be made to the state office. **New state licensure requirements are met through appropriate courses listed in the College of Education section of this catalog.**

Advisement for teacher education programs is offered through the curriculum and instruction department and the dean of the College of Education, in cooperation with department chairmen and deans of the Colleges of Arts and Science, Business Administration, Human and Community Sciences and the School of Mines.

The programs for teacher education at the university conform with standards of the National Council for Accreditation of Teacher Education, which are considerably higher than the minimum requirements currently demanded by the Nevada State Department of Education.

Graduates of the University of Nevada, Reno or other universities who have not followed the approved teacher education curriculum may obtain information concerning minimum requirements for licensure from the Nevada State Department of Education, 400 West King Street, Carson City, NV 89710. Students who wish to be licensed in another state should obtain a statement of requirements from that state's department of education.

A postbaccalaureate certification program for graduates is offered through the College of Education.

Teaching English as a Second Language (TESL)

Program Office: 206 Education Building, 784-4961

The program provides a course of study leading to the master of arts degree with a major in teaching English as a second language. The program is interdisciplinary, requiring courses from both the English department in the College of Arts and Science, and the department of curriculum and instruction in the College of Education.

Students may choose one of two track options: TESL in the elementary school or general TESL. The first track is designed primarily for elementary-level teachers; the second track is geared toward working with adult ESL learners. The program tracks are equally grounded in theory, and both require a high level of practical expertise upon completion of the degree program.

In order to earn the degree, students must complete a minimum of 36 credits. Candidates take 18 credits of core requirements, nine of which must be at the 700 level. Required core courses are: C I 776; ENGL 610, 636, 639, 739; and either C I 744, CEP 700 or ENGL 711. The remaining 18 credits are taken in the student's area of specialization.

Students enrolling in the first track take the following courses: C I 631, 645, 646, 698, 726, and three credits of 700-level options, such as ENGL 712, 740, 750. Students enrolling in the second track take the following courses: ENGL 638, 640, 712, 740, and six credits of options, such as ENGL 750, 789; C I 698 or 726. After they complete the program, students in both tracks are required to take a comprehensive written and oral examination.

In order to gain graduate standing admission to the program, students must hold a cumulative grade-point average of at least 3.0 for the last two years of undergraduate study. Non-native speakers of English are required to earn a TOEFL score of at least 550. Graduate Record Examination (GRE) scores are also required. Students should contact their adviser for specific examination requirements.

University Studies Abroad Consortium

Program Office: 281 Getchell Library, 784-6569

University Studies Abroad is a consortium project of the University of Nevada, Reno and seven other universities offering programs on four European campuses, a Latin American campus and a campus in Australia. The programs are diversified, allowing students to fulfill all university foreign language requirements in just one semester. Field trips and fully-integrated living opportunities are a key part of the programs.

Australian Studies

Undergraduate and graduate courses in the disciplines of architecture, education, humanities, social sciences, business and management, nursing and the sciences are offered. Scheduled during the spring (March-June) and fall (July-November) semesters, the program is held at Deakin University in Geelong, Australia (43 miles from Melbourne).

Basque/Spanish Studies

Undergraduate and graduate courses in Basque or Spanish language (all levels), anthropology, history, political science, literature, economics, folk dance, art history and cuisine are available during the summer, fall and spring semesters. The programs are offered in the seaside resort city of San Sebastian near the Spanish / French border.

French Studies

Summer, fall or spring semesters of intensive French language instruction at the elementary, intermediate and advanced levels are offered. Courses in Basque studies, French literature, geography, history and political science are also available. The academic-year programs are offered at the University of Pau in the southwestern France. The summer semester program is offered at Saint Jean-de-Luz, France.

Italian Studies: International Business and Economics

The program introduces students to the economic structure of Italy, the European Common Market and principles of international business and economics. Participating students gain a working knowledge of the Italian language and a deeper understanding of Italy's culture, history and arts. The one- or two-semester program is offered in the northwestern Italian city of Turin.

Spanish/Latin American Studies in Chile

Students have the opportunity to study the language, art, economics, history and culture of Chile and Latin America during the fall and/or spring semesters. The program is offered in Santiago, Chile.

Western Interstate Commission for Higher Education (WICHE)

Program Office: 107 Old Gym, 784-4900

The state of Nevada contributes nearly $1 million *each year* in support funds to Nevadans attending out-of-state schools under the WICHE program. Currently, Nevada provides loans/grants to scholars in the Professional Student Exchange Program in the fields of **law, physical therapy, occupational therapy, veterinary medicine, dentistry, optometry, library science and pharmacy.**

The recipient selection process is competitive and based upon composite scoring of grade-point averages and admissions test scores. The only requirement is that the applicant must be a Nevada resident for one year prior to the date of application.

To receive primary consideration, applications must be received by Oct. 30 of the year preceding the student's planned enrollment in professional school. Official transcripts must be submitted and required admissions examinations must be taken before Oct. 30. Applicants who miss the deadline are placed on an alternate waiting list.

The Nevada WICHE office also has information on Western Regional Graduate Programs, which enable Nevadans to pursue graduate studies at out-of-state institutions at resident tuition rates.

In addition, Nevada students can participate in a tuition reduction program at the undergraduate level. Under WICHE's Western Undergraduate Exchange Program (WUE), Nevada residents can attend 141 participating colleges and universities in 12 western states. The tuition cost for Nevada residents is just 50 percent more than the tuition fees charged in-state residents. There are limitations and restrictions. Call the WICHE office for program details.

Footnotes

[1] Required courses

Course Information

The assigned letter or number following the departmental designation indicates the appropriate level of instruction for each course:

A,B,C, etc., are special noncredit courses.
1-99 are nonbaccalaureate-level courses.
100-199 are freshman courses.
200-299 are sophomore courses.
300-399 are junior courses.
400-499 are senior courses.
500-599 are graduate courses.
600-699 are graduate courses. Some are dual listed with 400-level courses having a graduate component.
700-799 are graduate courses.

NOTE: Each student is personally responsible for registration in the correct course number and class level as approved by the faculty adviser.

Symbols

An interpretation of the symbols which appear in the course listings follows:

a, b, c, etc. indicate successive terms of the same course which may be repeated for credit.

(3+0), (1+6), etc. show the number of 50-minute class periods of lecture (or recitation or discussion) plus the total number of periods of laboratory (or workshop or studio) per week. The number of class periods is not necessarily the same as the number of times the class meets. Thus (3+0) means the course meets for three periods of lecture per week and does not have any laboratory periods. Likewise, (1+6) means the course meets for one period of lecture and six periods of laboratory per week; the laboratory may meet twice a week for three periods each or three times a week for two periods each. For more specific information about a particular course, the student should consult the schedule of classes.

1, 2, etc. credits which appear after the parenthesis indicate the number of credits the course carries each semester.

S/U (in italics) means the course is graded Satisfactory or Unsatisfactory only.

Abbreviations

A SC—Animal Science
ACC—Accounting
AGEC—Agricultural Economics
AGED—Agricultural Education and Communications
ANAT—Anatomy
ANTH—Anthropology
ART—Art
BADM—Business Administration
B CH—Biochemistry
B V—Beliefs and Values
BASQ—Basque
BIOL—Biology
C E—Civil Engineering
C I—Curriculum and Instruction
C J—Criminal Justice
C S—Computer Science
CEP—Counseling and Educational Psychology
CH E—Chemical Engineering
CHEM—Chemistry
CHS—Community Health Sciences
CIS—Computer Information Systems
CLS—Clinical Laboratory Science
CMB—Cell and Molecular Biology
CMPP—Cellular and Molecular Pharmacology and Physiology
E E—Electrical Engineering
E L—Educational Leadership
E S—Ethnic Studies
EC—Economics
EECB—Ecology, Evolution and Conservation Biology
ENGL—English
ENGR—Engineering
ENV—Environment
FCM—Family and Community Medicine
FLL—Foreign Languages and Literatures
FR—French
G E—Geological Engineering
GEOG—Geography
GEOL—Geology
GER—German
GK—Greek
H P—Historic Preservation
HCS—Human and Community Sciences
HDFS—Human Development and Family Studies
HUEC—Human Ecology
HIST—History
HON—Honors Program
IMED—Internal Medicine
INTD—Interior Design
ITAL—Italian
JAPN—Japanese
JOUR—Journalism
J S—Judicial Studies
LAT—Latin
L SC—Library Science
MECH—Mechanical Engineering
MATH—Mathematics
MED—Medicine
METE—Metallurgical Engineering
MGRS—Managerial Sciences
MICR—Microbiology
MIL—Military Science
MINE—Mining Engineering
MUS—Music
NURS—Nursing
NUTR—Nutrition
OBGY—Obstetrics and Gynecology
P SC—Political Science
PATH—Pathology and Laboratory Medicine
PCHY—Psychiatry and Behavioral Sciences
PEDI—Pediatrics
PHAR—Pharmacology
PHIL—Philosophy
PHSY—Physiology
PHYS—Physics
PSY—Psychology
R ST—Religious Studies
RPED—Recreation, Physical Education and Dance
RUSS—Russian
RWF—Range, Wildlife, and Forestry
S W—Social Work
SOC—Sociology
SPA—Speech Pathology and Audiology
SPAN—Spanish
SPCM—Speech Communication
SURG—Surgery
TAM—Textile and Apparel Merchandising
THTR—Theatre
V M—Veterinary Medicine
W S—Women's Studies
W T—Western Tradition

Course Offerings

Prerequisites

The prerequisites listed for each course must be satisfied prior to registration, or the advanced approval of the department offering the course must be obtained, for enrollment to be valid.

Inactive Courses

Certain courses are approved for offering as the need arises but due to their infrequent scheduling are listed as being inactive. Individuals desiring specific information about any inactive course should contact the chair of the department.

Changes

All courses are subject to change without advance public notice. In addition, the university reserves the right to cancel or limit enrollment in any scheduled class.

ACCOUNTING (ACC)

201 INTRODUCTORY ACCOUNTING I (3+0) 3 credits
Purpose and nature of accounting, measuring business income, accounting principles, assets and equity accounting for external financial reporting.

202 INTRODUCTORY ACCOUNTING II (3+0) 3 credits
Forms of business organization; cost concepts and decision making; break-even analysis, fixed and variable costs, budgeting for internal reporting. Prerequisite: ACC 201.

UPPER-DIVISION COURSES: Business students must have satisfactorily completed the entire lower-division business core and CIS 203. (See section on *Upper-Division Courses* in the College of Business Administration section.)

303 INTERMEDIATE ACCOUNTING I (3+0) 3 credits
Theory and practice of accounting for cash, receivables, prepaid and accrued items, plant and equipment, intangible assets.

304 INTERMEDIATE ACCOUNTING II (3+0) 3 credits
Shareholder's equity, dilutive securities, and investments; issues related to income determination, preparation and analysis of financial statements. Prerequisite: ACC 303.

309 MANAGEMENT ACCOUNTING I (3+0) 3 credits
Cost analysis applied to decision-making. Materials, labor and overhead, relevant cost, joint and by-products, job order and process costing, budgeting and standard costs.

311 AUDITING I (3+0) 3 credits
Auditor's standards and legal responsibilities; statistical sampling and evidence gathering, internal control and audit programs for assets, liabilities, revenue and expenses; preparation of audit reports. Prerequisite or corequisite: ACC 304.

313 FEDERAL TAX ACCOUNTING I (3+0) 3 credits
General concepts of federal income taxation, including research methods and planning techniques, with emphasis upon application to individuals as employees and proprietors.

395-396 INTERNSHIP IN ACCOUNTING 1 to 3 credits each S/U *only*
Cooperative education wherein students apply knowledge to real situations in program developed by company official and faculty adviser to optimize learning experiences. Term paper required. Prerequisite: first semester seniors only.

405, 605 ADVANCED ACCOUNTING (3+0) 3 credits
For groups of companies. Subsidiary affiliates, joint ventures and segments. Stock exchange regulations and reporting. Alternative theories of accounting. Prerequisite: ACC 304.

407, 607 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING (3+0) 3 credits
Accounting for governmental and not-for-profit enterprises, including municipalities, hospitals and universities. Specific topics include fund accounting, financial statement preparation and basic auditing issues. Corequisite: ACC 304.

410, 610 MANAGEMENT ACCOUNTING II (3+0) 3 credits
Continuation of cost accounting concepts; nonmanufacturing costs, relevant costs, inventory valuation, joint and by-products and capital budgeting. Prerequisite: ACC 309.

414, 614 FEDERAL TAX ACCOUNTING II (3+0) 3 credits
Survey of income tax principles governing the formation and operation of corporations, partnerships and S-corporations, including liquidating and nonliquidating distributions. Prerequisite: ACC 313.

420, 620 INTERNATIONAL ACCOUNTING (3+0) 3 credits
Emphasis on comparative financial reporting systems and managerial reporting problems of multi-national firms. Course fulfills accounting elective or international requirements, but not both. Prerequisite: ACC 304.

424, 624 COMPUTER-BASED AUDITING (3+0) 3 credits
Develop control techniques for security and integrity of computer systems and analyze computer audit methods for compliance and substantive testing in batch and online systems. Prerequisite or corequisite: ACC 480 or CIS 461.

460, 660 COMMERCIAL TRANSACTIONS LAW FOR ACCOUNTANTS (3+0) 3 credits
Introduction to the legal environment governing commercial transactions. Topics will include the law of contracts, sales, commercial paper, secured transactions, and debtor-creditor relationships.

461, 661 BUSINESS ORGANIZATIONS LAW FOR ACCOUNTANTS (3+0) 3 credits
Introduction to the legal environment governing business organizations. Topics will include the law of agency, partnership, corporations, government regulation of business, property and accountant's liability.

470, 670 TAX PLANNING AND RESEARCH (3+0) 3 credits
Thorough analysis of the process of tax research. Tax planning concepts through the medium of problem-oriented investigation. Extensive use of library materials. Topical matter will be selected from relevant contemporary issues. Prerequisite: ACC 313.

480, 680 ACCOUNTING SYSTEMS AND AUTOMATION (3+0) 3 credits
Accounting information systems with an emphasis on the computer's role in these systems. Topics include data bases. computerized control systems, computer crime and systems study work for a systems revision. Prerequisite: ACC 304, 309, 311, 313.

490, 690 INDEPENDENT STUDY 1 to 3 credits
Independent study in selected topics. Maximum of 6 credits.

493, 693 ACCOUNTING THEORY (3+0) 3 credits
Review of accounting literature and contemporary accounting problems. Emphasis placed on the development of basic accounting concepts. Prerequisite: ACC 304.

494, 694 SPECIAL TOPICS (3+0) 3 credits
Selected contemporary topics in the discipline of accounting.

Inactive Courses
412, 612 AUDITING II (3+0) 3 credits
491, 691 CPA PROBLEMS I (3+0) 3 credits

AGRICULTURAL ECONOMICS (AGEC)

100 AGRICULTURE AND RESOURCES IN THE ECONOMY (3+0) 3 credits
Economic principles related to agricultural and natural resources. Topics: price determination, emphasizing demand; price searching and taking; sources of and prescriptions for fluctuating economy.

202 AGRICULTURAL AND RESOURCE ECONOMICS (3+0) 3 credits
Production principles affecting the allocation of scarce agricultural and renewable resources by individual firms and implications for aggregate supply and resulting price determination.

211 AGRIBUSINESS ANALYSIS (2+2) 3 credits
Use of financial records in planning and analyzing business records.

213 MICROCOMPUTERS IN AGRIBUSINESS (2+3) 3 credits
Introduction to the use of microcomputers. Emphasizes use of word processing, spreadsheets, and data management.

270 INTRODUCTION TO STATISTICS (3+3) 4 credits
Principles of statistics and application to the fields of agriculture and life sciences.

280 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem in agricultural and resource economics.

310 PRODUCTION ECONOMICS (3+0) 3 credits
Application of techniques and principles of economics to the problems of production of goods and services. Prerequisite: microeconomics.

312 INTERMEDIATE MICROCOMPUTER COMMUNICATIONS (1+0) 1 credit
Applications of communications software and word processing. Prerequisite: AGEC 213.

313 INTERMEDIATE APPLICATIONS OF SPREADSHEETS (1+3) 2 credits
Use of electronic spreadsheets with applications to financial and production business records. Prerequisite: AGEC 213.

314 INTERMEDIATE DATA BASE MANAGEMENT (1+3) 2 credits
Use of data base management software with applications to financial and production records. Prerequisite: AGEC 213.

315 AGRIBUSINESS FINANCE (3+0) 3 credits
Principles of finance for management of agribusiness enterprises. Financial analysis, planning and forecasting and decisions involving capital assets. Prerequisite: microeconomics.

316, 416 INTERNSHIP 1 to 3 credits S/U *only*
Coordinated work-study programs in industry or government under the direction of a faculty adviser. Written progress reports are prepared periodically and at the conclusion of the internship.

322 COMMODITY FUTURES MARKET (3+0) 3 credits
Activities of commodity futures exchanges, mechanics of trading, hedging and forward pricing; analysis of commodity prices; regulation of trading. Prerequisite: EC 102 or AGEC 202.

332 AGRICULTURAL ECONOMICS POLICY (3+0) 3 credits
Agricultural economic policy in the U.S. Review of past and present policies and evaluation of these policies. Prerequisite: AGEC 202 or EC 102.

350 QUANTITATIVE MODELING FOR AGRIBUSINESS ANALYSIS (3+0) 3 credits
Quantitative methods and models for analyzing resource allocation problems in agricultural economics. Prerequisite: MATH 176.

364 ECONOMICS OF OUTDOOR RECREATION (2+2) 3 credits
Application of economic principles to outdoor recreation problems and policies. Prerequisite: AGEC 202 or EC 102.

386 AGRIBUSINESS FIELD TRIP (0 to 3+6) 1 to 2 credits S/U *only*
Tours of agribusiness enterprises in Nevada or California. A one-week field trip during spring break to observe the management and marketing practices used in successful operations of different agribusiness structures. May be repeated once. Paper required for 2 credits. Prerequisite: AGEC 202 or EC 102.

400 SEMINAR (1+0) 1 credit
Research work and reports on topics of interest in agricultural and resource economics.

411, 611 AGRIBUSINESS DECISION ANALYSIS (2+3) 3 credits
Case study problems related to agribusiness, ranching and farming will be used to study methodologies of decision analysis. Linear programming and risk analysis will be introduced. Prerequisite: AGEC 211, 213 or equivalent.

425 AGRIBUSINESS MARKETING (3+0) 3 credits
Concepts of marketing agricultural food and fiber products. Applications of marketing principles and forecasting emphasizing food and fiber products of local, regional, and national importance. Prerequisite: microeconomics.

428 INTERNATIONAL AGRICULTURAL MARKETING (3+0) 3 credits
Discussion of international trade as it impacts U.S. agriculture. Review U.S. and foreign policies that affect trade and consequential impact on prices of domestic commodities. Prerequisite: AGEC 202.

460, 660 AGRICULTURE AND ECONOMICS OF DEVELOPMENT (3+0) 3 credits
Topic areas include growth models, the role of agriculture in regional or national economies, factor markets, macro and trade policies, natural resources and planning techniques. Prerequisite: AGEC 202; EC 102 or SOC 101.

463, 663 DISCRETE SYSTEMS SIMULATION (3+0) 3 credits
Analysis of discrete-event systems via computer simulation models. Emphasis on model building and the design and analysis of simulation experiments for complex systems.

466, 666 NATURAL RESOURCE AND ENVIRONMENTAL ECONOMICS (3+0) 3 credits
Emphasizes interrelations of economics principles and institutional factors affecting use and value of natural resources. Attention given to special problems of land, water, and environment. Prerequisite: AGEC 202 or EC 102.

470, 670 INTERMEDIATE STATISTICAL METHODS (3+0) 3 credits
Statistical topics including analysis of variance, simple and multiple regression and analysis of enumeration statistics. Emphasizes selection and application of statistical methods to realistic problems. Computers used to assist in statistical analyses. Prerequisite: one course in statistics.

472, 672 REGIONAL ECONOMIC ANALYSIS (3+0) 3 credits
(See EC 472 for description.)

480 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem in agricultural and resource economics.

485, 685 SPECIAL TOPICS (1 to 3+0) 1 to 3 credits
Presentation and review of recent research, innovations and developments in agricultural and resource economics. Includes the areas of marketing, production, economics, regional development, resource development and recreation economics. Maximum of 6 credits.

705 ADVANCED STATISTICAL ANALYSIS (2+2) 3 credits
Advanced analysis of variance and covariance, multiple and curvilinear regression, nonparametric statistics and sampling finite populations. Emphasis is given to computer applications. Prerequisite: statistics course.

710 ADVANCED AGRICULTURAL PRODUCTION ECONOMIC (3+0) 3 credits
Production principles applied to allocation of land, labor, capital and management in agriculture. Prerequisite: AGEC 310.

715 MULTIVARIATE STATISTICAL ANALYSIS (2+1) 3 credits
Application of multivariate analysis of variance and regression, principal component and factor analysis, discriminant and cluster analysis for biol-

ogy, resource management, ecology, and economics. Prerequisite: AGEC 470, 670 or equivalent.

720 AGRICULTURAL PRICES AND MARKETS (3+0) 3 credits
Examination of alternative market structures and determination of agricultural product prices.

730 ADVANCED AGRICULTURAL ECONOMIC POLICY (3+0) 3 credits
Analysis of the effects of alternative economic policies on production, resource allocation and welfare in the agricultural sector. Prerequisite: AGEC 332.

740 RESEARCH METHODOLOGY (1+0) 1 credit
Scientific method applied to research in agricultural economics. Survey of various schools of thought concerning use of economic theory and methods of measurement in research. Prerequisite: AGEC 310.

750 QUANTITATIVE METHODS IN AGRICULTURAL RESOURCE ECONOMICS (3+0) 3 credits
Application of quantitative methods such as mathematical programming, Markov processes and simulation to problems in agriculture, natural resources and rural development. The computer is used to solve problems encountered by resource managers and administrators.

755 EXPERIMENTAL DESIGN (3+0) 3 credits
Advanced techniques of statistical inference. Design and analysis of experiments in biological and engineering fields and use of statistical programming (SAS) in data analysis.

760 ADVANCED NATURAL RESOURCES ECONOMICS (3+0) 3 credits
Applications of economic principles to natural resource development, use, conservation and policy. Prerequisite: EC 321.

790 SEMINAR (1 to 3+0) 1 to 3 credits
Research work and reports on topics of interest in agricultural and resource economics.

793 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem in agricultural and resource economics. Maximum of 6 credits.

795 COMPREHENSIVE EXAMINATION 0 credit S/U *only*

796 PROFESSIONAL PAPER 1 to 3 credits S/U *only*
Required of all graduate students who wish to complete the master of science degree under Plan B.

797 THESIS 1 to 6 credits

798 INTERNSHIP 1 to 3 credits S/U *only*
Coordinated work-study programs in industry or government under the direction of a faculty adviser. Written progress reports are prepared periodically and at the conclusion of the internship.

AGRICULTURAL EDUCATION AND COMMUNICATIONS (AGED)

480 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem in (a) agricultural education, (b) industrial mechanics. Maximum of 6 credits.

485, 685 SPECIAL TOPICS (1 to 3+0) 1 to 3 credits
Presentation and review of recent research, innovations, and developments in (a) agricultural and vocational education, (b) agricultural mechanics. Maximum of 6 credits.

ANATOMY (ANAT)

490, 690 INDEPENDENT STUDY 1 to 8 credits S/U *only*

601 HUMAN GROSS ANATOMY AND EMBRYOLOGY (3+9) 6 credits
Presents concepts in gross anatomy and embryology. Laboratories employ use of models and cadaver dissection.

602 HUMAN HISTOLOGY (2+3) 3 credits
Presents concepts of human medical histology and ultrastructural anatomy. Laboratories employ use of microscope slides, models and electron micrographs.

603 HUMAN NEUROANATOMY (3+3) 4 credits
Introduction to the central nervous system. Designed for medical students.

616 SEMINAR IN ANATOMY (1+0 per credit) 1 to 8 credits
Library research and presentation in seminar fashion of a selected topic in any subdiscipline of anatomy.

617 SELECTED TOPICS IN ANATOMY (0+3 per credit) 1 to 8 credits
Comprehensive study by dissection of a selected area or system of the human body.

618 READINGS IN ANATOMY (1+0 per credit) 1 to 8 credits *S/U only*
Readings on selected topics in anatomy; involves library research and discussions with the anatomy staff; may include preparation and submission of a paper.

619 RESEARCH IN ANATOMY (0+3 per credit) 1 to 8 credits
Individual or independent work on a special problem under the supervision of a member of the anatomy staff with whom the student's interests are closely related.

725 MEDICAL HUMAN ANATOMY (4+12) 8 credits
Schedule in anatomy comparable to that offered in ANAT 601, 602, 603. For students of medicine and graduate students in life sciences.

726 HEAD AND NECK ANATOMY I (2+3) 3 credits
Emphasis on clinical correlation and related aspects of oral biology. Prerequisite: a degree in medicine or dentistry.

727 HEAD AND NECK ANATOMY II (2+3) 3 credits
Continuation of ANAT 726. Detailed anatomy and dissection of the deeper head areas with emphasis on the oral cavity. Neurological implication of lesions of cranial nerves. Prerequisite: ANAT 726.

728 ADVANCED HUMAN NEUROANATOMY AND NEUROPHYSIOLOGY (2+3) 3 credits
Functional anatomy of fiber tracts and nuclear centers of the central nervous system, clinical neurology in terms of lesions of the central and peripheral nervous system; recent findings of neurophysiology in conjunction with neuroanatomy. Prerequisite: a degree in medicine or dentistry.

ANIMAL SCIENCE (A SC)

100 ELEMENTS OF LIVESTOCK PRODUCTION (3+0) 3 credits
Fundamental concepts in care, management and economics of food producing animals. Includes contributions of the Nevada and U.S. animal industries in providing food on an international basis.

162 BASIC HORSEMANSHIP (1+0) 1 credit
Elementary horse nutrition, health and management, including a study of the horse's anatomy and conformation as related to tiding.

163 HORSEMANSHIP (1+3) 2 credits *S/U only*
Basic equitation theory and principles and their application in English and Western equitation.

200 STABLE MANAGEMENT (1+2) 2 credits
Skill development in the management of a commercial stable including care of horses, budget planning, records, public relations and business considerations. Prerequisite: A SC 162, 163.

201 LIVESTOCK SELECTION (1+3) 2 credits
Evaluation of livestock with major emphasis on beef, swine and sheep. Prerequisite: A SC 100.

203 MEAT TECHNOLOGY (2+3) 3 credits
Principles of conversion of animals to muscle foods. Processing, packaging preservation and sensory evaluation of meat as it relates to the consumer and food service industry.

206 HORSE HUSBANDRY (2+3) 3 credits
Care and management of horses including breeding, disease, nutrition and selection. Prerequisite: A SC 100 or BIOL 191.

208 INTERMEDIATE HORSEMANSHIP (0+3) 1 credit
Advancement of skill levels in theory and practice to the intermediate stages of English and western riding, beginning dressage, equitation over fences, western riding patterns. Prerequisite: A SC 162, 163.

211 FUNDAMENTALS OF ANIMAL NUTRITION (3+0) 3 credits
Basic principles of nutrition including maintenance, growth, reproduction and lactation: Composition of feedstuffs and role of nutrients in the animal's body. Prerequisite: A SC 100; CHEM 101.

280 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem in animal science.

305 INTRODUCTION TO DEBOURRAGE (1+4) 3 credits
Schooling of the horse, gentling, longing, bridling, and preliminary and intermediate training at various gaits and movements. Prerequisite: A SC 162, 163, 206.

307 PHYSIOLOGY OF THE DOMESTIC ANIMAL (3+0) 3 credits
Physiology of the neuromuscular, central nervous, circulatory, respiratory, digestive, endocrine, reproductive and excretory systems with special reference to domestic animals. Prerequisite: BIOL 191.

309 PHYSIOLOGY OF REPRODUCTION (3+0) 3 credits
Reproductive organs and their functions, neural and endocrine interrelationships and responses to environmental influences. Prerequisite: CHEM 142; A SC 307 or BIOL 224.

315 ADVANCED HORSEMANSHIP (0+3) 1 credit
Advanced skill development for English and western riders. Combined training, dressage, jumping, flying lead changes, riding patterns, cattle work. Prerequisite: A SC 162, 163, 208.

316, 416 INTERNSHIP (1 to 3+0) 1 to 3 credits *S/U* only
Coordinated work-study programs in industry or government under the direction of a faculty adviser. Written progress reports are prepared periodically and at the conclusion of the internship.

325 ANIMAL AND PLANT GENETICS (2+3) 3 credits
Mechanisms of heredity, variation, methods of selection, systems of mating with special reference to plants and livestock. Prerequisite: BIOL 191.

400 SEMINAR (1+0) 1 credit
Reports on research work and topics of interest in animal science.

406, 606 ADVANCED NUTRITION MANAGEMENT (3+3) 4 credits
Interrelationships between feed composition and nutrient requirements, formulation of rations by computers; ration evaluation and avoidance of imbalances. Prerequisite: A SC 211; CHEM 142 or equivalent.

411, 611 TECHNIQUES IN LIVESTOCK REPRODUCTION (1+3) 2 credits
Evaluation and application of various techniques to control and determine reproductive functions in livestock. Prerequisite: A SC 309 or equivalent.

412 BEEF AND SHEEP PRODUCTION (2+3) 3 credits
Principles of beef and sheep production and the application of breeding, physiology and nutrition to their production under western ranch and farm environments. Prerequisite: A SC 100; BIOL 191.

413, 613 RANGE-LIVESTOCK INTERACTION (3+0) 3 credits
Emphasis on species and breed selection, physiological considerations and alleviating detrimental effects on livestock. Interactions among livestock, wildlife and plant communities. Prerequisite: A SC 100 or BIOL 191.

414, 614 ENDOCRINOLOGY (3+0) 3 credits
Structure and function of endocrine glands and how their secretions regulate biochemical reactions, integrate tissue and organ systems and control behavior. Prerequisite: A SC 307 or BIOL 223, 224. (Same as BIOL 414, 614.)

422, 622 INSECT PESTS OF ANIMALS (3+0) 3 credits
Detailed study including principles of control of more economic species of insects and related organisms which affect the urban homeowner and the health and well-being of man and domesticated animals.

423 HORSE PRODUCTION (2+3) 3 credits
Principles of equine production and application of breeding, physiology and nutrition to their production and marketing. Prerequisite A SC 206.

424 DAIRY CATTLE PRODUCTION (1+3) 2 credits
Principles of dairy production including management, lactation, nutrition, physiology, milk and by-products. Prerequisite: A SC 100, BIOL 191.

480 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem in animal science. Maximum of 6 credits.

485 SPECIAL TOPICS (1 to 3+0) 1 to 3 credits.
Presentation and review of recent research, innovations and development in various animal science areas including animal breeding, animal health, animal management, meats, nutrition and physiology. Maximum of 6 credits.

700 STATISTICAL METHODS (2+2) 3 credits
Techniques of statistical inference and their application. Prerequisite: AGEC 270.

782 ADVANCED TOPICS IN REPRODUCTION 1 to 3 credits
Intensive study of topics in (a) morphological and functional changes, (b) gamete development and functions, (c) early embryonic development and manipulation, (d) chemical messengers. Maximum of 6 credits.

783 ADVANCED TOPICS IN ANIMAL NUTRITION 1 to 3 credits
Intensive study of topics in (a) energy metabolism, (b) nitrogen metabolism, (c) mineral and vitamin metabolism, (d) laboratory techniques. Maximum of 6 credits.

790 SEMINAR (1+0) 1 credit
Research work and reports on topics of interest in animal science. Maximum of 2 credits.

791 SPECIAL TOPICS 1 to 3 credits
Intensive study of special topics in animal science Maximum of 6 credits.

792 SPECIAL PROBLEMS (2+0) 2 credits
Recent research in various areas in animal science including nutrition, physiology, breeding, meats or animal health is discussed and evaluated. Maximum of 6 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 1 to 3 credits *S/U only*
Required of all graduate students who wish to complete the master of science degree under Plan B.

797 THESIS 1 to 6 credits

ANTHROPOLOGY (ANTH)

101 THE HUMAN EXPERIENCE (3+0) 3 credits
Introduction to human culture and society. Understanding human diversity through comparative study of politics, religion, economics, and kinship.

102 INTRODUCTION TO HUMAN ORIGINS AND EVOLUTION (3+1) 3 credits
Biological and evolutionary origins of humans, with consideration of population genetics, living primates, fossil record and human variation. Includes four laboratory experiences.

200 PEOPLES AND CULTURES OF THE OLD WORLD (3+0) 3 credits
Comparative survey of selected cultures of Asia, Africa and Europe. Discussion of processes of cultural change and adaptations to environments. Prerequisite: ANTH 101.

201 PEOPLES AND CULTURES OF THE AMERICAS AND PACIFIC (3+0) 3 credits
Comparative survey of selected cultures of the Americas and Pacific region. Discussion of processes of cultural change and adaptations to environments. Prerequisite: ANTH 101.

202 ARCHAEOLOGY (3+0) 3 credits
Uses of archaeology to understand and interpret major stages of human cultural development from beginnings to first civilizations.

205 ETHNIC GROUPS IN CONTEMPORARY SOCIETIES (3+0) 3 credits
Ethnic relations in the U.S. and other societies where cultural and "racial" pluralism illustrates problems and processes of social interaction. Prerequisite: introductory course in one of the social sciences. (Same as SOC 205.)

210 FOLKLORE, MYTH, AND LEGEND (3+0) 3 credits
Anthropological analysis of the human experience as expressed in myths, legends, folktales, and oral tradition.

212 MALE AND FEMALE: ANTHROPOLOGICAL PERSPECTIVES (3+0) 3 credits
Examination of male and female roles and family organization in human societies from the perspective of human evolutionary theory and comparative ethnographic evidence. Prerequisite: ANTH 101.

215 ANTHROPOLOGICAL FILM (2+2) 3 credits
Historical development and contemporary significance of documentary films about non-western peoples and cultures.

281 INTRODUCTION TO LANGUAGE (3+0) 3 credits
Nature and function of language, including an introduction to the linguistics subsystems of modern English and the development of the English language. (Same as ENGL 281.)

300 BEGINNING FIELD ARCHAEOLOGY (1+6) 3 credits
Practical experience in archaeological survey and excavation. Saturday lectures, exercises, and field trips.

309 MUSEOLOGY (3+0) 3 credits
History and philosophy of museums; their role in contemporary society; museum organization, management, program planning, funding, publications, guest speakers, supervised field trips to museums. (Same as ART 309; BIOL 309; GEOL 309; HIST 309.)

312 COMPARATIVE SOCIAL ORGANIZATION (3+0) 3 credits
Basic institutions of human society; examination of the variability of structure in social system and culture. Prerequisite: ANTH 101.

325 PRINCIPLES OF DEMOGRAPHY (3+0) 3 credits
Basic demographic theory and methodology; consideration of population problems and policy from an anthropological perspective. Laboratory required.

330 TECHNOLOGY AND CULTURE (3+0) 3 credits
Material culture and manufacturing processes in societies of differing scales and levels of complexity; factors influencing technological development and change.

345 AMERICAN INDIAN ART (3+0) 3 credits
The nature, function and history of American Indian art; formal and esthetic approaches; traditional and contemporary perspectives.

390 HERITAGE OF EARLY CIVILIZATION (3+0) 3 credits
Critical comparisons of technologies, sciences, arts, architectures, ideologies and state systems of early world civilizations and their contributions to the modern world. Prerequisite: W T 202, 203.

400, 600 FIELD SCHOOL IN ARCHAEOLOGY 6 credits
Summer instruction and practice in survey, excavation, and analysis. Prerequisite: special advance application.

401, 601 THEORY IN ARCHAEOLOGY (3+0) 3 credits
Past and current theories in archaeological interpretation.

402, 602 LABORATORY METHODS IN ARCHAEOLOGY (1+3) 2 credits
Techniques for cleaning, repairing and storing artifacts from archaeological collections. Management of archaeological laboratories and collections, including data retrieval systems. Prerequisite: ANTH 102, 202.

403, 603 COLLECTIONS RESEARCH IN ANTHROPOLOGY (1+3) 2 credits
Practicum in anthropological theory and method. Ethnographic, archaeological or similar collections are described, analyzed and interpreted under close supervision. Prerequisite: ANTH 101.

404, 604 ENVIRONMENTAL ARCHEOLOGY (3+0) 3 credits
Topics selected from paleoecology, taphonomy, geoarcheology, and dating methods; lectures, readings, and field trips cover advanced principles, method and theory, and practical applications.

405, 605 ANTHROPOLOGICAL LINGUISTICS (3+0) 3 credits
Distribution of languages of the world. Descriptive techniques and theoretical concepts in linguistics; their application to specific problems in anthropology. Prerequisite: ANTH 101.

406, 606 MEDICAL ANTHROPOLOGY (3+0) 3 credits
Application of anthropological theory and methods to human health, illness, and healing. Practioners, clients, and comparative medical systems.

408, 608 ARCHAEOLOGICAL METHODS (2+3) 3 credits
Development and applications of archaeological research designs, sampling strategies and field recording methods.

409, 609 ARCHAEOLOGY OF THE OLD WORLD (3+0) 3 credits
Survey of current archaeological knowledge about a particular area of the Old World to be selected from Africa, Asia and Europe. May be repeated once. Prerequisite: ANTH 102 or 202.

410, 610 ETHNOGRAPHIC FIELD METHODS (2+4) 4 credits
Preparation of research designs, techniques of collecting data in the field, work with informants; organization and analysis of data, research aids. Prerequisite: ANTH 312.

411, 611 LINGUISTICS (3+0) 3 credits
(See ENGL 411 for description.)

414, 614 HISTORICAL LINGUISTICS (3+0) 3 credits
(See ENGL 414 for description.)

415, 615 PHONEMICS AND COMPARATIVE PHONETICS (3+0) 3 credits
(See ENGL 415 for description.)

416, 616 LINGUISTIC FIELD METHODS (2+3) 3 credits
Procedures in eliciting, recording and analyzing language. Students work with informants. Prerequisite: ANTH 405 or 411 or 415. (Same as ENGL 416.)

420, 620 AMERICAN INDIAN LANGUAGES (3+0) 3 credits
Classification of American Indian languages; history of research in this field, structural features of representative languages; survey of research problems. Prerequisite: ANTH 429.

423, 623 ARCHAEOLOGY OF NORTH AMERICA (3+0) 3 credits
Prehistory of North America with emphasis on peopling of the New World and influences from Mesoamerica.

424, 624 HISTORICAL ARCHAEOLOGY (3+0) 3 credits
European exploration and colonization of the New World, Africa, Asia, and the Pacific after 1492. Archaeology of shipwrecks, cities and industry. Prerequisite: ANTH 101.

425, 625 ARCHAEOLOGY OF ANCIENT NEW WORLD CIVILIZATIONS (3+0) 3 credits
Comparative study of indigenous civilizations in Mexico, Central America, and South America prior to the European conquest.

426, 626 INDUSTRIAL ARCHAEOLOGY (3+0) 3 credits
Comparative and historical study of industrial technology, communities, and landscape in America and Europe through physical remains.

427, 627 NATIVE AMERICAN LITERATURE (3+0) 3 credits
Contemporary and traditional Native American literature. Emphasis on relationships between oral and written traditions. Different regional focus each semester. (Same as ENGL 427, 627.)

429, 629 LANGUAGE AND CULTURE (3+0) 3 credits
Nature of language in light of anthropological research, diversity of the world's languages, relation of language to social organization and world view. Prerequisite: ANTH 101.

430, 630 PROBLEMS IN PHYSICAL ANTHROPOLOGY (3+0) 3 credits
Theories of human evolution, study of fossil hominids, racial classification and genetics, anthropometry. Prerequisite: ANTH 102.

431, 631 PRIMATE EVOLUTION (3+0) 3 credits
Detailed consideration of the record of primate and human evolution and paleobiology; review of contributions from paleontology, geology, behavioral biology, and ecology. Prerequisite: ANTH 102.

435, 635 PRIMATE BEHAVIOR (3+0) 3 credits
Behavior and social organization of the nonhuman primates; comparisons with human populations, implications for human evolution. Prerequisite: ANTH 101 or 102.

436, 636 PHYSICAL ANTHROPOLOGY (3+0) 3 credits
Variation, adaptation and evolution of human populations. Processes of evolution, taxonomy and classification, human genetics, adaptation and acclimatization, mating systems and population dynamics and paleoanthropology. Prerequisite: ANTH 102.

440, 640 HISTORY OF ANTHROPOLOGY (3+0) 3 credits
Anthropological ideas about humanity and culture in Western social thought. Comparison of contemporary theories of culture and society. Required of majors in senior year.

452, 652 POLITICAL ANTHROPOLOGY (3+0) 3 credits
Comparative study of the political organization of band, tribal and state-level societies. Analysis of the modernization of traditional regions and of peasant and primitive warfare, rebellion and revolutions. Prerequisite: ANTH 101.

455, 655 INTRODUCTION TO BASQUE LINGUISTICS (3+0) 3 credits
(See BASQ 455 for description.)

460, 660 SEMINAR IN CULTURAL ANTHROPOLOGY
(1 to 3+0) 1 to 3 credits
Consideration of selected topics in ethnology, ethno-linguistics or social anthropology. Topics vary from semester to semester. Maximum of 6 credits.

461, 661 INDIANS OF THE GREAT BASIN (3+0) 3 credits
Intensive study of indigenous cultures of the intermontane region of western North America; tribal distribution, problems in culture areas, social organization and change.

462, 662 INDIANS OF NORTH AMERICA (3+0) 3 credits
Culture areas of North America and related areas of Meso-America. Comparative culture institutions and material from representative groups; review of theoretical problems in North American ethnology. Prerequisite: ANTH 101.

463, 663 INDIANS OF SOUTH AMERICA (3+0) 3 credits
Culture areas of South America and related areas of Meso-America. Comparative cultural institutions and material from representative groups; review of theoretical problems in South American ethnology. Prerequisite: ANTH 101.

464, 664 CONTEMPORARY LATIN AMERICAN SOCIETY
(3+0) 3 credits
Survey of the structural features of Latin American society from the time of Luso-Hispanic contact to the present; emphasis upon cultural pluralism within national structures, race relations and processes of social change. Prerequisite: ANTH 101.

466, 666 OLD WORLD BASQUE CULTURE (3+0) 3 credits
(See BASQ 466 for description.)

467, 667 PEOPLES AND CULTURES OF SOUTHEAST ASIA
(3+0) 3 credits
Analysis of representative cultures of southeast Asia, their origins and development. Prerequisite: ANTH 101.

468, 668 PEOPLES AND CULTURES OF THE PACIFIC (3+0) 3 credits
Prehistory, recent cultures and problems of change among the peoples of Oceania. Prerequisite: ANTH 101.

469, 669 PEOPLES AND CULTURES OF EUROPE (3+0) 3 credits
Culture history and contemporary ethnography of European peasant societies. Prerequisite: ANTH 101.

470, 670 ANTHROPOLOGY AND ECOLOGY (3+0) 3 credits
Introduction to processes of biological and cultural adaptation to selected environments. Relevant topics include hominid ecology, resource exploitation, patterns of subsistence and the modes and rates of adaptation to changing environments.

475, 675 ANTHROPOLOGY AND EDUCATION (3+0) 3 credits
Patterns of learning and transmission of culture in literate and nonliterate societies; the education process and cultural factors such as values, goals, world-view, language, and leadership. Recommended for teachers and others in multiethnic situations. Prerequisite: ANTH 101 or equivalent.

476, 676 ZOOARCHAEOLOGY (3+3) 3 credits
Principles and techniques of analysis of bones from archaeological and Quaternary paleontological contexts.

480, 680 MUSEUM TRAINING FOR ANTHROPOLOGISTS
(3+0) 3 credits
Apprentice curatorship in anthropology; processing and preservation of anthropological collections; design of exhibits; curatorial responsibilities; museum research; relationship to public, state and federal agencies.

488, 688 PEOPLES AND CULTURES OF THE MIDDLE EAST
(3+0) 3 credits
Survey of the ethnic, religious and linguistic groups of the middle East with attention to historical development. Prerequisite: ANTH 101.

489, 689 PEOPLES AND CULTURES OF AFRICA (3+0) 3 credits
African culture history; analysis of social systems and cultural distributions; emergence of modern nations. Prerequisite: ANTH 101.

491, 691 ANTHROPOLOGY OF RELIGION (3+0) 3 credits
Nature and functions of religion in various societies, the development of theoretical concepts in the anthropological study of religious and magical phenomena. Prerequisite: ANTH 101.

493, 693 COMPARATIVE ART (3+0) 3 credits
Nature and functions of art and aesthetic values in various societies, the techniques and forms of art; esthetics and art in anthropological theory. Prerequisite: ANTH 101.

499, 699 SPECIAL PROBLEMS IN ANTHROPOLOGY
(1 to 6+0) 1 to 6 credits.
Research or reading to be carried out under supervision. Maximum of 6 credits.

701 INDIVIDUAL READING 1 to 6 credits
Supervised reading with regular conferences between student and instructor. Maximum of 6 credits.

702 GRADUATE RESEARCH 1 to 6 credits
Research projects in anthropology carried out under supervision. Maximum of 6 credits.

703 GRADUATE SEMINAR IN CULTURAL ANTHROPOLOGY
(3+0) 3 credits
Close examination of basic concepts and theories of social and cultural anthropology.

704 GRADUATE SEMINAR IN PHYSICAL ANTHROPOLOGY
(3+0) 3 credits
Selected reading and discussion of topics in human biological evolution.

705 GRADUATE SEMINAR IN ARCHAEOLOGY AND PREHISTORY
(3+0) 3 credits
Selected reading and discussion of topics in archaeological methods and theory.

706 SEMINAR IN ANTHROPOLOGICAL PROBLEMS (3+0) 3 credits
Detailed examination of selected issues in cultural anthropology, physical anthropology, anthropological linguistics or archaeology. Maximum of 6 credits.

707 METHODS IN CULTURAL ANTHROPOLOGY (3+0) 3 credits
Examination of methods used to collect and analyze data in social and cultural anthropology.

708 ADVANCED SEMINAR IN QUATERNARY STUDIES
(3+0) 3 credits
Intensive examination of methods, theories, and interpretations of selected topics, including peopling of the new world, environmental change, or taphonomy of middle-range research.

713 PROBLEMS IN LANGUAGE (3 or 4+0) 3 or 4 credits
(See ENGL 713 for description.)

720 PRINCIPLES OF PALYNOLOGY (2+3) 3 credits
Theory and methods of pollen analysis and applications in reconstructions of cultural, ecological and environmental histories.

721 DENDROCHRONOLOGY AND DENDROECOLOGY
(3+2) 3 credits
Research principles of tree ring analysis in archaeology, geochronology, paleoclimatology, ecology, forestry and range management.

725 DEMOGRAPHIC THEORY, METHODS, AND TECHNIQUES (3+0) 3 credits
Overview of demographic theory, data, methods and techniques, as well as computer applications.

737 TEACHING METHODS IN ANTHROPOLOGY (1+0) 1 credit
Course objectives and organization, lecture, presentation, examination procedures and related problems in teaching the subject matter of anthropology.

750 REGIONAL STUDIES IN ANTHROPOLOGY (3+0) 3 credits
Selected topics focusing upon a particular region of the world. Maximum of 6 credits.

760 INTERNSHIP (0+9) 3 credits
Supervised professional work experience in archaeology or one of the other subfields in anthropology. Work in local governmental or private organizations under direction of professionals. Maximum of 6 credits. Prerequisite: admission to candidacy for the M.A. in anthropology.

780 GRADUATE TUTORIAL (1 to 3+0) 1 to 3 credits
Tutorial reading and discussion of selected topics in anthropological research, methods or theory. Prerequisite: admission to doctoral program and approval of department graduate program chairman. Maximum of 12 credits.

793 INDEPENDENT STUDY 1 to 3 credits
Limited to students in the doctoral program. Maximum of 9 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
450, 650 PEASANT SOCIETY (3+0) 3 credits
465, 665 CULTURE AND PERSONALITY (3+0) 3 credits
492, 692 PROCESSES OF SOCIAL AND CULTURAL CHANGE (3+0) 3 credits

ART (ART)

Many studio courses require special expenses for materials and equipment in addition to registration and laboratory fees.

100 VISUAL FOUNDATIONS (1+4) 3 credits
Explores visual forms and contemporary concepts through a variety of media, presentations and discussions.

111 ART EXPERIENCES (1/2+1 or 2+2) 1 or 3 credits *S/U only*
Introduction, lecture-studio course using art of the past and present as the basis for exploration of both traditional and experimental materials and techniques. Maximum of 6 credits.

116 SURVEY OF THE ART OF WESTERN CIVILIZATION I (3+0) 3 credits
Art of the western world from prehistoric times through the Gothic period.

117 SURVEY OF THE ART OF WESTERN CIVILIZATION II (3+0) 3 credits
Art of the western world from the Renaissance to the present.

121 DRAWING (0+6) 3 credits
Introduction to concepts of drawing based on visual observations.

135 PAINTING (0+6) 3 credits
Introduction to concepts of painting including color, form and composition.

150 BEGINNING PHOTOGRAPHY (1+4) 3 credits
Analytical and critical approach to the creative possibilities of photography including instruction in the basics of photographic techniques and materials.

163 SCULPTURE (0+6) 3 credits
Introduction to the concepts of three-dimensional composition.

175 CERAMICS (1+4) 3 credits
Introduction to ceramics emphasizing characteristics of various clay bodies.

185 PRINTMAKING (0+6) 3 credits
Introduction to processes emphasizing relief, intaglio and screen processes.

214 SURVEY OF AMERICAN ART (3+0) 3 credits
General survey of art and architecture of America from the colonial period to the present.

221-222 DRAWING (0+6) 3 credits each
Intermediate courses designed to develop expression and discipline in drawing with emphasis on materials. Prerequisite: ART 100, 121.

235-236 PAINTING (0+6) 3 credits each
Intermediate course in painting, emphasizing various materials and methods. Prerequisite: ART 100, 135.

250-251 INTERMEDIATE PHOTOGRAPHY (1+4) 3 credits
Lecture/study with emphasis on improving basic technical and conceptual skills. Prerequisite: ART 100, 150.

252 VIDEOGRAPHY (1+4) 3 credits
Lecture/studio study using broadcast quality video as a means of personal expression. Prerequisite: ART 150, 250.

256 CINEMA I/THE SILENT ERA (3+0) 3 credits
History of film from beginning to introduction of sound, emphasizing development of forms and techniques. Film showings, lectures and discussions.

257 CINEMA II/THE SOUND ERA 1 to 3 credits
History, of the film from the introduction of sound with specific emphasis on particular time blocks and possible social/psychological relevance and/or influence. Maximum of 6 credits.

258-259 GRAPHIC DESIGN (1+4) 3 credits each
Design and production of camera-ready art. Emphasis on layout, mechanicals, illustrations, typography, trademark, packaging and product promotion. Prerequisite: ART 100 and a two-dimensional art course.

260 NEW MEDIA (1+4) 3 credits
Exploration of alternative concepts and media that may include video, performance art, audio and other experimental processes. Maximum of 6 credits.

263-264 SCULPTURE (0+6) 3 credits each
Intermediate emphasis on processes, concepts and materials. Prerequisite: ART 100, 163.

275-276 CERAMICS (1+4) 3 credits each
Intermediate emphasis on history, materials, methods and techniques with special attention to sculptural aspects. Lecture-laboratory method is employed with emphasis on research. Prerequisite: ART 100, 175.

285-286 PRINTMAKING (0+6) 3 credits each
Studio instruction concerned with professional printmaking processes including intaglio, relief and screen process. Prerequisite: ART 100, 185.

287 PAPERMAKING (1+4) 3 credits
Introduction to formation of paper sheets and casting pulp.

300 WALLWORKS (1+4) 3 credits
Making two and three-dimensional art designed for architectural installations. Murals and related art from cave painting to contemporary street art. Prerequisite: 6 credits of 200-level or above studio course work.

309 MUSEOLOGY (3+0) 3 credits
(See ANTH 309 for description.)

313 CONTEMPORARY ART (3+0) 3 credits
Surveys art thinking and art making from the 1970s to the present.

314 MEDIEVAL ART (3+0) 3 credits
Detailed study of arts of the Middle Ages from 300 to 1400, including early Medieval art, Carolingian. Ottonian, Romanesque and Gothic. Prerequisite: ART 116.

315 ITALIAN RENAISSANCE ART (3+0) 3 credits
History of Italian art in the 15th and 16th centuries.

316 SOUTHERN BAROQUE ART (3+0) 3 credits
History of Italian and Spanish art from 1600 to 1750.

317 NORTHERN RENAISSANCE ART (3+0) 3 credits
History, of Northern European art in the 15th and 16th centuries.

318 NORTHERN BAROQUE ART (3+0) 3 credits
History, of Northern European art from 1600 to 1750.

319 FIELD STUDY 1 to 3 credits
Student-faculty seminar including group travel to art centers within the U.S. and abroad for field study experience. Maximum of 6 credits.

321-322 ADVANCED DRAWING (0+6) 3 credits each
Continuation of ART 221-222 offered to develop maturity of expression in a broad range of media. Prerequisite: ART 222.

335-336 PAINTING (0+6) 3 credits each
Continuation of ART 235-236. Prerequisite: ART 121, 236.

337-338 WATERCOLOR (0+6) 3 credits each
Intermediate course involving comprehensive problems in painting with transparent and opaque watercolors. Prerequisite: ART 121, 135.

342 ART EDUCATION: ELEMENTARY SCHOOLS (2+2) 3 credits
Theoretical foundations of art education including a planned program of media investigation and experience in areas suitable for elementary and beginning middle school programming.

346 ART EDUCATION: SECONDARY SCHOOLS (0+6) 3 credits
Philosophical foundations and methods of curriculum planning and implementation for secondary art programming. A planned program of media investigation, classroom observation, and prestudent teaching experience. Prerequisite: senior standing and completion of art department major requirements.

349 ELEMENTARY ART EDUCATION / SPECIAL WORKSHOP
1 to 3 credits
Designed for the professional teacher in the field, emphasizing art and its relationship to the curriculum according to contemporary, and current philosophy.

350 ADVANCED PHOTOGRAPHY I (1+4) 3 credits
Refinement of technical and visual skills. Lecture/study of historical and contemporary photographic processes and their creative possibilities. Prerequisite: ART 251.

351 COLOR PHOTOGRAPHY (1+4) 3 credits
Surveys studio and field work, investigating color light theory. Portfolio development and a study of color as a means of creative expression. Prerequisite: ART 251.

352 ADVANCED VIDEOGRAPHY (1+4) 3 credits
Lecture/studio study designed for advanced work using broadcast video as a means of creative expression. Emphasis on producing a final project available for broadcast video as a means of creative expression. Prerequisite: ART 150, 250, 252.

355 HISTORY OF PHOTOGRAPHY (3+0) 3 credits
Survey of the historical, technical, and social foundations of photography including emphasis on individual photographers and their work.

357 CINEMA III/THE SOUND ERA 1 to 3 credits
Historical and critical development of specific genres, styles and directors; investigating film as a developing art form and means of mass communication. Maximum of 6 credits. Prerequisite: ART 256 or 257.

363-364 SCULPTURE (0+6) 3 credits each
Individual concepts of sculptural form with emphasis on personal development. Prerequisite: ART 264.

375-376 CERAMICS (0+6) 3 credits each
Continuation of ART 275-276 with emphasis on sculpture, pottery and independent investigation of the materials. Advanced technical and aesthetic aspects of clay, clay bodies and glazes. Prerequisite: ART 276.

381 HISTORY AND PRACTICE OF PRINTING (0+6) 3 credits
(See L SC 381 for description.)

384 HISTORY OF THE PRINT (2+0) 2 credits
Historical, technical and curatorial foundations of printmaking. Field trips to regional print collections.

385-386 PRINTMAKING (0+6) 3 credits each
Sustained exploration in one or more of the basic print processes with emphasis on technical problems related to inks, papers and presses. Prerequisite: ART 286.

403 POSTGRADUATE ORIENTATION (2+0) 2 credits
Orientation to career possibilities in the field of art. Required of all art majors.

404 GALLERY MANAGEMENT (1+2) 2 credits
Principles and practice of traditional and alternative fine art gallery operations. Directed experiences in gallery management, curatorial and exhibit preparation techniques. Field trips.

408, 608* INDIVIDUAL STUDIES 1 to 3 credits
Individual studies in areas of two- or three-dimensional work and art history. Maximum of 6 credits.

416, 616 18TH CENTURY DECORATIVE ARTS (3+0) 3 credits
Italy, Germany, Central Europe, England, Spain and the Hispanic American Colonies in the 18th century.

417, 617 19TH CENTURY ART (3+0) 3 credits
Detailed study of the Neo-Classic, Romantic, Realist and Impressionist movements in Western art including aspects of the architectural evolution. Prerequisite: ART 116, 117.

418, 618 20TH CENTURY ART (3+0) 3 credits
Detailed study of visual arts from 1880 to present time discussing major movements of the period. Attention also given to 20th century architecture. Prerequisite: ART 116, 117.

419, 619* PROBLEMS IN THE HISTORY OF ART 3 credits
Tutorial on independent basis arranged with departmental tutor/adviser. Maximum of 6 credits.

428, 628* PROBLEMS IN DRAWING 3 credits
Tutorial on independent basis arranged with departmental tutor/adviser. Student exhibits work as part of course requirement. Maximum of 6 credits. Prerequisite: 12 credits in drawing.

435-436 ADVANCED PAINTING (0+6) 3 credits each
Integration of form, space and color in advanced problems using still life, figure and landscape as points of departure. Prerequisite: ART 335-336.

438,638 PROBLEMS IN PAINTING 3 credits
Tutorial on independent basis arranged with departmental tutor/adviser. Student will exhibit work as part of the course requirement. Maximum of 6 credits. Prerequisite: 18 credits in painting.

450 ADVANCED PHOTOGRAPHY II (1+4) 3 credits
Development of individual photographic expression. Exploration of a variety of manipulative photographic materials through lecture and experimentation. Prerequisite: ART 350.

451 ADVANCED COLOR PHOTOGRAPHY (1+4) 3 credits
Studio instruction and concentration with an in-depth emphasis on developing a visual concept/idea within a portfolio. Prerequisite: ART 351.

453 SEMINAR IN PHOTOGRAPHY (1+0 per credit) 1 to 3 credits
Scheduled sections deal with in-depth investigation of a specific aspect of photography. Maximum of 6 credits. Prerequisite: ART 150, 250.

458, 658 PROBLEMS IN PHOTOGRAPHY 3 credits
Tutorial on an independent basis arranged with tutor/adviser. Students exhibit work as part of course requirement. Maximum of 6 credits. Prerequisite: 21 credits in photography.

463-464 ADVANCED SCULPTURE (0+6) 3 credits each
Advanced concepts of sculptural form and individual problem solving. Prerequisite: ART 363-364.

468, 668* PROBLEMS IN SCULPTURE 3 credits
Tutorial on an independent basis arranged with tutor/adviser. Students exhibit work as part of course requirement. Maximum of 6 credits. Prerequisite: 18 credits in sculpture.

475-476 ADVANCED CERAMICS (0+6) 3 credits each
Continuation of ART 375-376 with special emphasis on clay compounds, glazes and glaze formulation, kiln firing and temperature control. Prerequisite: ART 375-376.

478, 678* PROBLEMS IN CERAMICS 3 credits
Tutorial on an independent basis arranged with tutor/adviser. Students exhibit work as part of course requirement. Maximum of 6 credits. Prerequisite: 18 credits in ceramics.

485-486, 685-686 ADVANCED PRINTMAKING (0+6) 3 credits each
Emphasis on development of individual graphic expression through experimentation and refinement of one or any combination of the print processes. Prerequisite: ART 385-386.

487, 687 PAPERMAKING WORKSHOP 1 to 3 credits
Exploration of various approaches to paper forming. Mold building, pulp preparation, and two and three dimensional methods.

488, 688* PROBLEMS IN PRINTMAKING 3 credits
Tutorial on an independent basis arranged with tutor/adviser. Students exhibit work as part of the course requirement. Maximum of 6 credits. Prerequisite: 18 credits in printmaking.

489, 689 PRINTMAKING WORKSHOP (1+0 per credit) 1 to 3 credits
Presentation and review of special techniques, recent developments and innovations in printmaking. Specific content announced in advance. Maximum of 9 credits.

490 INTERNSHIP (0+6) 3 credits
Supervised professional work experience in one of the following areas: (a) graphic design; (b) museum management; (c) arts administration; (d) studio operations. Prerequisite: ART 403 for all internships with addition of ART 259 for (a), ART 309 for b and 9 credits in art studio courses related to specific medium for (d). Maximum of 6 credits.

498, 698 SEMINAR IN VISUAL ARTS 1 to 3 credits
Encourages the student of art to synthesize formal training and to integrate specialization into the framework of liberal arts. Maximum of 6 credits.

Inactive Courses
303-304 ART STRUCTURE AND PICTORIAL COMPOSITION (0+4) 2 credits each
313 SYMBOLIST ART (2+0) 2 credits
358-359 ADVANCED GRAPHIC DESIGN (0+6) 3 credits each
416-616 HISTORY OF AMERICAN ART (3+0) 3 credits

*Registration within any independent study course is permitted upon written request to the department which includes three copies of a statement of objectives, the specific goals and indicates the scope of the student's plans. A paper, a full report or an exhibit of work produced is required.

BELIEFS AND VALUES (B V)

Inactive Course
264 SCIENCE AND RELIGION (3+0) 3 credits

BIOCHEMISTRY (B CH)

150 BIOTECHNOLOGY: SCIENCE AND THE CITIZEN (3+0) 3 credits
Acquaints the non-science major with the language and techniques of biotechnology Visiting speakers discuss related political and social problems.

280 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem. Maximum of 6 credits.

355 PLANT PHYSIOLOGY (3+0) 3 credits
(See BIOL 355 for description.)

400, 600 INTRODUCTORY BIOCHEMISTRY (4+0) 4 credits
Major metabolic pathways and control mechanisms for carbohydrates, lipids and amino acids, includes energetics, photosynthesis, vitamins, cell organization, carbohydrate and lipid structure, protein and nucleic acid structure and biosynthesis, enzyme kinetics and regulation of gene function. Meets requirements for a single semester survey of metabolism. Prerequisite: CHEM 102 ; 142 or 344 for B CH 400; CHEM 344 for B CH 600.

403, 603 BIOLOGICAL CHEMISTRY LABORATORY I (0+6) 2 credits
Selected experiments illustrating methodology used in investigating the chemistry of living systems. Prerequisite or corequisite: B CH 400.

404, 604 BIOLOGICAL CHEMISTRY LABORATORY II (0+6) 2 credits
Selected experiments illustrating methodology used in investigating the chemistry of living systems. Prerequisite or corequisite: B CH 403 or 603 and 413 or 417.

407 SENIOR THESIS (0+9) 3 credits *S/U only*
Independent laboratory research. Oral reports of research experience. Prerequisite: B CH 404. For biochemistry majors only.

408 SENIOR THESIS II (0+9) 3 credits
Continuation of research project initiated in B CH 407. Oral and written reports of the research experience. Prerequisite: B CH 407.

412, 612 PLANT BIOCHEMISTRY (3+0) 3 credits
Plant metabolism with emphasis on reactions unique to plants such as photosynthesis, alkaloid biosynthesis, nitrogen fixation. Prerequisite: B CH 400 or equivalent

413, 613 BIOCHEMISTRY OF MACROMOLECULES (4+0) 4 credits
In-depth examination of the structure and function of lipids and membranes, proteins and enzymes, carbohydrates and nucleic acids. Includes molecular genetics and enzyme kinetics. Prerequisite: B CH 400; CHEM 344, 354 or 451 and a course in biology.

417, 617 METABOLIC REGULATION (4+0) 4 credits
In-depth examination of metabolism and regulation of carbohydrates, lipids, proteins, enzymes, nucleic acids, relationship of metabolism to the life processes of the whole organism. Prerequisite: B CH 400; CHEM 344 and a course in biology.

420-421 PROSEMINAR (1+0) 1 credit each
Emphasizes biochemical literature and provides practice in the oral presentation of scientific material. Prerequisite or corequisite: B CH 413, 417. B CH 420 is required for B CH 421.

460, 660 RADIATION AND LABORATORY SAFETY (1 or 2+0) 1 or 2 credits
Latest regulations and techniques in laboratory safety; including sections on biohazards, toxic chemical materials, CPR and radiological materials. Prerequisite: CHEM 102 or 330. Corequisite: BIOL 191.

480, 680 INDEPENDENT STUDY 1 to 3 credits
Intensive study of a special problem. Maximum of 6 credits.

601 HUMAN BIOCHEMISTRY I (4+6) 5 credits
Emphasis on application in medicine. Includes macromolecular chemistry, intermediate metabolism and biochemical regulation, mechanisms in health and disease. Prerequisite: limited to M.D. students only.

602 HUMAN BIOCHEMISTRY II (3+6) 4 credits
Emphasis on application in medicine. Includes macromolecular chemistry, intermediate metabolism and biochemical regulation, mechanisms in health and disease. Prerequisite: limited to M.D. students only.

701-702 EXPERIMENTAL BIOCHEMISTRY I and II (0+9) 3 credits each
Intensive laboratory in biochemical research methodology. Oral and written reports on each research project required. Prerequisite: biochemistry; major; B CH 400, 404.

705 MOLECULAR GENETICS (4+0) 4 credits
Molecular view of procaryotic and eucaryotic genes. Structure, expression and regulation of genes. Genetic engineering and somatic cell genetics. Techniques used in study of genetic information. Prerequisite: CHEM 142, 344; two semesters of general biology; B CH 400. Prerequisite or corequisite: B CH 413, 613.

711-712 BIOCHEMICAL TECHNIQUES (0+4 or 8) 1 or 2 credits each
Introduction in depth to details of biochemical techniques and equipment. Prerequisite: B CH 400.

717 ENVIRONMENTAL STRESS AND PLANT RESPONSE (3+0) 3 credits
Specific adverse physico-chemical factors which influence the growth and development of green plants. Focuses on abiotic plant disease with emphasis on

resses induced by mineral deficiencies, air pollutants, toxins, temperature and ght disorders and nonparasitic organism interaction. Diagnosis, etiology and ontrols to ameloriate these problems. Prerequisite: BIOL 355, 356.

18 PLANT METABOLISM (3+0) 3 credits
tudy of metabolic pathways unique to plants and to include currently ignificant topics. Prerequisite: B CH 400.

22 ADVANCED METABOLISM (3+0) 3 credits
Consideration at the molecular level of selected anabolic and catabolic rocesses. Prerequisite: B CH 417.

31 PHYSICAL BIOCHEMISTRY (3+0) 3 credits
hysical chemistry of biochemical systems. Prerequisite: B CH 413; CHEM 354.

40 ENZYMOLOGY (3+0) 3 credits
Enzyme kinetics, specificity, mechanisms, inhibition, structure, formation nd control. Prerequisite: B CH 413.

790 SEMINAR (1+0) 1 credit
Report by students and faculty on topics of interest in biochemistry Maximum of 3 credits.

793 INDEPENDENT STUDY 1 to 3 credits
Independent study in a specialized area. Maximum of 6 credits.

794 COLLOQUIUM (1+0) 1 credit
Presentation and analysis of original research in (a) carbohydrate metabolism, (b) lipid metabolism, (c) oxidative stress, (d) bioenergetics, (e) polynucleotide chemistry, (f) supramolecular systems, (g) enzyme kinetics, (h) biocatalytic mechanisms, (j) natural products chemistry, (k) protein chemistry, (m) molecular genetics, (n) plant biochemistry, (p) nutritional biochemistry, (q) bioactive compounds, (r) photosynthesis, and (s) insect biochemistry. Maximum of 8 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits
Thesis may be written in any area of biochemistry.

799 DISSERTATION 1 to 24 credits

BIOLOGY (BIOL)

100 BIOLOGY: PRINCIPLES AND APPLICATIONS (2+2) 3 credits
Basic biological concepts, interpretation and application of scientific methods, effects of biological advances on society. Core curriculum science course; can not be used for credit toward field of concentration in biology.

190 CELL AND MOLECULAR BIOLOGY (3+0) 3 credits
Structure and function of cells. Major molecules of life; composition and physiology of cellular organelles; cell metabolism, reproduction, motility, gene function. Prerequisite: CHEM 101.

191 ORGANISMAL BIOLOGY (3+3) 4 credits
Study of diversity within living systems, both plant and animal. Emphasis will be on taxonomic groups and their adaptations to common problems.

251 MICROBIOLOGY (3+3) 4 credits
Morphology, physiology, classification and culture techniques of prokaryotic and eukaryotic microorganisms. Prerequisite: BIOL 190.

223 HUMAN ANATOMY AND PHYSIOLOGY I (2+3) 3 credits
The body as a whole. Integumentary, skeletal, muscular, circulatory-lymphatic and respiratory systems of man. Primarily for nursing, physical education and home economics majors. Prerequisite: BIOL 190 or 191.

224 HUMAN ANATOMY AND PHYSIOLOGY II (2+3) 3 credits
Digestive, urogenital, nervous, sensory and endocrine system. Primarily for nursing, physical education and home economics majors. Prerequisite: BIOL 223.

303 HUMAN GENETICS (3+0) 3 credits
Fundamentals of genetics and their application to biology and human welfare: chromosome related abnormalities, their medical and social implications; chromosome structure, identification and function. Prerequisite: BIOL 313; some training in chemistry and mathematics.

309 MUSEOLOGY (3+0) 3 credits
(See ANTH 309 for description.)

310 MUSEUM TRAINING FOR BIOLOGIST (1+6) 3 credits
Collecting, preparing and curating plant and animal specimens for museum collections and exhibits in Nevada State Museum and Biology Department Museum.

313 PRINCIPLES OF GENETICS (3+0) 3 credits
Biological basis of heredity and variations among higher and lower organisms using modern and classical concepts of structure, function and organization of the genetic material. Prerequisite: BIOL 190, 191.

314 ECOLOGY AND POPULATION BIOLOGY (3+0) 3 credits
Basic ecological principles, with emphasis on population dynamics, population genetics, and interactions between species. Prerequisite: BIOL 190, 191; MATH 128.

320 EXPERIMENTAL FIELD ECOLOGY (2+3) 3 credits
Intensive summer course in Little Valley. Introduction to the area's natural history and to techniques for field study of plants and animals; individual and group projects. Prerequisite: BIOL 314, 394.

325 COMPUTER ACQUAINTANCE FOR BIOLOGICAL SCIENCES (2+2) 3 credits
Introduction to the computer and its applications. BASIC programming, word processing, data file management, use of statistical packages, and other applications. Prerequisite: elementary algebra.

330 PLANT DIVERSITY (3+3) 3 credits
Evolutionary survey or organisms commonly called plants. Includes Monera, plant-like Protoctista, vascular and non-vascular plants, and fungi. Prerequisite: BIOL 191.

333 SYSTEMATIC BOTANY OF FLOWERING PLANTS (3+0) 3 credits
Morphology, taxonomy and evolution of the principal plant orders, families, and genera. Emphasis on morphological and evolutionary adaptations. Local flora recognition included. Prerequisite: BIOL 191.

334 SYSTEMATIC BOTANY OF FLOWERING PLANTS LABORATORY (0+6) 2 credits
Optional laboratory to accompany BIOL 333.

347 PLANT ECOLOGY (3+3) 4 credits
Plant-environment interactions at the individual, population, community, and ecosystem levels. Prerequisite: BIOL 191, 314, 394. (Same as RWF 347.)

355 PLANT PHYSIOLOGY (3+0) 3 credits
Basic physiological processes in plants, nutrition, metabolism, growth and development. Prerequisite: BIOL 191 or CHEM 142. (Same as B CH 355)

356 PLANT PHYSIOLOGY LABORATORY (0+3) 1 credit
Optional laboratory to accompany BIOL 355.

368 PARASITOLOGY (3+0) 3 credits
Parasitic animals of medical, veterinary and wildlife importance.

370 ENTOMOLOGY (2+3) 3 credits
Origins, evolution, taxonomy, biogeography, morphology, physiology, behavior, and ecology of insects. Laboratory includes identification, experiments, and field study. Prerequisite: BIOL 191.

372 ICHTHYOLOGY (2+0) 2 credits
Systematics, ecology and biology of fishes. Prerequisite: BIOL 191.

373 ICHTHYOLOGY LABORATORY (0+3) 1 credit
Optional laboratory to accompany BIOL 372. Prerequisite: BIOL 191.

374 BIOLOGY OF THE VERTEBRATES (3+0) 3credits
Detailed analysis of the origin and evolution of vertebrates emphasizing paleontology, comparative anatomy, ecology and behavior.

376 ORNITHOLOGY (3+0) 3 credits
Origins, evolution, taxonomy, biogeography, morphology, physiology, behavior; and ecology of birds. Prerequisite: BIOL 191.

377 FIELD ORNITHOLOGY (0+4) 1 credit
Optional course to accompany BIOL 376. Bird identification, behavior and ecology in the field. Corequisite: BIOL 376.

378 MAMMALOGY (3+3) 4 credits
Origins, evolution, taxonomy, biogeography, morphology, physiology, behavior, and ecology of mammals. Laboratory includes identification, experiments, and field studies. Prerequisite: BIOL 191.

393 LABORATORY IN GENETICS AND CELL BIOLOGY (1+3) 2 credits
Research techniques and investigative approaches. Prerequisite or corequisite: BIOL 313.

394 LABORATORY IN ECOLOGY AND POPULATION BIOLOGY (1+3) 2 credits
Research techniques and investigative approaches in field and laboratory studies. Prerequisite or corquisite: BIOL 314.

401, 601 BIOLOGY JOURNAL SEMINAR (1+0) 1 credit
Survey of periodical literature of biology. Oral and written reports by the student will give experience in searching and interpreting literature. Maximum of 6 credits.

404, 604 POPULATION GENETICS (4+0) 4 credits
Genetics of populations and mechanisms of evolution. Includes equilibrium conditions and forces altering gene frequencies and polygenic and quantitative inheritance. Prerequisite: BIOL 313.

408, 608 MOLECULAR AND CLASSICAL CYTOGENETICS (2+3) 3 credits
Chromosome structure and aberrations, their origin and significance from classical and molecular points of view. Prerequisite: BIOL 313.

414, 614 ENDOCRINOLOGY (3+0) 3 credits
(See A SC 414, 614 for description.)

415, 615 EVOLUTION (3+1) 4 credits
Pattern and process in the evolution of life on earth. Prerequisite: BIOL 190, 191, 313, 314; CHEM 142.

420, 620 AQUATIC ECOLOGY (2+3) 3 credits
Biological, chemical, and physical characteristics of aquatic environments with particular emphasis on ecological processes. Prerequisite: BIOL 191; CHEM 101 or 201.

421, 621 CONSERVATION BIOLOGY (3+0) 3 credits
(See RWF 421, 621 for description.)

434, 634 BIOGEOGRAPHY (3+0) 3 credits
(See GEOG 434 for description.)

446, 646 DESERT AND MONTANE ECOSYSTEMS (3+0) 3 credits
Extended field trip to acquaint students with the biota of selected desert or montane areas. Maximum of 6 credits. Prerequisite: BIOL 314.

460, 660 COMPARATIVE PHYSIOLOGY (3+0) 3 credits
Comparative examination of the function of animal systems. Prerequisite: CHEM 142 or 344; BIOL 263.

468, 668 HISTOLOGY (3+3) 4 credits
Microscopic anatomy of tissues and organs with emphasis on mammals. Prerequisite: BIOL 111; a course in vertebrate or mammalian anatomy.

475, 675 NEUROBIOLOGY (3+3) 4 credits
Basic neurosciences: characteristics of excitable tissues, central nervous mechanisms in sensation, neural control of movement, functional neuroanatomy. Prerequisite: a course in animal physiology or anatomy.

480, 680 DEVELOPMENTAL BIOLOGY (3+0) 3 credits
Developmental patterns, mechanisms of cellular differentiation and cell interactions. Prerequisite: BIOL111, 112.

481, 681 PRINCIPLES OF ANIMAL BEHAVIOR (3+0) 3 credits
(See PSY 481, 681 for description.)

482, 682 ANIMAL BEHAVIOR LABORATORY (0+3) 1 credit
(See PSY 482, 682 for description.)

485, 685 POPULATION ECOLOGY (3+0) 3 credits
Characteristics, dynamics and interactions of plant and animal populations. Prerequisite: BIOL 314.

486, 686 COMMUNITY ECOLOGY (3+0) 3 credits
Characteristics, dynamics and interactions of communities of organisms. Prerequisite: BIOL 314.

491, 691 SPECIAL PROBLEMS 1 to 3 credits
Independent study or research in selected topics in biology. Maximum of 8 credits.

492-493 RESEARCH 3 credits each
Directed research course for biology majors under the guidance of a faculty member. Design and conduct original research leading to the presentation of a paper. Prerequisite: recommendation of a biology faculty member.

495, 695 SEMINAR 1 credit *S/U only*
Selected research topics of current interest. Maximum of 2 credits. Prerequisite: 9 credits of biology.

702 SUPERVISED TEACHING IN COLLEGE BIOLOGY (1+0) 1 credit
Methods and creative approaches for improving quality of undergraduate teaching of biological science.

705 CURRENT TOPICS IN CELL AND MOLECULAR BIOLOGY (2 or 3+0) 2 or 3 credits
Review and analysis of recent literature on selected topics concerning the molecular basis of cell structure and function. Maximum of 9 credits.

706 ADVANCED MICROBIOLOGY (3+0) 3 credits
Review and discussion of recent research involving cell structure, physiology, taxonomy, genetics, and/or ecology of microorganisms. Prerequisite: BIOL 251.

708 ADVANCED CYTOGENETICS (2+0) 2 credits
Structure, duplication and functioning of chromosomes and nucleolus. Emphasis is on spontaneous and induced chromosome aberrations as related to chromosome structure and reproduction.

710 CELLULAR PHYSIOLOGY (3+0) 3 credits
Includes consideration of structure and function of cellular membranes and associated transport systems, properties of intracellular physical and chemical systems and cellular environment. Prerequisite: BIOL 355 or 460.

711 ADVANCED CELLULAR BIOLOGY (3+0) 3 credits
Critical analysis of selected topics. Emphasis on molecular mechanisms of intracellular protein trafficking.

712 SYSTEMS MODELING IN ECOLOGY (3+0) 3 credits
Structure and functions of natural ecosystems are simulated by models in a systems analysis approach to ecological problems. Prerequisite: BIOL 347; or 485; a course in calculus.

713 TOPICS IN ECOLOGY (3+0) 3 credits
Critical analysis of selected ecological topics. Offered on a continuing basis; topics and instructors vary. Maximum of 6 credits. Prerequisite: BIOL 314.

717 SEMINAR IN ARID LANDS ECOLOGY (3+0) 3 credits
Presentation and analysis of original research by students, faculty and research guests on a variety of ecological topics related to arid lands. Maximum of 6 credits. Prerequisite: BIOL 314.

720 INSECT ECOLOGY (3+0) 3 credits
(See IPM 720 for description.)

730 MOLECULAR EVOLUTIONARY GENETICS (3+0) 3 credits
Patterns and processes of DNA sequence evolution. Relationship between molecular and phenotypic evolution. Use of molecular data in assessing genetic diversity and construction phlyogenetic trees. Prerequisite: BIOL 313 or equivalent.

760 VERTEBRATE REPRODUCTIVE BIOLOGY (3+0) 3 credits
Current research on morphology and physiology of reproductive systems in vertebrates, including reproductive cycles and their regulatory mechanisms. Prerequisite: BIOL 480 or equivalent courses.

762 ZOOLOGICAL SYMBIOSIS (3+0) 3 credits
Physiological and ecological study of symbiotic relationships among animals.

764 CURRENT RESEARCH IN DEVELOPMENTAL BIOLOGY (3+0) 3 credits
Review and discussion of recent literature concerned primarily with experimental analysis of problems in developmental biology.

766 UTERUS, PLACENTA AND FETUS (3+0) 3 credits
Fetal-maternal association which exists during the intrauterine development of viviparous vertebrates.

769 CURRENT TOPICS IN ANIMAL PHYSIOLOGY (3+0) 3 credits
Selected topics dealing with current research in animal physiology. Subjects considered will depend on student interest. Maximum of 6 credits.

776-777 ADVANCED ORNITHOLOGY (2+3) 3 credits each
Recent developments in avian biology as described by current ornithological literature. The laboratory consists of an original research problem by each individual. Prerequisite: an introductory course in ornithology or equivalent.

781 ADVANCED ANIMAL ECOLOGY (2+3) 3 credits
Selected topics in physiological, community and ecosystem ecology in conjunction with related topics in bioenergetics. Prerequisite: BIOL 314 or equivalent.

782 ADVANCED POPULATION ECOLOGY (2+3) 3 credits
Seminars and group or individual research projects in current problems of population ecology. Prerequisite: BIOL 485 or equivalent.

783 ADVANCED WILDLIFE ECOLOGY (2 or 3+0) 2 or 3 credits
Seminars and/or lectures in current problems of wildlife ecology. Emphasis on current literature. Prerequisite: BIOL 314 or equivalent. Credit hours determined by department.

792 SPECIAL PROBLEMS 1 to 3 credits
Independent study or research in selected graduate-level topics in biology. Maximum of 6 credits.

794 COLLOQUIA (1+0) 1 credit *S/U only*
Presentation of original research by visiting scientists, UNS faculty, and graduate students completing masters and doctoral degrees. Maximum of 2 credits for masters or 4 credits for Ph.D.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

BUSINESS ADMINISTRATION (BADM)

480, 680 SMALL BUSINESS INSTITUTE (SBI) (1+6) 3 credits
Students provide management assistance counseling to the small business community for qualified cases designated by the U.S. Small Business Administration.

Graduate standing is required as a prerequisite for all 700-level courses in the College of Business Administration.

700 STATISTICS FOR DECISION MAKING (3+0) 3 credits
Statistical inference and hypothesis testing; multivariate regression and analysis of variance; emphasis on applied methods, changing technology and computer applications.

701 PRODUCTION/OPERATIONS MANAGEMENT (3+0) 3 credits
Problems of manufacturing goods and services; production applications of linear programming, scheduling, quality control and materials management; CAD, CAM, multi-cultural and international issues. Prerequisite: BADM 700.

706 SEMINAR IN QUANTITATIVE RESEARCH METHODS (3+0) 3 credits
Advanced techniques for analysis of time series and cross sectional data. Topics include time series modeling, distributed lags, simultaneous equation models, forecasting, Logit/Probit models. Prerequisite: MBA core.

710 FINANCIAL REPORTING AND ANALYSIS (3+0) 3 credit
Examination of accounting and disclosure techniques and their impact on external financial reporting. Preparation, analysis and interpretation of financial reports.

711 SEMINAR IN CONTROL ISSUES (3+0) 3 credits
Decision making uses of accounting information in national and international management. Prerequisite: MBA core.

720 MANAGEMENT AND ORGANIZATIONAL SCIENCE (3+0) 3 credits
Individual and group behavior in organizations, and organizational design and communication strategies. Interaction of structural, technological and human resource components. International focus emphasized.

721 MANAGEMENT THEORY AND ORGANIZATIONAL DEVELOPMENT (3+0) 3 credits
Strategies for studying organizations, organizational structure and design, the impact of the environment and relaetd management problems. Examination of the functions of management from classical and behavioral viewpoints. Domestic and international cases. Prerequisite: completion of Tier I unless enrolled in an approved joint-degree program.

729 SEMINAR IN MANAGERIAL AND HUMAN RESOURCE ISSUES (3+0) 3 credits
Selected topics in management, both national and international. Prerequisite: MBA core.

730 ECONOMICS OF THE FIRM (3+0) 3 credits
Economic analysis of the business firm, particularly with respect to price, output and technological choice; the effect of diversity on domestic and international policy on business firm behavior.

740 SEMINAR IN MONETARY AND FINANCIAL ECONOMICS (3+0) 3 credits
Selected topics on monetary and financial issues, with international finance and policy coordination. Prerequisite: MBA core.

741 FINANCIAL MANAGEMENT (3+0) 3 credits
Capital budgeting, capital structure and dividend policy decisions, valuation, cost of capital, working capital management, financial analysis and planning for corporations in the global financial environment. Computer use required. Prerequisite: BADM 700, 710.

742 FINANCIAL MANAGEMENT THEORY AND PRACTICE (3+0) 3 credits
Theory of financial management with applications to problems of financial managers through analysis and discussion of case problems. Domestic and international cases. Prerequisite: MBA core.

749 SEMINAR IN FINANCE (3+0) 3 credits
Selected topics in finance Maximum of 6 credits. Prerequisite: BADM 741.

750 MANAGING COMPUTER-BASED INFORMATION RESOURCE SYSTEMS (3+0) 3 credits
Analysis of computer-aided systems engineering technologies, systems development life cycle, telecommunication networks, databases, security, and strategic information systems planning for managing computer information systems.

759 SEMINAR IN INFORMATION RESOURCE MANAGEMENT ISSUES (3+0) 3 credits
Selected topics at national and international levels, such as IS organization structures, application delivery strategies, strategic information systems, etc. Prerequisite: BADM 750 or equivalent.

760 MARKETING MANAGEMENT (3+0) 3 credits
Analyses and decision-making procedures in market measurement, product development, pricing, promtion and distribution. Environmental factors, including cultural diversity at domestic and global levels.

761 ADVANCED MARKETING MANAGEMENT (3+0) 3 credits
Problem-solving and decision-making from the viewpoint of the marketing executive; national and international perspective. Prerequisite: MBA core.

769 SEMINAR IN MARKETING ISSUES (3+0) 3 credits
Selected topics in marketing with national and international emphasis. Prerequisite: BADM 760.

772 CHANGING ENVIRONMENTS OF BUSINESS (3+0) 3 credits
Legal, ethical, cultural, economic, political and global environment. Approaches to continual monitoring and managing complex interactions between business and its changing environments. Prerequisite: MBA core.

780 BUSINESS AND PUBLIC POLICY (3+0) 3 credits
Relationship of public policy both nationally and internationally to business organizations. Development, current status and future outlook of specific public policy issues are considered. (Same as EC 780.)

781 STRATEGIC MANAGEMENT FOR EXECUTIVES (3+0) 3 credits
Strategy and policy in the business enterprise. Strategic management process and systematic analysis of complex organization-wide issues faced by general management. Case studies, both national and international. Prerequisite: MBA core and Breadth.

791 SPECIAL TOPICS 1 to 3 credits
Advanced study in selected topics. Maximum of 6 credits.

792 FIELD PROJECT (3+0) 3 credits
Study, in consultation with a professor, of a complex business issue and prepare and present a paper on the results of the study. Prerequisite: MBA core; 9 hours of the breadth requirements.

793 INDEPENDENT STUDY 1 to 3 credits
Advanced study and research in selected topics. Requires selecting topic design of experimental approach and derivating specific conclusions. Maximum of 6 credits.

797 THESIS 1 to 6 credits

Inactive Course
705 RESEARCH DESIGN AND ANALYSIS (3+0) 3 credits

CELL AND MOLECULAR BIOLOGY (CMB)

701, 702, 703 LABORATORY PRACTICUM I, II, III (0+9) 3 credits
Intensive laboratory experience in molecular biology research methods. Written reports on each research project required. Prerequisite: B CH 400.

710 MOLECULAR CELL BIOLOGY (4+0) 4 credits
Essential elements of cell structure and function. Comprehensive and experimental approach to the molecular view of the cell.

790 GRADUATE SEMINAR (1+0) 1 credit *S/U only*
Reports by students on topics of interest in cell and molecular biology. For cell and molecular biology majors only. Maximum of 2 credits.

793 INDEPENDENT STUDY 1 to 6 credits
Prerequisite: cell and molecular biology majors only.

794 COLLOQUIM GENE REGULATION (1+0) 1 credit
Presentation and analysis or original research in (a) gene regulation, (b) virology, (c) molecular biology methodology, (d) neoplasia, (e) hormone and drug receptors, (f) immunology. Maximum of 6 credits. For cell and molecular biology majors or advance approval.

797 THESIS 1 to 6 credits
For cell and molecular biology majors in the master's program only.

799 DISSERTATION 1 to 24 credits
For cell and molecular biology majors in the doctoral program only.

CELLULAR AND MOLECULAR PHARMACOLOGY AND PHYSIOLOGY (CMPP)

426, 626 BIOMEDICAL INSTRUMENTATION (2+2) 3 credits
Principles of modem electronic design including microcomputer applications, transducer t echnology, digital design, interface design, biomedical information systems. Prerequisite: E E 372, 382. (Same as E E 426, 626.)

730 CELLULAR AND MOLECULAR PHARMACOLOGY (3+0) 3 credits
Basic topics in cellular physiology and molecular mechanisms of drug action. Prerequisite: PHAR 601.

740 NEUROEFFECTOR PHARMACOLOGY (3+0) 3 credits
Basic topics in neurotransmission including neuromuscular pharmacology and autonomic pharmacology. Methods and current problems applied to the study of neuroeffector systems including nerves and muscles.

760 COMMUNICATIONS IN PHARMACOLOGY AND PHYSIOLOGY (3+0) 3 credits
Approaches to the teaching of science, writing papers and oral presentation of research findings. Practical experience in communication is a component of this course. Prerequisite: for cellular and molecular pharmacology and physiology majors only.

770 RESEARCH ROTATION (2+0) 2 credits
Research practicum. Prerequisite: major in cellular and molecular pharmacology and physiology or cell and molecular biology. Maximum of 6 credits.

790 SEMINAR (1+0) 1 credit
Reports of current research. Prerequisite: major in cellular and molecular pharmacology and physiology or cell and molecular biology. Maximum of 8 credits.

793 INDEPENDENT STUDY 1 to 6 credits

794 COLLOQUIM (1+0) 1 credit
Presentation and analysis of original research. Prerequisite: major in cellular and molecular pharmacology and physiology or cell and molecular biology. Maximum of 8 credits.

797 THESIS 1 to 6 credits
Prerequisite: major in cellular and molecular pharmacology and physiology or cell and molecular biology.

799 DISSERTATION 1 to 24 credits
Prerequisite: major in cellular and molecular pharmacology and physiology or cell and molecular biology.

Inactive Course
750 CELLULAR AND MOLECULAR MECHANISMS OF EXCITABILITY (3+0) 3 credits

CHEMICAL ENGINEERING (CH E)

101 INDUSTRY ORIENTATION LECTURES (1+0) 1 credit
Introduction to practices and careers in modern process engineering. Field trip required.

232 PRINCIPLES OF METALLURGICAL AND CHEMICAL ENGINEERING (3+0) 3 credit
(See METE 232 for description.)

361 THERMODYNAMICS (4+0) 4 credits
Thermodynamic principles and their application to problems involving physical and chemical changes. Prerequisite: MATH 281; CH E 232; CHEM 353.

372 FLUID MECHANICS LABORATORY (0+3) 1 credit
Experiments emphasizing fluid flow equipment and operations of chemical engineering. Practice in technical report writing. Corequisite: CH E 373.

373 TRANSPORT PHENOMENA I (3+0) 3 credits
Introduction to the continuum theories of the transport momentum, energy and matter. Equations of continuity, motion and energy for steady and unsteady state. Navier-Stokes equations, introduction to boundary layer theory. Prerequisite: CH E 232; MATH 285.

374 TRANSPORT PHENOMENA II (3+0) 3 credits
Applications of the equations of change to heat and mass transport. Analytical solutions of heat conduction and convection problems. Diffusion in multicomponent mixtures. Radiant heat transfer, interphase transfer. Prerequisite: CH E 373.

410 EXTRACTIVE METALLURGY I-PYROMETALLURGY (3+0) 3 credits
(See METE 410 for description.)

423 SURFACE CHEMISTRY IN MINERALS (3+0) 3 credits
(See METE 423 for description.)

434, 634 REAL TIME COMPUTING SYSTEMS (3+0) 3 credits
Principles of real time computing with applications to process control and laboratory data acquisition. Introduction to real time languages and operating systems. A number of computing projects are to be completed for credit using laboratory hardware and software. (Same as E E 434.)

440, 640 CHEMICAL REACTOR DESIGN (3+0) 3 credits
Reaction rates and the factors controlling them. Design of reactors for chemical processing is emphasized. Prerequisite: CH E 232; MATH 285; CHEM 353.

441 HEAT TRANSFER LABORATORY (0+3) 1 credit
Experiments emphasizing heat transfer equipment and operations of chemical engineering. Provides practice in technical report writing. Prerequisite: CH E 484.

442 UNIT OPERATIONS LABORATORY II (0+6) 2 credits
Experiments emphasizing fluid flow equipment and mass transfer. Unit operations commonly employed in chemical industries. Corequisite: CH E 485.

443 INDUSTRIAL INSTRUMENTATION (2+3) 3 credits
Analysis and specification of industrial instrumentation systems- element of process control strategies and analysis. Experiments on industrial investments and final control element. Computer use in data logging. Prerequisite: CH E 373.

450 TECHNIQUES OF PROCESS DESIGN AND ECONOMICS (3+0) 3 credits
Principles of chemical engineering process design. Economics and organization of process design, process synthesis, flow sheets, heat and mass balances, precedence ordering, computer and optimization techniques applied to design. Prerequisite: C S 113. Corequisite: CH E 493. (Same as METE 450.)

451, 651 CONTROL OF PROCESS SYSTEMS (3+0) 3 credits
Modeling and control of chemical and metallurgical processes, introduction to digital and analog process control, process control techniques and practices. Prerequisite: CH E 493.

462, 662 THERMODYNAMICS OF IRREVERSIBLE, PROCESSES (3+0) 3 credits
(See METE 462 for description.)

482 DESIGN PROJECT (1+6) 3 credits
Individual projects in the design of processes and plant components. Prerequisite: CH E 470. (Same as METE 482.)

484 UNIT OPERATIONS I (3+0) 3 credits
Design of continuous contacting equipment for heat and mass transfer. Flow through pipes, packed and fluidized beds. Heat exchangers, packed towers. Application to problems. Prerequisite: CH E 373.

485 UNIT OPERATIONS II (3+0) 3 credits
Equilibrium stage operations. Phase equilibria and phase diagrams. Distillation, liquid extraction, gas absorption and other stage operations for binary and multicomponent systems. Prerequisite: CH E 484.

494, 694 EQUILIBRIUM STAGE OPERATIONS (3+0) 3 credits
Basic concepts and calculation methods required for the design of continuous and batch stage-wise contacting devices. Prerequisite: CH E 493.

495 SPECIAL PROBLEMS 1 to 3 credits
Individual problems in chemical engineering. Maximum of 6 credits.

660 FLUID PHASE EQUILIBRIA (3+0) 3 credits
Applications and synthesis of thermodynamics and physical chemistry for the solution of phase equilibrium problems in chemical engineering. Prerequisite: CH E 361; MATH 285 or M E 300.

686 HETEROGENEOUS CATALYSIS (3+0) 3 credits
Fundamental theories and applications of heterogeneous catalysis; adsorption isotherms, catalyst characterization, mass transfer limitations on reaction rates, development of kinetics and reaction models. Prerequisite: CHEM 354.

CHEMISTRY (CHEM)

Laboratory courses require special expenses for materials and equipment in addition to regular registration fees.

100 MOLECULES AND LIFE IN THE MODERN WORLD (3+0) 3 credits
Introduction to chemistry, energy sources, environmental issues, life processes, hazardous wastes, radioactivity, superconductivity, lasers, photography, plastics, forensics, hormones, sex attractants, designer genes, drugs, cancer, chemotherapy.

101 GENERAL CHEMISTRY (3+3 or 4+3) 4 or 5 credits
Fundamental principles of chemistry including nomenclature, atomic structure, chemical bonding, molecular structure, states of matter and solutions. Students with no high school chemistry or with Math ACT scores 18 or less should register for 5 credits which includes recitation.

L101 GENERAL CHEMISTRY LABORATORY (0+3) 1 credit
Restricted to students enrolled in high school AP chemistry. Credit not allowed for both CHEM 101,and L101.

102 GENERAL CHEMISTRY (3+3 or 4+3) 4 or 5 credits
Fundamental principles of chemistry, properties and uses of the common metals, their compounds, elementary chemistry of carbon and introductory qualitative and quantitative analysis. Prerequisite: CHEM 101.

L102 GENERAL CHEMISTRY LABORATORY (0+3) 1 credit
Restricted to students enrolled in high school AP chemistry. Credit not allowed in both CHEM 102, L102.

142 INTRODUCTORY ORGANIC CHEMISTRY (3+0) 3 credits
Fundamental principles of carbon chemistry. Prerequisite: CHEM 101 or 201. Credit not allowed in both CHEM 142, 343.

143 INTRODUCTORY ORGANIC CHEMISTRY LABORATORY (0+3) 1 credit
Techniques employed in the preparation, separation and identification of organic compounds. Prerequisite or corequisite: CHEM 142.

201 GENERAL CHEMISTRY FOR SCIENTISTS AND ENGINEERS (3+3) 4 credits
Fundamental principles of chemistry including stoichiometry, atomic structure, periodic table, chemical bonding, molecular structure, kinetic theory of gases, gas laws, solutions, colligative properties, equilibrium, electrochemistry. Prerequisite: 28 or above on the Math ACT examination and/or a year of high school chemistry. Credit allowed in only one of the following: CHEM 101, 201 .

202 GENERAL CHEMISTRY FOR SCIENTISTS AND ENGINEERS (3+3) 4 credits
Continuation of CHEM 201 including thermodynamics, thermochemistry, redox systems, chemical kinetics, nuclear chemistry, metals and nonmetals, coordination compounds, qualitative and quantitative analysis, organic chemistry, biochemistry. Prerequisite: CHEM 201, or a grade of A or B in CHEM 101. Credit allowed in only one of the following: CHEM 102, 202.

291 SCIENTIFIC GLASSBLOWING (0+3) 1 credit
Training in glassblowing skills needed by majors in chemistry and physics.

330 ANALYTICAL CHEMISTRY (2+6) 4 credits
Principles and techniques of quantitative chemical analysis including an introduction to instrumental methods. Prerequisite: CHEM 102 or 202.

343 ORGANIC CHEMISTRY (3+0) 3 credits
Integrated treatment of aliphatic compounds embracing nomenclature, structure, general methods of preparation and a mechanistic interpretation of typical reactions. Prerequisite: CHEM 102 or 202.

344 ORGANIC CHEMISTRY (3+0) 3 credits
Continuation of CHEM 343 including a more advanced treatment of snythetic procedures. Prerequisite: CHEM 343.

345 ORGANIC CHEMISTRY LABORATORY (0+6) 2 credits
Introduction to laboratory techniques, analytical and preparative methods, identification of organic compounds. Prerequisite: CHEM 343. Corequisite: CHEM 344. Credit allowed in only one of the following: CHEM 345, 347.

347-348 LABORATORY TECHNIQUES OF ORGANIC CHEMISTRY (0+6) 2 credits each
Develops laboratory skills and an understanding of the techniques and principles involved in the preparation, separation and identification of organic compounds. Prerequisite or corequisite: CHEM 343-344. Laboratories must be taken in sequence. Credit allowed in only one of the following: CHEM 345, 347.

349 CHEMICAL APPLICATIONS OF SPECTROSCOPY (2+0) 2 credits
Interpretation of chemical spectra with an emphasis on applications to structure determination. Prerequisite: CHEM 344, 345 or 344, 348.

353 PHYSICAL CHEMISTRY I (3+0) 3 credits
First semester of a two-semester course on fundamental principles. Second course is CHEM 354 or 357. Prerequisite: two years of college chemistry; PHYS 151-152 or 201-202; MATH 182.

354 PHYSICAL CHEMISTRY II (3+0) 3 credits
Continuation of CHEM 353 for physical sciences and engineering majors. Prerequisite: CHEM 354 or 451.

355 PHYSICAL CHEMISTRY LABORATORY (0+9) 3 credits
Training in physico-chemical laboratory techniques provided by experimental verification of the principles of physical chemistry. Prerequisite or corequisite: CHEM 353 .

357 BIOPHYSICAL CHEMISTRY (3+0) 3 credits
Continuation of CHEM 353 for biological science majors. Prerequisite: CHEM 353.

387 CHEMICAL LITERATURE AND UNDERGRADUATE COLLOQUIUM (1+0) 1 credit
Introduction to chemical information retrieval, includes oral and/or written reports. Recommended to be taken concurrently with CHEM 391 or CHEM 497.

391 SPECIAL PROBLEMS 1 to 3 credits
Laboratory and/or literature course giving training in a field not covered in scheduled courses. Maximum of 3 credits.

415, 615 ADVANCED INORGANIC CHEMISTRY (3+0) 3 credits
Atomic structure; types of bonding; periodic relationships between structure, physical properties, and reactivity of the elements; preparation and application of the elements and their compounds. Prerequisite: CHEM 354.

434, 634 INSTRUMENTAL ANALYSIS (2+3) 3 credits
Critical examination of the process of quantitative chemical measurement entailing a systematic treatment of instrument design and instrumental methods. Prerequisite or corequisite: CHEM 330, 354.

442, 642 ADVANCED ORGANIC CHEMISTRY (3+0) 3 credits
Organic reactions not generally covered in introductory courses in organic chemistry. Emphasis on both snythetic utility and reaction mechanisms. Prerequisite: CHEM 344, 354.

443, 643 MODERN METHODS OF ORGANIC ANALYSIS (2+3 or 6) 3 or 4 credits
Identification of unknown organic compounds by spectroscopic techniques (IR, NMR, W, mass spectrometry) and wet laboratory methods; microtechniques; separations of mixtures (GLC, TLC, HPLC). Prerequisite: CHEM 344, 345 or 348.

450, 650 ADVANCED PHYSICAL CHEMISTRY (3+0) 3 credits
Selected topics (thermodynamics, kinetics, molecular structure, chemical statistics, etc.) at an intermediate level. Prerequisite: CHEM 354, 355; MATH 285 or equivalent.

451, 651 THE ELEMENTARY PHYSICAL CHEMISTRY OF MACROMOLECULES (3+0) 3 credits
Elementary physical chemistry and physical characterization methods applicable to synthetic and biological macromolecules in solution and in the bulk phase. Prerequisite or corequisite: CHEM 354 or 357.

456, 656 ADVANCED PHYSICAL CHEMISTRY LABORATORY (0+6) 2 credits
Interpretation of data from, and the basic theory behind, modern research instrumentation. Representative topics include optical spectroscopy, mass spectroscopy, and magnetic resonance. Prerequisite or corequisite: CHEM 354, 355.

461, 661 CHEMICAL SYNTHESIS (1+6) 3 credits
Advanced laboratory techniques used in inorganic and organic synthesis. Prerequisite: CHEM 345 or 348.

462, 662 POLYMER CHEMISTRY (3+0) 3 credits
Synthesis, characterization, morphology, bulk and solution properties of polymers; polymerization mechanisms. Prerequisite: CHEM 344, 354.

497 SENIOR THESIS I (0+9) 3 credits
Cross-disciplinary capstone course integrating chemistry subdisciplines, other sciences, mathematics, English and language(s) in an original, directed research problem summarized in written (thesis) and oral form. Prerequisite: three years of college chemistry; required major courses in other sciences and mathematics; foreign language(s); core courses.

498 SENIOR THESIS II (0+9) 3 credits
Cross-disciplinary capstone course integrating chemistry subdisciplines, other sciences, mathematics, English and language(s) in an original, directed research problem summarized in written (thesis) and oral form. Prerequisite: CHEM 497 with A or B grade.

700 SUPERVISED TEACHING IN COLLEGE CHEMISTRY (1+0) 1 credit *S/U only*
Methods and creative approaches for teaching chemical science to undergraduates.

711 THEORETICAL INORGANIC CHEMISTRY (3+0) 3 credits
Atomic structure, chemical bonding and molecular structure; applications of group theory to inorganic spectroscopy. Prerequisite: CHEM 615.

712 THE LESS FAMILIAR ELEMENTS (3+0) 3 credits
Survey of the chemistry of the less familiar elements including the lanthanides and actinides with emphasis on periodic correlations. Prerequisite: CHEM 615.

713 ORGANOMETALLIC CHEMISTRY (3+0) 3 credits
Synthesis, properties and reactivity of organometallic compounds; applications to organic synthesis and homogeneous catalysis with an emphasis on mechanisms. Prerequisite: CHEM 615 .

714 SPECIAL TOPICS IN INORGANIC CHEMISTRY (3+0) 3 credits
Selected topics of current interest. Prerequisite: CHEM 615. May be repeated only in different subject areas to a maximum of 6 credits.

740 ADVANCED ORGANIC SYNTHESIS (3+0) 3 credits
Survey of reactions of value in synthesis. Prerequisite: CHEM 642.

741 ADVANCED ORGANIC STRUCTURE ELUCIDATION (3+0) 3 credits
Methods used for structure elucidation. Prerequisite: CHEM 643 or equivalent.

742 THEORETICAL ORGANIC CHEMISTRY (3+0) 3 credits
Elementary quantum mechanics including molecular orbital theory, Huckel theory, aromaticity, and orbital symmetry rules; molecular mechanics calculations; reaction mechanisms. Prerequisite: CHEM 642.

743 SPECIAL TOPICS IN ORGANIC CHEMISTRY (3+0) 3 credits
Topics of current interest in organic chemistry. May be repeated only in different subject areas to a maximum of 6 credits. Prerequisite: CHEM 642.

744 STEREOCHEMISTRY AND CONFORMATIONAL ANALYSIS (3+0) 3 credits
Stereoisomerism, molecular symmetry, chirality, optical activity, torsional isomerism, conformations of cyclic and acyclic molecules, stereoselectivity and stereospecificity, chiral discrimination, stereochemical methods. Prerequisite: CHEM 642.

745 CHEMISTRY OF NATURAL PRODUCTS (3+0) 3 credits
Chemistry of naturally occurring compounds with emphasis on isolation, structure determination, synthesis, biogenesis and physiological importance. Prerequisite: CHEM 642.

750 THEORETICAL PHYSICAL CHEMISTRY (3+0) 3 credits
Thermodynamics, kinetic theory of gases, quantum theory, statistical mechanics and related subjects. Prerequisite: CHEM 650 or equivalent.

751 SPECIAL TOPICS IN PHYSICAL CHEMISTRY (3+0) 3 credits
Selected topics of current interest. Prerequisite: CHEM 650 or 750. May be repeated only in different subject areas to a maximum of 6 credits.

752 CHEMICAL KINETICS (3+0) 3 credits
Rate processes, factors influencing reaction rates and the correlation of kinetics and mechanisms of reaction. Prerequisite: CHEM 650 or equivalent.

753 PHYSICAL CHEMISTRY OF MACROMOLECULES (3+0) 3 credits
Advanced considerations in polymer chain statistics, structural and dynamical models. Solution and thermodynamic properties of nonelectrolyte and polyelectrolyte polymers. Advanced characterization methods. Prerequisite: CHEM 650.

755 STATISTICAL THERMODYNAMICS (3+0) 3 credits
Molecular approach to the study of fundamental thermodynamic energy relationships. Prerequisite: CHEM 750.

757 QUANTUM CHEMISTRY (3+0) 3 credits
Intensive study of the general aspects of quantum mechanics and its application to chemistry. Prerequisite: CHEM 750.

790 SEMINAR (1+0) 1 credit
Maximum of 4 credits.

793 INDEPENDENT STUDIES 1 to 6 credits
Maximum of 12 credits.

794 COLLOQUIA (1+0) 1 credit *S/U only*
Presentation of original research in (a) inorganic chemistry, (b) organic, (c) physical. Maximum of 8 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
110 CHEMISTRY OF MAN'S ENVIRONMENT (3+0) 3 credits
171 LIFE SCIENCE CHEMISTRY I (3+3) 4 credits
172 LIFE SCIENCE CHEMISTRY II (3+3) 4 credits
250 PHYSICAL PRINCIPLES OF CHEMISTRY (3+0) 3 credits
271 PHYSIOLOGICAL CHEMISTRY (3+0 or 3) 3 or 4 credits
435,635 RADIOCHEMISTRY (2+0 or 3) 2 or 3 credits
471-472, 671-672 GENERAL BIOCHEMISTRY (3+0) 3 credits each
473-474,673-674 GENERAL BIOCHEMISTRY LABORATORY (0+6) 2 credits each
771-772 ADVANCED BIOCHEMISTRY (3+0) 3 credits each
773 EXPERIMENTAL TECHNIQUES IN BIOCHEMISTRY (1+6) 3 credits
774 SPECIAL TOPICS IN BIOCHEMISTRY (3+0) 3 credits

CIVIL ENGINEERING (C E)

101 ENGINEERING GRAPHICS (0+6) 2 credits
Drafting and graphical presentation of engineering material. Use of graphs and maps. Aspects of descriptive geometry. Introduction to computer aided design. Prerequisite: trigonometry.

140 INTRODUCTION TO CIVIL ENGINEERING (1+0) 1 credit
History and overview of civil engineering including: environmental, geotechnical, materials, structural, transportation and water resources engineering.

141 ENGINEERING MEASUREMENTS (2+3) 3 credits
Introduction to the theory of engineering measurements and instruments used. Introduction to the theory of errors, statistics, field astronomy and topographic surveying. Prerequisite: trigonometry.

150, 250, 350, 450 SUMMER COOPERATIVE TRAINING (1+0) 1 credit
Preparation of written reports based on summer cooperative program assignments. Required of all students in civil engineering cooperative training programs.

204 TECHNOLOGY, ENVIRONMENT AND SOCIETY (3+0) 3 credits
Introduction to scientific principles required for enhancement of quality of environment with emphasis on the role of technology and its interrelationships with society. Prerequisite: ENGL 101.

241 STATICS (3+0) 3 credits
Static force systems. Topics include resolution and composition of forces, equilibrium of force systems, friction, centroids, moments of inertia, cables, beams, fluid statics, work. Prerequisite: PHYS 201. Corequisite: MATH 182. (Same as M E 241.)

243 COMPUTER PROGRAMMING FOR CIVIL ENGINEERS (2+3) 3 credits
Use of computers in civil engineering. Programming principles of FORTRAN and BASIC Applications. Prerequisite: C E 140; MATH 181.

246 CONSTRUCTION MATERIALS (3+0) 3 credits
Consideration of metals, wood, agregate, portland cement concrete and asphalt concrete. Prerequisite: C E 241.

360 SEMINAR (1+0) 1 credit
Preparation of written reports and/or delivery of oral presentations. Guest lectures. Maximum of 3 credits.

364 ENGINEERING HYDROLOGY (2+0) 2 credits
Fundamental principles of hydrology for engineers. Quantitative hydrology; application of statistics to prediction of runoff; ground water flow. Corequisite: M E 367; C E 389.

366 HIGHWAY/TRANSPORTATION ENGINEERING (3+0) 3 credits
Engineering problems encountered in the planning and design of highway transportation facilities. Prerequisite: C E 141, 375, 388.

368 FLUID MECHANICS LABORATORY (0+3) 1 credit
Exemplifies the principles studied in M E 367. Prerequisite or corequisite: M E 367.

369 CONCRETE AND ASPHALT LABORATORY (0+3) 1 credit
Physical properties of aggregate, portland cement, portland cement concrete, asphalt and asphalt concrete. Prerequisite: C E 246.

372 STRENGTH OF MATERIALS (3+0) 3 credits
Effects of axial loads, temperature changes, torsion and bending on structural elements; analysis of stress and strain, beam deflections, introduction to buckling and statically indeterminate structures. Prerequisite: C E 241.

374 METALS AND TIMBER LABORATORY (0+3) 1 credit
Physical properties or metals and timber relevant to civil engineering practice. Prerequisite: C E 246, 372.

375 CONSTRUCTION MATERIALS I (2+3) 3 credits
Consideration and physical properties of aggregates, portland, and other bydraulic cements, asphalt cement, and liquid asphalts, portland cement concrete and asphalt concrete. Corequisite: C E 389.

376 CONSTRUCTION MATERIALS II (1+3) 2 credits
Consideration and physical properties of wood, metals and plastics. Prerequisite: C E 372.

381 STRUCTURAL ANALYSIS I (3+0) 3 credits
Development of the principles and techniques of structural mechanics and their application to the analysis of statically determinate and indeterminate structures. Prerequisite: C E 372.

388 ENGINEERING ECONOMY (2+0) 2 credits
Consideration of various economic calculations such as present worth, benefit-cost and rate of return analyses in engineering decision making.

389 PROBABILITY AND STATISTICS FOR CIVIL ENGINEERS (2+0) 2 credits
Statistics, probability distributions and regression analysis with civil engineering applications. Prerequisite: MATH 281.

390 WATER AND WASTE TREATMENT (3+0) 3 credits
Water quality and contaminant characteristics; introduction to water treatment design and hazardous waste control. Prerequisite: CHEM 101. Corequisite: M E 367.

410, 610 HYDRAULICS OF OPEN CHANNELS (3+0) 3 credits
Advanced study of the flow of water through open channels. Prerequisite: M E 367.

411, 611 ENVIRONMENTAL LAW (3+0) 3 credits
Examination of current federal laws, rules and regulations concerning the environment. Emphasis on court decisions and interpretations of the law. (Same as RWF 411, 611; P SC 453, 653.)

415, 615 WATER RIGHTS (3+0) 3 credits
Riparian doctrine and appropriation doctrine along with some of the federal aspects of water rights. Study to include both statutory law and case law.

420, 620 ADVANCED PORTLAND CEMENT CONCRETE (2+3) 3 credits
Detailed consideration of concrete mix design; study of the effects of aggregate characteristics, mix design variables, admistures and exposure of all types upon concrete properties; quality control and special problems related to use. Prerequisite: C E 369.

429, 629 TIMBER STRUCTURES (3+0) 3 credits
Fundamentals of design of timber structures and application to simple structures. Prerequisite: C E 381.

431, 631 PAVEMENT DESIGN, REHABILITATION AND MAINTENANCE (3+0) 3 credits
Stresses in flexible and rigid pavements, materials characterization, overlay design, interlayers, seals, maintenance materials, selection of rehabilitation alternatives, life cycle costing, pavement management. Prerequisite: C E 366, 369.

460, 660 CONSTRUCTION ENGINEERING (3+0) 3 credits
Construction practices and methods; job planning and scheduling; selection of equipment. Problems of management and related topics. Prerequisite: C E 366.

461 FORM AND FALSEWORK DESIGN (2+0) 2 credits
Planning, materials, loads, pressures, design, erection, and use for concrete formwork. Prerequisite: C E 429.

462 CONSTRUCTION COST ESTIMATING (3+0) 3 credits
Quantity take-off, labor cost, material cost, equipment costs, subcontracts, overhead costs, profit, and bidding. Corequisite: C E 460.

463 PROJECT SCHEDULING (3+0) 3 credits
Project planning, order of project completion, scheduling basics, types of schedules, schedule outputs and reports, project progress, special topics.

464 CONSTRUCTION LAW (2+0) 2 credits
Bids and bid mistakes, contracts and contract documents, performance, liens, bonds, and arbitration vs. litigation, including case studies.

465 CONSTRUCTION COST ACCOUNTING (2+0) 2 credits
Direct material costs, direct labor costs, other direct costs, indirect costs, progress billings, profit on jobs, profitability and economic survival. Prerequisite: ACC 201.

466 CONSTRUCTION MANAGEMENT (2+0) 2 credits
On-site productivity, productivity climate, system productivity, and safety issues. Prerequisite: C E 388.

467 CONSTRUCTION BONDING AND INSURANCE (3+0) 3 credits
Construction public liability, property damage and insurance issues. Prerequisite: C E 460.

471 MATHEMATICAL METHODS IN CIVIL ENGINEERING (1+0 per credit) 1 to 3 credits
Application of the principles of higher mathematics to typical problems in the analysis and design of civil engineering projects. Prerequisite: C E 243, 372; MATH 285.

479, 679 EARTHQUAKE ENGINEERING (3+0) 3 credits
(See G E 479 for description.)

483, 683 STRUCTURAL ANALYSIS II (3+0) 3 credits
Classical methods of structural analysis for static and dynamic loads and structural stability including matrix formulation for application of electronic computers. Prerequisite: C E 381.

484, 684 STRUCTURAL STEEL DESIGN (3+0) 3 credits
Load-resistance factor design of steel structures including beams, columns, beam-columns, tension members and plate girders; welded and bolted connections. Prerequisite: C E 381.

485, 685 REINFORCED CONCRETE DESIGN I (3+0) 3 credits
Analysis and design of reinforced concrete members by the str method and an introduction to the working stress method. Prerequisit 375, 381.

486, 686 REINFORCED CONCRETE DESIGN II (3+0) 3 credits
Continuation of C E 485 with emphasis upon the total design of reinf concrete structures. Prerequisite: C E 485.

487, 687 COMPUTER-AIDED DESIGN OF STRUCTURES (3+0) 3 c
Application of microcomputer and main frame software in cor design of reinforced concrete, steel and timber structures. Prerequisit 483, 484, 485 .

489, 689 WATER RESOURCES ENGINEERING I (3+0) 3 credits
Principles for the design of municipal water systems and waste collection systems; introduction to water reuse and water conserv Prerequisite: C E 364, 390.

490, 690 WATER RESOURCES ENGINEERING II (3+0) 3 credits
Conventional engineering economic analysis of multipurpose wat sources projects and a study of components of systems which provic principal beneficial uses of water. Prerequisite: C E 489.

491, 691 CONTRACTS, SPECIFICATIONS (2+0) 2 credits
Elementary presentation of engineering aspects of contracts, specification supporting documents for materials and services associated with constructi private and public works. Prerequisite: senior standing in engineering.

492, 692 FUNDAMENTALS OF GEOTECHNICAL ENGINEERIN (3+0 or 3) 3 or 4 credits
Use of soil mechanics in engineering practice: weight-volume relation and soil compaction; permeability and seepage; consolidation and s ment; shear strength and its application to lateral earth pressure, bea capacity and slope stability. Prerequisite: C E 372.

493, 693 GEOTECHNICAL ENGINEERING: FOUNDATIONS (3+0) 3 credits
Geotechnical analysis of footings, mats, piers, piles and related fill excavation operations. Consideration of stress distribution, settlen time rate of settlement and load capacity. Prerequisite: C E 492.

494, 694 GEOTECHNICAL ENGINEERING: RETAINING STRUCTURES (3+0) 3 credits
Application of geotechnical theory to analysis of rigid and flexible earth retai structures: retaining wall, anchored bulkhead, braced cut, tie-back cut, sl trench wall, reinforced earth wall and cofferdam. Prerequisite: C E 492.

495 SPECIAL PROJECTS 1 to 3 credits
Study and/or experimentation in areas of special interest to the stuc Maximum of 6 credits.

497, 697 INTRODUCTION TO ENVIRONMENTAL QUALITY AN ANALYSIS (2+3) 3 credits
Analytical and physical chemistry and microbiology applied to w quality and hazardous waste control. Laboratory includes gravim electrometric, spectrophotometric, chromatographic and microbiolo analyses. Prerequisite: BIOL 111; CHEM 102.

498, 698 WATER QUALITY MANAGEMENT (3+0) 3 credits
Water quality criteria for beneficial uses and methodology for establis water quality standards. Changes in water quality attributes thro beneficial uses and through natural and engineered systems. Syst analysis applications to models to provide optimal water quality man ment for selected water resources systems. Prerequisite: C E 390.

499, 699 HAZARDOUS WASTE MANAGEMENT AND CONTRO (3+0) 3 credits
Hazardous waste sources, regulations, chemodynamics and toxicol site assessment and pathway receptor analyses; treatment processes spills, ultimate disposal and uncontrolled waste sites. Prerequisite: CH 102; C E 390.

704 APPLIED FINITE ELEMENT ANALYSIS (3+0) 3 credits
Basic concepts, formulation and application of finite element techniques numerical solution of problems in structural and continuum mechar geotechnical and water resources engineering. Prerequisite: C E 243; M E or MATH 285.

720 ADVANCED STRUCTURAL ANALYSIS AND DESIGN I (3+1) 3 credits
Advanced methods and problems in structural analysis and design. Prerequisite: C E 483, 484, 485.

721 ADVANCED STRUCTURAL ANALYSIS AND DESIGN II (3+0) 3 credits
Continuation of C E 720. Prerequisite: C E 720.

722 LIMIT DESIGN IN STRUCTURAL STEEL AND CONCRETE (3+0) 3 credits
Plastic design and behavior, limit analysis, mechanisms, virtual work. Prerequisite: C E 483, 484, 485.

723 ADVANCED REINFORCED CONCRETE (3+0) 3 credits
Special problems in reinforced concrete. Prerequisite: C E 483, 486.

724 APPLIED ELASTICITY I (3+0) 3 credits
Development of three-dimensional equations of elasticity, analysis of stress and strain, compatibility, stress-strain relations, plane stress, plane strain, and torsion. A study of the stresses and displacements in rectangular, circular, and ring-shaped plates and cylinders. Prerequisite: C E 372 and MATH 285 or M E 299.

725 APPLIED ELASTICITY II (3+0) 3 credits
Continuation of C E 724 with emphasis on the variation principles of mechanics including the principles of stationary potential and complimentary energy. Hamilton's principle and methods of Ritz and Galerkin. Prerequisite: C E 724.

726 THEORY OF PLATES AND SHELLS (3+0) 3 credits
Analysis of plates and shells by classical and numerical methods including the finite difference and finite element methods. Prerequisite: C E 372. Corequisite: C E 704.

727 MATRIX METHODS IN STRUCTURAL ANALYSIS (3+0) 3 credits
Formulation of displacement and force methods for structural systems using matrix techniques. Introduction to efficient computer methods in analysis of structures. Prerequisite: C E 483.

730 DYNAMICS OF STRUCTURES (3+0) 3 credits
Analysis of single and multidegree of freedom systems for time dependent loadings, with particular attention to earthquake excitation and response spectrum techniques. Prerequisite: C E 381.

731 ADVANCED DYNAMICS OF STRUCTURES (3+0) 3 credits
Advanced methods of analysis and design of structural systems subjected to dynamic loads. Elastic and inelastic analysis of single and multi-degree systems. Introduction to random vibration and Fourier transform methods. Design application to building, badges and reservoirs. Prerequisite: C E 730.

732 BITUMINOUS MATERIALS AND MIXTURES (2+3) 3 credits
Physical and chemical properties of asphalts and agregates, design and construction of asphalt mixtures, skid resistance, and performance. Prerequisite: C E 246, 366, 369.

733 ADVANCED PAVEMENT DESIGN AND MANAGEMENT (3+0) 3 credits
1985 AASHTO design procedure; mechanistic design; pavement evaluation; in-situ testing and interpretation, visual surveys, failure criteria; pavement management systems; rehabilitation types and selection. Prerequisite: C E 431, 631.

734 SOIL STABILIZATION AND SITE IMPROVEMENT (3+0) 3 credits
Lime, portland cement and asphalt stabilization; use of pozzolans, sand drains, hydraulic fills, deep compaction, electro-osmosis, thermal stabilization, grouting. Prerequisite: C E 246, 366, 369.

741 GEOTECHNICAL ENGINEERING: SEEPAGE, SLOPES, EMBANKMENTS (3+0) 3 credits
Seepage effects and control; flow net. Stability of natural and man-made slopes under various loading conditions. Design and construction of earth dams and embankments. Prerequisite: C E 492.

742 ADVANCED SOIL MECHANICS (3+0) 3 credits
Advanced and theoretical treatment of soil stress-strain relationships, consolidation and shear-strength concepts. Prerequisite: C E 493 or 494.

743 ADVANCED SOIL MECHANICS LABORATORY (0+3) 1 credit
Advanced soil testing techniques used in geotechnical engineering. Prerequisite: C E 742.

745 GEOTECHNICAL EARTHQUAKE ENGINEERING (3+0) 3 credits
Dynamic soil properties, ground response analysis, soil-structure interaction, soil liquefaction, dynamic analysis of earth dams, settlement from earthquakes and dynamic lateral earth pressure. Prerequisite: C E 493 or 494, 730.

746 ADVANCED FOUNDATION ENGINEERING (3 to 4+0) 3 to 4 credits
Advanced topics dealing with shallow and deep foundations, including mat foundations, laterally loaded piles and culverts. Prerequisite: C E 493. Additional material dealing with machine foundation design requires prerequisite C E 745 for additional credit.

750 GRADUATE SEMINAR 1 to 3 credits
Study and discussion of important new developments in particular fields of civil engineering. Prerequisite: graduate standing in civil engineering.

751 BIOLOGICAL UNIT OPERATIONS (4+0) 4 credits
Process kinetics, theory, design and operation for fixed film and suspended growth erobic, anoxic and anaerobic biological processes. Prerequisite: C E 752.

752 PHYSICOCHEMICAL UNIT PROCESSES (4+0) 4 credits
Process kinetics, theory, design and operation for coagulation, flocculation sedimentation, filtration, disinfection, oxidation, adsorption and membrane processes. Prerequisite: C E 390, 497.

754 UNIT OPERATIONS AND PROCESSES LABORATORY (1+6) 3 credits
Laboratory investigation of reactor hydraulics, coagulation, sedimentation filtration, disinfection, adsorption and activated sludge.

755 INDUSTRIAL WASTE TREATMENT (2+0) 2 credits
Theory, design and operation of pilot and full-scale systems for the control of aqueous industrial waste streams. Prerequisite: CHEM 142.

756 ENVIRONMENTAL CHEMISTRY (3+0) 3 credits
Kinetics and thermodynamics applied to water, wastewater, and other environmental media including acid-base relationships, complexation, precipitation, and oxidation-reduction. Prerequisite: C E 497 or 498.

761 PLANNING AND SCHEDULING OF CONSTRUCTION PROJECTS (2+0) 2 credits
Planning, scheduling, and progress control of construction projects with emphasis on Critical Path Method, including network diagramming and calculations and resource leveling. Basics of the PERT system are investigated.

771 SPECIAL ENGINEERING PROBLEMS 1 to 3 credits
Specialized study in any of the subjects pertaining to civil engineering. Subject matter may be arranged after conference with staff members and administrative officers concerned. Maximum of 6 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 1 to 3 credits *S/U only*
Report of professional quality, based on engineering experience and independent study or investigation. May be required for completion of plan B, master of science program.

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
244 CIVIL ENGINEERING II (2+3) 3 credits
342 ADVANCED SURVEYING (3+0) 3 credits
347 ENGINEERING REPORTS (1+0) 1 credit
373 STRENGTH OF MATERIALS LABORATORY (0+3) 3 credits
401, 601 CITY AND REGIONAL PLANNING I (2+3) 3 credits
402, 602 CITY AND REGIONAL PLANNING II (3+0) 3 credits
416, 616 EMINENT-DOMAIN LAW AND CONDEMNATION PROCEDURE (2+0) 2 credits
419, 619 SNOW AND ICE SCIENCE (2+0) 2 credits
451, 651 TRANSPORTATION ENGINEERING (3+0) 3 credits
452, 652 INTRODUCTION TO TRAFFIC ENGINEERING (2+3) 3
473, 673 DECISION MAKING TECHNIQUES (3+0) 3 credits

703 AIRPORT PLANNING AND DESIGN (3+3) 3 credits
711 WATER RESOURCES SYSTEMS ANALYSIS (3+0) 3 credits
712 WATER RESOURCES PROJECTS (3+0) 3 credits
714 ADVANCED WATER RESOURCES TOPICS 1 to 4 credits
717 STATISTICAL METHODS IN HYDROLOGY (3+0) 3 credits
718 ADVANCED HYDROLOGY I (3+0) 3 credits
719 ADVANCED HYDROLOGY II 1 to 4 credits
728 EXPERIMENTAL STRESS ANALYSIS (2+3) 3 credits
753 AIR POLLUTION CONTROL 2 credits

CLINICAL LABORATORY SCIENCE (CLS)

111 MEDICAL TERMINOLOGY (1+0) 1 credit
Self-learning approach to terminology used in medical professions. Emphasis on understanding of word roots and building vocabulary.

161 MEDICAL LABORATORY PRINCIPLES I (2+0) 2 credits
Introduction to basic medical laboratory principles including urinalysis and other body fluids. Content areas deal with quality control, venipuncture, use of analytical equipment, laboratory safety, supplies and laboratory records. Prerequisite: CHEM 101 or equivalent, MATH 128.

162 MEDICAL LABORATORY PRINCIPLES II (0+3) 1 credit
Laboratory and clinical applications in microscopy, analytical methods, venipuncture, quality control, urinalysis analysis of other body fluids. Corequisite: LTE 110B at TMCC.

215 INSTRUMENTATION (1+0) 1 credit
Basic principles of laboratory instrumentation including basic laboratory computer applications and electronics. Prerequisite: CLS 161, 162.

216 APPLIED INSTRUMENTATION (0+3) 1 credit
Principles of clinical laboratory instrumentation. Corequisite: CLS 215. Prerequisite: CLS 161, 162.

221 PRINCIPLES OF DISEASE I (1+0) 1 credit
Mechanisms of disease production are correlated with anatomic structures physiologic processes and cellular requirements of body systems. Corequisite: BIOL 223.

222 PRINCIPLES OF DISEASE II (1+0) 1 credit
Continuation of body systems not covered in CLS 221. Corequisite: BIOL 224.

241 CLINICAL CHEMISTRY (3+0) 3 credits
Basic principles of methodology in clinical chemistry by analyzing chemical substances in biological fluids. Prerequisite: CHEM 102, 142, 143; CLS 161, 162, 215, 216.

242 APPLIED CLINICAL CHEMISTRY (0+9) 3 credits
Quantitative analysis of chemical components in biologic substances. Corequisite: CLS 241 .

251 IMMUNOLOGY/IMMUNOHEMATOLOGY (2+0) 2 credits
Overview of the immune response with emphasis on serologic principles. Discussion of identification of blood group antigens and antibodies and their clinical significance in transfusion therapy. Prerequisite: CHEM 142, 143.

252 APPLIED IMMUNOLOGY/IMMUNOHEMATOLOGY (0+6) 2 credits
Serological and immunohematological laboratory procedures; grouping, typing, compatibility testing, pregnancy testing, titers, cold agglutinins, quality control. Corequisite: CLS 251.

271 CLINICAL MICROBIOLOGY (2+0) 2 credits
Characteristics, medical significance and laboratory identification of clinically important bacteria. Prerequisite: CLS 161, 162.

272 APPLIED CLINICAL MICROBIOLOGY (0+9) 3 credits
Collecting and processing specimens; cultivation and identification of clinically important bacteria; staining methods; media preparation; safety measures; susceptibility testing. Corequisite: CLS 271.

281 PARASITOLOGY/MYCOLOGY/VIROLOGY (1+0) 1 credit
Characteristics, medical significance and laboratory identification of human parasites, fungi and viruses. Prerequisite: CLS 161, 162.

282 APPLIED PARASITOLOGY/MYCOLOGY (0+3) 1 credit
Specimen collection and processing; identification of parasites; cultivation and identification of medically significant fungi. Corequisite: CLS 281.

291 HEMATOLOGY (2+0) 2 credits
Development, identification and function of cellular and humoral elements in whole blood. Principles of laboratory assays used in the diagnosis of hematologic disorders. Prerequisite: CLS 161, 162; BIOL 223 or equivalent.

292 APPLIED HEMATOLOGY (0+6) 2 credits
Slide preparation and staining; manual and automated assays of whole blood components; cell identification; coagulation tests and spedal hematology procedures. Corequisite: CLS 291.

296 CLINICAL PRACTICUM (1+6) 3 credits *S/U only*
A ten-week integration experience in hematology, microbiology, blood bank, scrology, urinalysis and chemistry to include theory review and clinical rotations. Case history project required. Prerequisite: CLS 161,162, 215, 216, 241, 242, 251, 252, 271, 272, 281, 282, 291, 292.

301 BIOMETRY (1+0) 1 credit
Discussion on quality control and biostatistical principles useful to health professionals. A nontheoretical approach to descriptive and inferential techniques for solving and illustrating statistical problems. Prerequisite: MATH 128.

317 PRINCIPLES OF LABORATORY SUPERVISION/MANAGEMENT (2+0) 2 credits
Overview of health care delivery; principles and policies related to budget preparation, capital expenditures, reimbursement and personnel management.

352 ADVANCED IMUNOHEMATOLOGY LABORATORY (0+3) 1 credit
Advanced, specialized techniques used to identify abnormal antibodies as well ascoverage of component separation, preparation, and therapy. Prerequisite: CLS 296.

371 ADVANCED CLINICAL MICROBIOLOGY (2+0) 2 credits
Selection, interpretation and evaluation of clinical microbiology laboratory tests and their role in the diagnosis of infectious diseases. Prerequisite: CLS 296.

372 ADVANCED CLINICAL MICROBIOLOGY LABORATORY (0+6) 2 credits
Selection and performance of a variety of laboratory techniques to identify all types of microorganisms found in clincial specimens. Corequisite: CLS 371.

390 INDEPENDENT STUDY 1 to 3 credits
Individualized in depth study of a specific area of medical technology, e.g. clinical chemistry, hematology, immunology, immunohematology, microbiology, urinalysis, laboratory administration, and education. Maximum of 6 credits.

391 ADVANCED HEMATOLOGY (2+0) 2 credits
Hematologic disorders to include anemias, white cell dyscrasias, abnormal hemostasis, clinical presentation and laboratory findings associated with these conditions. Prerequisite: CLS 296.

392 ADVANCED HEMATOLOGY LABORATORY (0+3) 1 credit
Specialized and advanced hematologic procedures applied to the diagnosis blood dyscrasias and hemostatic disorders. Corequisite: CLS 391.

415, 615 ADVANCED INSTRUMENTATION (1+0) 1 credit
Fundamental principles of specialized clinical laboratory instrumentation. Prerequisite: CLS 296; PHYS 152; CHEM 330.

431, 631 IMMUNOLOGY (3+0) 3 credits
Principles of cellular and humoral mechanism of immunity including host-parasite interrelationships, antibody structure and function, hypersensitivity, tolerance, transplantation, immunity, and diseases of immune origins. Prerequisite or corequisite: BCH 301 and knowledge of basic immunologic principles.

432, 632 SEROLOGY LABORATORY (0+3) 1 credit
Practical application of fundamentals in cellular and humoral immunity using laboratory techniques commonly performed in detection of disease states. Corequisite: CLS 431 or 631.

703 AIRPORT PLANNING AND DESIGN (3+3) 3 credits
711 WATER RESOURCES SYSTEMS ANALYSIS (3+0) 3 credits
712 WATER RESOURCES PROJECTS (3+0) 3 credits
714 ADVANCED WATER RESOURCES TOPICS 1 to 4 credits
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Serological and immunohematological laboratory procedures; grouping, typing, compatibility testing, pregnancy testing, titers, cold agglutinins, quality control. Corequisite: CLS 251.

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Characteristics, medical significance and laboratory identification of clinically important bacteria. Prerequisite: CLS 161, 162.

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Collecting and processing specimens; cultivation and identification of clinically important bacteria; staining methods; media preparation; safety measures; susceptibility testing. Corequisite: CLS 271.

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Development, identification and function of cellular and humoral elements in whole blood. Principles of laboratory assays used in the diagnosis of hematologic disorders. Prerequisite: CLS 161, 162; BIOL 223 or equivalent.

292 APPLIED HEMATOLOGY (0+6) 2 credits
Slide preparation and staining; manual and automated assays of whole blood components; cell identification; coagulation tests and special hematology procedures. Corequisite: CLS 291.

296 CLINICAL PRACTICUM (1+6) 3 credits *S/U only*
A ten-week integration experience in hematology, microbiology, blood bank, scrology, urinalysis and chemistry to include theory review and clinical rotations. Case history project required. Prerequisite: CLS 161,162, 215, 216, 241, 242, 251, 252, 271, 272, 281, 282, 291, 292.

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Principles of cellular and humoral mechanism of immunity including host-parasite interrelationships, antibody structure and function, hypersensitivity, tolerance, transplantation, immunity, and diseases of immune origins. Prerequisite or corequisite: BCH 301 and knowledge of basic immunologic principles.

432, 632 SEROLOGY LABORATORY (0+3) 1 credit
Practical application of fundamentals in cellular and humoral immunity using laboratory techniques commonly performed in detection of disease states. Corequisite: CLS 431 or 631.

441, 641 ADVANCED CLINICAL CHEMISTRY (3+0) 3 credits
Critical examiantion of metabolism, methodology and clinical significance of chemical compounds in biological fluids. Prerequisite: CLS 296; CHEM 330; B CH 400 for CLS 441 and CHEM 343 for CLS 641.

442, 642 ADVANCED CLININCAL CHEMISTRY LABORATORY (0+3) 1 credit
Quantitative analysis of biological substances from blood, urine and body fluids with emphasis on special meth ods aind instrumentation applying a quality program. Corequisite: CLS 441, 641.

461 PATHOPHYSIOLOGY FOR CLINICAL LABORATORY SCIENCE (1+3) 2 credits
Correlation of clinical laboratory results with disease mechanisms. Literature review and seminar presentations of specified disease syndrome. For clinical laboratory majors in the preclinical semester.

490 INDEPENDENT STUDY 1 to 3 credits
Individualized in-depth study of a specific area of medical technology,e.g. clinical chemistry, hematology, immunology, immunohematology, microbiology, urinalysis, laboratory administration and education. Maximum of 6 credits.

496 CLINICAL PRACTICUM 3 to 15 credits *S/U only*
Supervised clinical experience in all hospital laboratory departments: clinical chemistry, clinical microbiology, hematology, immunology, and urinalysis and body fluids. Twenty-six weeks work experience, including elective, with emphasis on interpretation of laboratory results and clihical correlation. Prerequisite: successful completion of all professional (CLS) courses. For CLS majors only.

COMMUNITY HEALTH SCIENCES (CHS)

300 COMMUNICATION SKILLS IN HEALTH CARE (2+2) 3 credits
Analysis and methods of communications. Strategies for dealing with specific behavioral and psychosocial issues in the professional setting.

301 AGING: AN INTERDISCIPLINARY APPROACH (2+2) 3 credits
Theories, methods, policies and programs pertinent to the aged. Includes exploration of an individual's ability to age successfully. Prerequisite: PSY 101 or S W 220.

325 FOUNDATIONS OF HEALTH EDUCATION (3+0) 3 credits
History, philosophy, theory. Settings and roles for health educators. Prerequisite: HCS 101.

335 TEAM APPROACH TO SOCIAL WORK AND HEALTH CARE (3+0) 3 credits
Interdisciplinary studies of teamwork issues. Teams observe care providers and decision making in community settings. Prerequisite: CHS 300.

354 PERSONAL HEALTH AND LIFE STYLES (3+0) 3 credits
Focus on health, illness prevention and health-care decision making. Examination of stress, life style, environmental influences, chronic disorders, nutrition, fitness and family health. (Same as RPED 354.)

378 CONTEMPORARY ISSUES IN HEALTH (1 to 3+0) 1 to 3 credits
Analysis of current trends in health and health care issues. Topics may vary each semester. Maximum of 6 credits.

400 CULTURE AND ETHICS (3+0) 3 credits
Analysis of the constraints on applied decision making, including the role that religion, family and society play in the formation of values.

420, 620 HEALTH ASPECTS OF GERONTOLOGY (3+0) 3 credits
Physiological aspects of the aging process; normal and pathological health changes in relation to aging.

440, 640 LEADERSHIP TRAINING IN THE HEALTH PROFESSIONS (3+0) 3 credits
Theory and practice. Supervised experiential learning provided. Prerequisite: CHS 300 or 475. Maximum of 6 credits.

452, 652 HEALTH SYSTEMS AND POLICY (3+0) 3 credits
Emphasis on contemporary issues/problems in health care and potential solutions, including those drawn from health care strategies of other countries. Prerequisite: HCS 101.

462, 662 EPIDEMIOLOGY (3 + 0) 3 credits
Nature of disease patterns and occurrences. Etiology, recognition, transmission, prevention and principles used in the control of disorders affecting human health. Prerequsite: BIOL 262, 263; MATH 120.

464, 664 AIDS: PSYCHOSOCIAL AND HEALTH CARE CONCERNS (3+0) 3 credits
Clinical, public health, psychosocial, ethical, legal, economic, education, prevention and control issues affecting the health care delivery system, social services and society. Prerequisite: BIOL 111 or equivalent.

470 HEALTH EDUCATION SEMINAR (3+0) 3 credits
Program development, major issues and innovations. Prerequisite: HCS 101; CHS 325.

471, 671 HEALTH OF THE SCHOOL-AGED CHILD (3+0) 3 credits
Major health problems encountered in school-age children. An interdisciplinary approach to health management and health awareness programs for children and youth.

472, 672 WOMEN: SOCIAL AND HEALTH CARE CONCERNS (3+0) 3 credits
Community resources, health care, sexism and problems unique to women in American society. Prerequisite: S W 220 or PSY 101. (Same as S W 472, 672.)

473, 673 ETHNIC AND RACIAL MINORITIES SOCIAL AND HEALTH CARE CONCERNS (3+0) 3 credits
(See S W 473, 673 for description.)

474, 674 SOCIAL INTERVENTION IN ALCOHOL AND DRUG ABUSE (3+0) 3 credits
Identification, treatment, prevention and control of drug addiction and alcoholism. (Same as S W 474, 674.)

475, 675 HUMAN VALUES AND PROFESSIONAL ETHICS (3+0) 3 credits
Focuses on value systems and major ethical issues in social and health care such as confidentiality, truth-telling and codes of professional behavior.

477, 677 SPECIAL ISSUES (1+0) 1 credit each topic
Specific topic areas designed to help students to focus on area of interest. (a) Women and health, (b) group process and leadership, (c) multicultural health care concerns. (Same as HDFS 477, 677.)

482, 682 FIELD WORK IN GERONTOLOGY (0+9) 3 credits
Supervised field experience in community agencies. Provides students work experience with the aged in actual field situations. Prerequisite: CHS 301. Maximum of 6 credits.

488 FIELD EXPERIENCE IN HEALTH CARE AND EDUCATION 1 to 6 credits
Supervised practical experience in community agencies or practioners' offices. For department majors only. Maximum of 6 credits.

495, 695 GERONTOLOGY RESEARCH: DIRECTED INDEPENDENT STUDY (0+9) 3 credits
Guided research in the area of gerontology of mutual interest to the student and faculty. Prerequisite: CHS 301. Maximum of 6 credits.

496, 696 DIRECTED INDEPENDENT RESEARCH 1 to 3 credits
Guided research in an area of mutual interest to the student and faculty. Maximum of 6 credits

498, 698 SPECIAL PROBLEMS 1 to 3 credits Maximum of 6 credits.

499, 699 INDIVIDUAL READING 1 to 3 credits
Supervised reading with regular conferences between student and faculty. Maximum of 6 credits.

COMPUTER INFORMATION SYSTEMS (CIS)

201 INTRODUCTION TO COMPUTER INFORMATION SYSTEMS (3+0) 3 credits
Computer-based management information systems. Includes computer hardware and software, business applications, computers in organizations, systems theory, application development methods, changing technology and computer security and privacy issues. Corequisite: CIS 202.

202 COMPUTER INFORMATION SYSTEMS LABORATORY (0+2) 1 credit
Introduction to microcomputer applications and mainframe computing with emphasis on operating systems, spreadsheet, word processing, database, and statistical package software. Corequisite: CIS 201.

203 MICROCOMPUTERS IN BUSINESS (3+0) 3 credits
Use of microcomputers in solving management problems. Includes introduction to computer programming using procedural languages. Prerequisite: CIS 201, 202.

251 INTRODUCTION TO COMPUTER INFORMATION SYSTEMS DEVELOPMENT (3+0) 3 credits
Basic concepts of business information systems development using the COBOL language. Emphasis on logic structures, programming design, system testing and documentation. Prerequisite: CIS 203.

253 COMPUTER APPLICATIONS USING RPG (3+0) 3 credits
Programming in RPG. Parallel emphasis of on-line business application systems, especially accounting and inventory control. Prerequisite: CIS 201, 202.

UPPER-DIVISION COURSES: Business students must have satisfactorily completed the entire lower-division business core and CIS 251. (See section on *Upper-Division Courses* in the College of Business Administration section.)

451, 651 ADVANCED COMPUTER INFORMATION SYSTEMS DEVELOPMENT (3+0) 3 credits
Advanced concepts of business information systems development using the COBOL language. Emphasis on software engineering; data structures; file, screen, report design; and interactive system creation. Prerequisite: CIS 251.

461, 661 INFORMATION SYSTEMS ANALYSIS (3+0) 3 credits
Theory of systems development. Emphasis on structured analysis and logical design using analysis tools and techniques; life cycle concepts; user relationships; cost benefit analysis. Prerequisite: CIS 251.

475, 675 NETWORKS AND DATA COMMUNICATION (3+0) 3 credits
Case studies and problems relating to the analysis and design of business data communication systems. Evaluation of centralized, decentralized and distributed processing systems.

484, 684 DATABASE DESIGN AND IMPLEMENTATION (3+0) 3 credits
All issues related to the design and implementation of database systems; emphasizes entity relationships, relational and network modelling; implementation of a DBMS project on ORACLE. Prerequisite: CIS 451, 651.

485, 685 INFORMATION SYSTEMS DESIGN AND IMPLEMENTATION (3+0) 3 credits
Project course utilizing a comprehensive workbench package. Emphasis on pro. gram and physical system design; design of program structures, subsystems, user interfaces; implementation and conversion problems. Prerequisite: CIS 484.

487, 687 DECISION SUPPORT SYSTEMS (3+0) 3 credits
Taxonomy of DSSs and decision models; development of DSSs using higher-level programming languages, packages, quantitative models and data bases. Prerequisite: MGRS 352.

488, 688 SPECIAL TOPICS (3+0) 3 credits
Special topics in selected information systems problems.

490, 690 INDEPENDENT STUDY 1 to 3 credits
Independent study in selected topics. Maximum of 6 credits.

495, 695 INTERNSHIP IN COMPUTER INFORMATION SYSTEMS (1+0 per credit) 1 to 3 credits *S/U only*
Cooperative education wherein students apply knowledge to real business problems developed jointly by company officials and faculty adviser.

Inactive Course
150 BASIC (1+0) 1 credit

COMPUTER SCIENCE (C S)

105 COMPUTERS IN THE INFORMATION AGE (2+2) 3 credits
Overview of computer systems: hardware and software concepts, history, modern applications, impact on society, ethical considerations. Modular laboratory instruction emphasizing hands-on skills using personal computers.

113 COMPUTER APPLICATIONS FOR ENGINEERS AND SCIENTISTS (1+3) 2 credits
Introduction to programming in FORTRAN 77 and applications using individual computers. Elementary numerical and symbolic to solve problems in engineering and science. Corequisite: MATH 181.

183 INTRODUCTION TO COMPUTER SCIENCE I (3+2) 4 cred
Computer organization, algorithms, data representation, histor sure to computer applications from word processing to numeric lems. Emphasis on structured programming using PASCAL. Prer MATH 128 or satisfactory score on qualifying examination.

233 PC ASSEMBLY LANGUAGE SYSTEMS PROGRAMMING (3+0) 3 credits
Intel 8086/286/386/486 family, systems programming under t operating system, input/output, interfacing control, experime Motorola 68000 family assembly languages. Prerequisite: C S 183.

283 INTRODUCTION TO COMPUTER SCIENCE II (3+0) 3 cre
Structured program design using PASCAL. Applications draw elementary numerical methods, data structures and nonnumer rithms such as searching, sorting and Polish notation conversion. P site: C S 183 or equivalent.

284 APPLICATION COMPUTER LANGUAGES (1+0) 1 credit
Development of programming skills and training in selected appl in a single programming language chosen from C, FORTRAN, AP Prerequisite: C S 283 or equivalent. May be repeated for 1 credit language.

285 INTRODUCTION TO COMPUTER SYSTEMS (3+0) 3 credi
Computer structure, assembly language programming, machine lar Representation of data, subroutines, coroutines, recursion. Macro tion, data structures, symbolic debugging. Prerequisite: C S 283.

286 C PROGRAMMING 2 or 3 credits
For programmers: structured data types, expressions, control flov tions, pointers, I/O, use of libraries, system calls, files. Often tau Unix environment. Prerequisite: C S 183 or equivalent.

333 COMPUTER LOGIC DESIGN (3+0) 3 credits
Techniques for analysis and design of combinatorial and sequential ing networks, boolean algebra, elements of code theory, function n zation, computer subsystems, arithmetic and logic algorithms, asy nous sequential networks, simple computer operation. Prerequisite: 281. (Same as E E 333.)

336 MICROPROCESSORS (3+0) 3 credits
(See E E 336 for description.)

386 COMPUTER PROGRAMMING LANGUAGES (3+0) 3 credi
Syntax and semantics of programming languages. Algorithmic simu list processing and string manipulation languages. Run-time repr tion of program and data structures. Formal specification of data stru Prerequisite: C S 285.

387 INTRODUCTION TO THE THEORY OF COMPUTATION (3+0) 3 credits
Regular, context free, and type 0 languages and grammars; finit pushdown, and Turing automata; unsolvability; complexity, and N pleteness. Prerequisite: MATH 381; C S 386.

431, 631 DIGITAL COMPUTER ARCHITECTURE AND DESIG (3+0) 3 credits
(See E E 431, 631 for description.)

434, 634 IMAGE PROCESSING AND INTERPRETATION (3+0) 3
Image files, thresholding, histogram transformation, spectra, conn ness, edges, filtering, detection and recognition of objects, optical cha recognition. Prerequisite: C S 183; MATH 182.

437, 637 COMPUTER GRAPHICS (3+1) 3 credits
Software, hardware and mathematical tools for the representation, m lation and display of two- and three-dimensional objects: applicati these tools to specific problems. Prerequisite: C S 183. (Same as E E 43

439, 639 PATTERN RECOGNITION (3+0) 3 credits
Pattern recognition systems, statistical methods, discrimination functions, clustering analysis, unsupervised learning, feature extraction and feature processing. Prerequisite: MATH 352.

480, 680 COMPUTER APPLICATIONS IN EDUCATION (1+0 per credit) 1 to 3 credits
Microcomputer technology, computer science instruction and computer based instruction in the classroom. Evaluation of software packages. Practical experience with microcomputer systems. Not applicable for mathematics majors. Prerequisite: MATH 173 or 174. Does not satisfy the university core mathematics requirement. (Same as MATH 480, 680.)

481, 681 INTRODUCTION TO NONPROCEDURAL PROGRAMMING TECHNIQUES (3+0) 3 credits
(a) Functional programming; application and implementation, (b) LISP processing and macro techniques, (c) logic programming; patterns and styles; (d) object oriented descriptive programming. Prerequisite: C S 386. Maximum of 12 credits—3 in each topic.

482, 682 DATA COMMUNICATIONS AND COMPUTER NETWORKS (3+0) 3 credits
Digital modulation, transmission and synchronization, coding, error detection, interfacing, computer networks, ISO model, circuit/packet switching, local area networks. Prerequisite: C S 183, 333. (Same as E E 482, 682.)

483, 683 NUMERICAL METHODS I (3+0) 3 credits
(See MATH 483, 683 for description.)

484, 684 NUMERICAL METHODS II (3+0) 3 credits
(See MATH 484, 684 for description.)

485, 685 ANALYSIS OF ALGORITHMS (3+0) 3 credits
Analysis and design of algorithms on sequences, sets, graphs, and trees. Geometric, algebraic, and numeric algorithms, FTTs, reductions. Parallel algorithms. Prerequisite: C S 387.

486, 686 PRINCIPLES OF COMPUTER OPERATING SYSTEMS (3+0) 3 credits
Concurrent processes, interprocess communication, processor management, virtual and real memory management, deadlock, file systems, disk management, performance issues, case studies. Practical experience with UNIX. Prerequisite: C S 333, 485.

487, 687 COMPUTER DATABASE MANAGEMENT SYSTEMS (3+0) 3 credits
An overview of existing systems; physical data organization; relational, network and hierarchical models; data manipulation languages, data definition languages; database protection; database applications using INGRES. Prerequisite: C S 386.

488, 688 TOPICS IN ARTIFICIAL INTELLIGENCE (3+0) 3 credits
(a) Survey of artificial intelligence, (b) programming techniques in artificial intelligence. Prerequisite: C S 386 for (a); C S 481b for (b). Maximum of 6 credits—3 in each topic.

489, 689 TOPICS IN COMPUTER SCIENCE (1+0 per credit) 1 to 3 credits
Variable content chosen from such topics as computer networks, compilers, graphics, computability, analysis of algorithms, software design, functional programming and denotational semantics. Maximum of 6 credits.

493, 693 INDEPENDENT STUDY IN COMPUTER SCIENCE 1 to 3 credits
Directetd study and/or research in areas of mutual interest to student and faculty. Maximum of 6 credits.

495, 695 SOFTWARE ENGINEERING (3+0) 3 credits
Requirements specifications, structured analysis, modeling, top down design, testability, maintainability, portability, verification and validation, modification, configuration, management, reliability, efficiency, complexity, compatibility, modularity, interfacing, hardware and language issues. Prerequisite: senior standing and junior-level course work in computing.

496 SENIOR PROJECTS 2 to 4 credits
Faculty-supervised individual or small-group projects with emphasis on research, design, or tutorial study. Prerequisite: C S 486. Maximum of 8 credits.

703 COMPUTABILITY AND FORMAL LANGUAGES (3+0) 3 credits
Turing machines, recursive functions, computability and undecidability. Formal languages and their decision problems. Prerequisite: MATH 381. (Same as MATH 703.)

704 NONPROCEDURAL PROBLEM SOLVING TECHNIQUES (3+0) 3 credits
(a) Knowledge based systems, (b) PROLOG problem solving. Maximum 6 credits—3 in each topic. Prerequisite: C S 488b.

705 COMPILERS AND TRANSLATORS (3+0) 3 credits
Context-free and regular grammars, lexical analyzers. LL(k) and LR(k) parsars, syntax directed translation, code generation, optimization; practical experience with compiler writing tools of UNIX. Prerequisite: C S 486, 686.

706 ADVANCED OPERATING SYSTEMS CONCEPTS (3+0) 3 credits
(a) Design and implementation, (b) computer networks. Maximum of 6 credits —3 in each topic. Prerequisite: C S 486, 686.

709 TOPICS IN ADVANCED COMPUTER SCIENCE (3+0) 3 credits
(a) Algorithms and complexity, (b) software project management and development, (c) discrete systems simulation. Maximum 9 credits—3 in each topic. Prerequisite: MATH 381 or 435 for (a); C S 486 for (b) and (c).

732 THEORY OF PARALLEL AND DISTRIBUTED PROCESSING (3+0) 3 credits
(See E E 732 for description.)

733 MACHINE INTELLIGENCE (3+0) 3 credits
(See E E 733 for description.)

790 SEMINAR 1 to 3 credits
Maximum of 6 credits.

791 SPECIAL TOPICS 1 to 3 credits

793 INDEPENDENT STUDY 1 to 3 credits

796 PROFESSIONAL PAPER 2 credits *S/U only*

797 THESIS 1 to 6 credits

COUNSELING AND EDUCATIONAL PSYCHOLOGY (CEP)

122 ENHANCING ACADEMIC SUCCESS (1+0) 1 credit *S/U only*
Improving competence in such areas as time management, interpersonal communication, goal setting, decision-making, test-taking strategies and concepts related to the achievement of academic success.

123 CAREER DEVELOPMENT (2+1) 2 credits *S/U only*
Occupational choice processes leading to control over one's own life/career development by planning and decision-making.

314 STUDENT SERVICE LEADERSHIP (2+1) 2 credits
Theories of leadership, communication and conflict resolution among individuals and/or groups. Dynamics of effective interpersonal skills for student development.

330 EDUCATIONAL PSYCHOLOGY (3+0) 3 credits
Overview of the psychology of learning, motivation, growth and development, personality dynamics and social adjustment. Field experience required during course. Prerequisite: PSY 101.

331 EDUCATIONAL PSYCHOLOGY EXPERIENCE (0+2) 1 credit *S/U only*
Field experience to assist students to apply basic helping principles of educational psychology to tutoring and school situations. Prerequisite or corequisite: CEP 330.

400, 600 INTRODUCTION TO COUNSELING AND GUIDANCE (3+0) 3 credits
Overview of personnel services that include counseling, individual appraisal, occupational information, group procedures, referral and follow-up. Prerequisite: PSY 101. Meets teacher certification requirements.

401, 601 INTRODUCTION TO ELEMENTARY SCHOOL GUIDANCE (3+0) 3 credits
Overview of personnel services at the elementary school and preschool levels. The teacher's role emphasized. Meets teacher certification requirements.

410, 610 INTRODUCTION TO EMPLOYMENT COUNSELING (3+0) 3 credits
Principles, procedures, techniques, backgrounds of public and private employment agencies. Emphasis on employment records, tests (General Aptitude Test Battery), occupational information, referral, placement, employer relations. Prerequisite: CEP 400.

412, 612 CORRECTIONS COUNSELING (3+0) 3 credits
Overview of services provided by counselors of public offenders, including juvenile and adult probation, imprisonment, and parole. Prerequisite: CEP 400.

417, 617 INTRODUCTION TO REHABILITATION COUNSELING (3+0) 3 credits
Philosophy, procedures, staff and professional relationships employed in the rehabilitation process including evaluation, interviewing, planning and placement. Prerequisite: CEP 400.

420, 620 THE INFORMATION SERVICES (3+0) 3 credits
Procurement, evaluation and utilization of occupational, educational and personal-social information within the context of a guidance program, includes the follow-up and community surveys, placement and referral agencies. Prerequisite: CEP 400 or 401.

422, 622 CAREER EDUCATION (3+0) 3 credits
Career education encompasses the career development experiences for kindergarten through twelfth-grade instructional sequences. The goal is self and environmental awareness by approaching subject matter from the standpoint of vocational utility. Designed for the classroom teacher. Prerequisite: CEP 330.

431, 631 BEHAVIORAL ANALYSIS (3+0) 3 credits
Interaction analysis of groups and diagnosis of individual behavior. Prerequisite: CEP 330.

436, 636 TEACHING FOR CRITICAL THINKING (3+0) 3 credits
Emphasized knowledge and understanding of the field of critical thinking and methods and procedures required to teach critical thinking at various age levels.

440, 640 EDUCATIONAL MEASUREMENTS AND STATISTICS (3+0) 3 credits
Basic statistical methods in the field of education and related disciplines. Emphasis on role of statistics in behavioral research; meets certification requirements for those areas in education requiring a background in statistical understandings.

442, 642 INDIVIDUAL APPRAISAL I (3+0) 3 credits
Selection, administration, interpretation and statistical understanding of standardized aptitude, achievement and personal-social adjustment tests. Prerequisite: CEP 400 or 401.

456, 656 INTRODUCTION TO SEX EDUCATION (1+0) 1 credit
Introduces concerns relating to sexual anatomy, vocabulary, values, pregnancy, abuse, rape, disease, homosexuality, and curricular programs

460, 660 GROUP PROCESS (3+0) 3 credits
Theory and techniques in understanding group behavior and the development of experiences that lead to self-insight. Prerequisite: CEP 400 or 401.

465, 665 CHILD AND FAMILY GUIDANCE (3+0) 3 credits
Principles of child behavior at home and school are studied with actual teachers, children and families involved. Application for counselors and teachers is emphasized. Prerequisite: CEP 400 or 401.

490, 690 WORKSHOP IN COUNSELING AND GUIDANCE (1+0 per credit) 1 to 4 credits
Specialized instruction in counseling and guidance designed to develop depth in understanding of a current guidance problem. Maximum of 4 credits.

491, 691 SPECIAL TOPICS WORKSHOP (1 to 3+0) 1 to 3 credits *S/U only*
Specialized instruction designed to develop breadth of understanding in current counseling topics. Maximum of 6 credits.

499, 699 SPECIAL PROBLEMS IN COUNSELING 1 to 6 credits
Specialized instruction in counseling and guidance personnel services designed to develop depth in understanding of current counseling problems of the in-service counselor. A maximum of 6 credits accepted in special problems for graduate degree programs.

614 COLLEGE STUDENT DEVELOPMENT SERVICES (3+0) 3 credits
Characteristics of college students' goals, values, attitudes and relationships. Student personnel systems designed to facilitate personal, social, academic and vocational growth. Prerequisite: CEP 400.

632 GROUP GUIDANCE (3+0) 3 credits
Human relations, psychological education, and structured developmental group guidance activities and skills featured. Overview of the emotional aspects of learning, valuing, and communicating. Prerequisite: CEP 600.

700 INTRODUCTION TO EDUCATIONAL RESEARCH (3+0) 3 credits
Introduction course required for all students preparing for an advanced degree. Emphasis on the purpose, general procedures and types of educational research. Designed for research practitioners and consumers.

715 SEMINAR IN COLLEGE STUDENT DEVELOPMENT (3+0) 3 credits
Student personnel functions of developing, implementing and evaluating to include: programs in higher education financial aids, career planning and placement, enrollment planning, residential life, counseling, student activities, academic advising, and administration.

716 COUNSELING IN HIGHER EDUCATION (3+0) 3 credits
Focus on the psychological, intellectual, emotional development aspects of both late adolescents and transitional adults and their counseling needs as students in higher education institutions. Prerequisite: CEP 750.

721 THEORIES OF OCCUPATIONAL CHOICE (3+0) 3 credits
Analysis of the relationships among theoretical constructs, counselor behavior and vocational counseling services. Prerequisite: CEP 400 or 401.

738 LEARNING THEORIES IN EDUCATION (3+6) 3 credits
Problem-solving, cognitive processes, concept formation and creativity from the viewpoint of major learning theorists as applied to the educational and classroom setting. Conditions and processes of behavior modification. Prerequisite: CEP 631.

740 ADVANCED EDUCATIONAL MEASUREMENTS AND STATISTICS (3+0) 3 credits
Second course designed for the student planning to contribute research findings of their own design. Refinement of inferential statistical methods introduced in CEP 440. Prerequisite: CEP 440 or 640 or equivalent.

742 INDIVIDUAL APPRAISAL II (3+0) 3 credits
Techniques and interpretation of personality appraisal with an emphasis on school age children. Includes self report inventories, projective techniques, and rating scales. Prerequisite: CEP 642.

744 INDIVIDUAL APPRAISAL III (4+6) 6 credits
Selection, administration, and interpretation of individually administered scales of mental capacity and emotional analysis. Prerequisite: CEP 742, 770.

749 CASE STUDY SEMINAR (2+3) 3 credits
Study, diagnosis, planning and evaluation of program of services provided counselees and students. Instructional processes include staff-study in demonstration of cooperative interprofessional relationships. Prerequisite: CEP 750 plus 18 graduate credits in CEP courses.

750 THE COUNSELING PROCESS (3+0) 3 credits
Theory and techniques of therapeutic counseling; self-theory emphasized with dyadic relationships the focus. Prerequisite: CEP 400 or 401.

751 COUNSELING THE CULTURALLY DIFFERENT (3+0) 3 credits
Special relational problems and processes in the counseling setting in effectively dealing with counselees from non-middle class and/or non-Caucasian backgrounds. Values, attitudes and beliefs of various subcultures. Prerequisite: CEP 750.

752 ADVANCED COUNSELING THEORY (3+0) 3 credits
Depth investigation of major theoretical positions related to professional counseling services. Ethical and procedural components stressed. Prerequisite: CEP 770.

753 COUNSELING THE OLDER WORKER (3+0) 3 credits
Concerns of older persons preparing for retirement and life-style changes; agency counseling assistance programs; special relational skills and intervention systems when dealing with the aging person. Prerequisite: CEP 750.

754 SUBSTANCE ABUSE COUNSELING (3+0) 3 credits
Physical and psychological aspects of substance abuse; specific counseling and treatment approaches. Prerequisite: CEP 750.

755 SEMINAR IN ELEMENTARY SCHOOL COUNSELING (3+0) 3 credits
Directed seminar format considering roles and relationships of pupil personnel specialists within grades kindergarten through sixth. Case studies illustrate interprofessional functioning between school and community agencies. Pupil, parental and faculty concerns explicated. Prerequisite: CEP 642, 660, 750.

756 SEXUAL ISSUES IN COUNSELING (3+0) 3 credits
Counseling problems and techniques related to major current sexually-related concerns such as sexual roles and dysfunctions, unwanted pregnancy and sexually transmitted diseases.

761 GROUP COUNSELING (3+0) 3 credits
Theories and techniques of small group counseling with an emphasis on developing group counseling leadership skills. Prerequisite: CEP 750.

764 GROUP COUNSELING THEORY (1+0 per credit) 2 or 3 credits
Group counseling processes provided for small groups. Includes co-counseling designs: (a) family groups, (b) employment groups, (c) need groups. Prerequisite: CEP 660 plus 15 graduate credits in CEP courses.

765 THEORY AND PRACTICE OF MARRIAGE COUNSELING (3+0) 3 credits
Study of therapy systems to aid intimate partnerships, their formation, maintenance and termination. Prerequisite or corequisite: CEP 770.

766 ADVANCED FAMILY COUNSELING (3+0) 3 credits
Study of therapeutic intervention systems over the life span of developing families. Prerequisite: CEP 765.

769 COUNSELING LABORATORY (0+6) 3 credits *S/U only*
Counseling experience and practice under supervision. Corequisite: CEP 750.

770 PRACTICUM IN COUNSELING (1-1/2+6) 3 credits
Supervised counseling internship. May be repeated to a maximum of 6 credits per advanced degree. Written applications required by July 1 for fall and December 1 for spring. (a) Elementary schools; (b) secondary schools; (c) higher education; (d) employment service; (e) vocational rehabilitation; (f) private agencies. Prerequisite: CEP 620 or 721, 642, 660, 750.

772 PRACTICUM IN GROUP COUNSELING (1-1/2+6) 3 credits
Supervised counseling internships with small groups. Written applications required one month prior to registration. Maximum of 6 credits. Prerequisite: CEP 770.

773 PRACTICUM IN FAMILY COUNSELING (1+4 per credit) 3 or 6 credits
Supervised counseling internship with families. Written applications are required by July 1 for fall and December 1 for spring. Prerequisite: CEP 770.

774 COLLEGE STUDENT DEVELOPMENT LABORATORY (0+9) 3 credits
Supervised work experience at a professional level. (a) recruitment and retention, (b) academic advising, (c) orientation, (d) international student affairs, (e) administration. Prerequisite: 15 graduate CEP credits appropriate to the assignment.

775 DOCTORAL RESEARCH SEMINAR (3+0) 3 credits
Advanced considerations relating to the materials, procedures and write-up techniques involved in educational research. Special attention on analysis of various social science approaches to the study of education problems. Doctoral research area should be identified before enrolling; concurrently, the student must be registered for at least 3 credits of CEP 799. Prerequisite: doctoral candidacy plus CEP 640 and 700 or equivalent.

776 GUIDANCE LABORATORY (1-1/2+6) 3 credits
Supervised guidance work experience at a professional leadership level. (a) financial aids and graduate placement, (b) residence halls and college housing, (c) occupational information and vocational placement, (d) career education, (e) consulting, (f) appraisal, (g) substance abuse. Prerequisite: 12 graduate CEP credits appropriate to the task activities.

779 INTERNSHIP IN SCHOOL PSYCHOLOGY (1/2+2 per credit) 3 to 6 credits
Directed experiences in the administration, interpretation, consultation and counseling pertaining to assessment and school psychological services. Written applications required one month prior to registration. Maximum of 12 credits. Prerequisite: CEP 744.

782 CONSULTATION AND SUPERVISION IN COUNSELING SERVICES (3+0) 3 credits
Theoretical and practical counseling methods for assisting the change process in individuals and organizations. Includes the theory and practice of supervision techniques for counseling services. Prerequisite: completion of 18 CEP graduate credits.

784 STRUCTURE AND SUPERVISION OF PUPIL PERSONNEL PROGRAMS (2+0) 3 credits
Assessing the need, determining the structure, supervising the specialists and evaluating the functions of pupil and student personnel programs. Emphasizes procedures for incorporating guidance services within the educational setting. Meets certification requirements for school counselors. Prerequisite: CEP 750.

790 SEMINAR 2 to 4 credits Maximum of 4 credits.

791 SPECIAL TOPICS 1 credit
Selected basic problems related to counseling and guidance personnel services. Maximum of 4 credits.

794 COLLOQUIA IN COUNSELING (1+0 per credit) 1 to 3 credits *S/U only*
Emphasis on current and pertinent topics. Presentations by prominent professionals in the field.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

798 COUNSELING INTERNSHIP (0+2 per credit) 1 to 6 credits
A program of professional counseling services in one of the following areas: (a) elementary schools, (b) secondary schools, (c) higher education, (d) employment service, (e) vocational rehabilitation, (f) private agencies, (g) marriage and family. Prerequisite: 6 counseling practicum credits.

799 DISSERTATION 1 to 12 credits

CRIMINAL JUSTICE (C J)

110 INTRODUCTION TO CRIMINAL JUSTICE (3+0) 3 credits
Introduction to the history, philosophy and functions of community, state and federal agencies or services involved in the criminal justice system. Chronological process of procedures from incident to final disposition.

120 CRIMINAL LAW (3+0) 3 credits
General introduction to the substantive law of crimes, emphasizing historical development; types and elements of crime; criminal responsibility; justification and defense; anticipatory offenses.

211 POLICE IN AMERICA (3+0) 3 credits
Historical development, roles, socialization and problems of police work. Prerequisite: C J 110.

220 CRIMINAL PROCEDURE (3+0) 3 credits
Origin, development and rationale of the structural and procedural aspects of America's criminal justice system and arrest, search-seizure, confessions and related legal issues.

231 CORRECTIONS (3+0) 3 credits
Overview of development of corrections, recent innovations and future correctional systems structure and programs. Prerequisite: C J 110.

232 COMMUNITY CORRECTIONS (3+0) 3 credits
Philosophy of community corrections, alternatives to confinement, the role of corrections in the community, evaluation of existing programs and administration of and planning for community corrections. Prerequisite: C J 231.

UPPER DIVISION COURSES: Junior or senior classification is required for a student to register in criminal justice courses numbered 300-499.

312 ADMINISTRATION (3+0) 3 credits
Theory of management and motivation; bureaucracy; labor law and relations; financial administration; criminal justice agency administration. Prerequisite: C J 110.

320 COURTS IN CRIMINAL JUSTICE (3+0) 3 credits
Survey of the history, evolution, and current practices of various U.S. courts emphasizing the impact on civil litigation, social equity and criminal justice.

324 PRINCIPLES OF CRIMINAL INVESTIGATION (3+0) 3 credits
Fundamental principles of criminal investigation including crime scene work, collection and analysis of physical evidence, sketching, forensic photography and identification techniques. Prerequisite: completion of all required lower-division criminal justice courses. Open only to criminal justice majors and minors.

326 JUVENILE JUSTICE (3+0) 3 credits
Decision-making processes; theories of delinquent behavior; court decisions and problems affecting the administration of justice during childhood and adolescence. Prerequisite: C J 110.

328 STATISTICS FOR CRIMINAL JUSTICE (3+0) 3 credits
Study and practice with statistical methods which are useful in the collection, processing and utilization of data relative to criminal justice work. Prerequisite: completion of all required lower-division criminal justice courses.

330 PROFESSIONAL PAPER-RESEARCH PROBLEM 3 credits
Prerequisite: C J 110.

331 THE CORRECTIONAL INSTITUTION (3+0) 3 credits
Analysis of the administration and societies of the prison community. Prerequisite: C J 110, 231.

332 PROBATION AND PAROLE (3+0) 3 credits
Scope and functions of probation and parole, decision-making processes, differences in supervision of clients, management of resources, use of volunteers and current trends in these fields. Prerequisite: C J 231.

336 JUVENILE CORRECTIONS (3+0) 3 credits
Overview of development of juvenile corrections, nature of the offender, processing, treatment and aftercare facilities. Prerequisite: C J 110, 231.

366 CRIMINOLOGY (3+0) 3 credits
(See SOC 366 for description.)

367 PENOLOGY (3+0) 3 credits
(See SOC 367 for description.)

368 CRIME AND CRIMINAL TYPOLOGIES (3+0) 3 credits
Analysis of behavior patterns and career variables in selected offenses, including serial murders and white collar, sex, organized, corporate and violent criminals. Prerequisite: C J 366.

410 CRIMINAL JUSTICE SEMINAR (3+0) 3 credits
Intensive study of the theory, and operation of the entire criminal justice system. Open only to criminal justice majors.

411 COMPARATIVE CRIMINAL JUSTIC SYSTEMS (3+0) 3 credits
Survey of selected international criminal justice systems, to include police, courts and corrections subsystems; human rights issues; offender treatment; and geographical, historical and ctural perspectives. Prerequisite: C J 110.

412 ADVANCED ORGANIZATION AND ADMINISTRATION (3+0) 3 credits
Advanced concepts and theories of criminal justice organization and administration. Prerequisite: C J 110, 312.

413 DILEMMAS IN LAW AND LAW ENFORCEMENT (3+0) 3 credits
Legal, moral and social implications of issues including police discretion, deadly force, victimless crimes, surveillance, entrapment, plea bar judicial discretion and other controversial issues. Prerequisite: C

420 JURISPRUDENCE (3+0) 3 credits
See P SC 420, 620 for description.)

424 CRIMINALISTICS (2+3) 3 credits
Gathering and presentation of evidence. Preparation of evidence f sic use. Prerequisite: C J 324. Open only to criminal justice ma minors.

425 ADVANCED CRIMINAL INVESTIGATION (2+3) 3 credit
Continuation of C J 324 with emphasis on crime scene work and u crime laboratory. Prerequisite: C J 324.

431 LEGAL ASPECTS OF CORRECTIONS (3+0) 3 credits
Post-conviction remedies, including legal implications of senten prisoner access to courts, probation and parole, discipline, classi and conditions of confinement. Prerequisite: C J 231, 320, 366.

450 CRIMINAL JUSTICE INTERNSHIP 1 to 6 credits S/U *only*
Individual student internships are arranged with appropriate state, or local criminal justice agencies. Regular written reports on tions and activities are required. Maximum of 9 credits. Pren departmental approval.

498 SELECTED TOPICS IN CRIMINAL JUSTICE 1 to 3 credits
Study of a major topic or issue in criminal justice. Maximum of when content differs.

499 INDEPENDENT STUDY IN CRIMINAL JUSTICE 1 to 3 cr
Maximum of 6 credits. Open only to criminal justice majors.

Inactive Courses
313 CRIMINAL JUSTICE AND COMMUNITY RELATIONS (3+0)
316 TECHNIQUES OF POLICE TRAFFIC FUNCTIONS (3+0) 3 c

CURRICULUM AND INSTRUCTION (C I)

230 ORIENTATION TO VOCATIONAL EDUCATION (3+0) 3
Organization and management of vocational classes, laboratories work experiences, etc., youth groups and advisory committees.

270 HUMAN GROWTH AND DEVELOPMENT (3+0) 3 credits
Principles of human growth and development, the nature of the ch child and adolescent learning. Prerequisite: general psychology. Cor C I 271.

271 ELEMENTARY EDUCATION EXPERIENCE (0+3) 1 credit
This field experience in the public schools acquaints prospective teach the students and environment of elementary schools. Corequisite: C I

280 BASIC COMPUTER APPLICATIONS IN EDUCATION (1+0) 1 credit
Basic exposure to computing and to computer applications in ed Includes hands-on experience with the computer. Designed prim prospective teachers.

290 ISSUES IN EDUCATIONAL COMPUTING (1+0) 1 credit
Examination of current research, issues and trends in educational ing.

300 READING AND LANGUAGE ARTS IN THE ELEMENTA SCHOOL (3+0) 3 credits
Basic understanding, techniques, and approaches to instruction in written language development, comprehension, word recognition ics, writing process and literature-based curriculum.

301 INTRODUCTION TO LIBRARY EDUCATION (3+0) 3 cred
Acquaints student with philosophy and work of school librarian duces bibliographic tools and information sources basic to librari emphasizing those used in school library work.

303 EXPOSITORY WRITING FOR EDUCATORS (3+0) 3 credits
Advanced composition course focusing on writing analysis, sy persuasive and research papers.

05 VOCATIONAL SAFETY TECHNIQUES (1+0) 1 credit
ntroduction to basic concepts of classroom safety strategies, area of emhasis including concerns for safety, responsibility and liability and preenting bodily injury.

10 EDUCATION OF THE EXCEPTIONAL CHILD
(1+0 per credit) 2 or 3 credits
urvey of the various types of exceptionalities. Emphasis on etiology, hysical and educational characteristics.

11 INTRODUCTION TO LEARNING AND BEHAVIOR DISORDERS
(3+0) 3 credits
Overview of contemporary theories and approaches to learning and behavor disorders with emphasis on assessment and treatment methodologies. Prerequisite: C I 310.

12 EXCEPTIONAL CHILD EXPERIENCE (0+3) 1 credit *S/U only*
ield experience to acquaint students with types of handicapping conditions and kinds of services available to handicapped persons. Prerequisite r corequisite: C I 311.

13 SURVEY OF MENTAL RETARDATION (3+0) 3 credits
Definitions, classification, characteristics, causes, and issues. Prerequisite r corequisite: C I 270, 271, 310.

14 SURVEY OF LEARNING DISABILITIES (3+0) 3 credits
Characteristics, theoretical orientations, and educational interventions. Prerequisite or corequisite: C I 270, 271, 310.

15 SURVEY OF BEHAVIORAL DISORDERS (3+0) 3 credits
Characteristics, theoretical orientation, and educational interventions. Prerequisite or corequisite: C I 270, 271, 310.

50 MIDDLE SCHOOL PRACTICUM (2+3) 3 credits
General principles of secondary instruction with field experience in the middle school.

93 AUDIOVISUAL EQUIPMENT AND INSTRUCTIONAL MEDIA
1 credit
Beginning exposure to audiovisual equipment used in teaching and preparation of basic instructional materials for the classroom. Prerequisite: ducation major.

00, 600 SIGN LANGUAGE FOR TEACHERS (3+0) 3 credits
Development of signing and fingerspelling skills. Curriculum development based on manual communication. Orientation to American sign anguage and deaf culture.

01, 601 INDIVIDUALIZED METHODS OF TEACHING READING
(3+0) 3 credits
Theory, procedures, organization and content of an individualized approach to the teaching of reading. Prerequisite: C I 300.

04, 604 READING AND WRITING IN THE SECONDARY SCHOOL
(3+0) 3 credits
n content fields; sources of difficulties; developmental instruction; techniques for promoting comprehension and vocabulary. Prerequisite: C I 270, EP 330, or valid teaching certificate.

06, 606 SURVEY OF REMEDIAL READING PROBLEMS (3+0) 3 credits
ntroductory course for remedial reading training. Offers specialized instruction in reading designed to develop depth in remedial reading problems. Prerequisite: C I 300.

07, 607 BOOK SELECTION FOR CHILDREN (3+0) 3 credits
Survey of the field of books for children. Children's reading interests and needs s bases for evaluating and selecting library materials for the elementary school.

08, 608 BOOK SELECTION FOR ADOLESCENTS/YOUNG ADULT
(3+0) 3 credits
Prepares teachers, librarians and administrators for evaluation of books and ther library materials for pupils in secondary schools. Prerequisite: C I 301 r equivalent.

09, 609 HANDICAPPED LEARNERS IN THE REGULAR CLASSROOM
(3+0) 3 credits
Preparation of teachers to deal with assessment and program development or handicapped children who are placed in the regular classroom. Prerequisite: E L 101, C I 270 or equivalent. Meets new teacher education certification requirements.

410, 610 SPECIAL EDUCATION CURRICULUM: GENERAL METHODS
(3+0) 3 credits
Special instructional methods for students with cognitive and behavioral disorders. Includes intruction in I.E.P. goals and objectives. Prerequisite or corequisite: C I 313, 314, 315.

413, 613 SERVING HANDICAPPED INDIVIDUALS AND THEIR FAMILIES (3+0) 3 credits
Facilitating the interrelationship of varied services for exceptional students. Focus includes working with parents, professionals and community service.

415, 615 THE ADOLESCENT LEARNER AND THE SECONDARY CURRICULUM (3+0) 3 credits
Accommodating the secondary curriculum to developmental characteristics of the adolescent. Prerequisite: preprofessional standing in teacher certification program.

416, 616 INSTRUCTION OF MODERATELY AND SEVERELY RETARDED STUDENTS (3+0) 3 credits
Curriculum developments and methods in teaching the moderately and severely retarded child. Includes an experience with severely handicapped children.

417, 617 SPECIAL EDUCATION CURRICULA: APPROACHES FOR ADOLESCENTS (3+0) 3 credits
Needs of adolescents with cognitive and behavioral disorders in secondary school special education programs. Strategies to improve academic, social, career/vocational and transition skills. Prerequisite or corequisite: C I 313, 314, 315.

418, 618 SPECIAL EDUCATION CURRICULA: COMMUNICATION/SOCIAL SKILLS (3+0) 3 credits
Strategies to improve the development of communication/social skills of students with mild/moderate disabilities. Prerequisite or corequisite: C I 313, 314, 315.

419, 619 TEACHING THE BLIND AND VISUALLY HANDICAPPED
(1+1 per credit) 2 or 3 credits
Anatomy and physiology of the eye. Instruction of the partially seeing and blind. Instruction in Braille, six-key typewriter and other audiovisual equipment. Prerequisite: C I 310.

420, 620 SOCIOCULTURAL CONCERNS IN EDUCATION
(3+0) 3 credits
Analysis of equity issues in contemporary schools. Concerns relative to access, participation, and benefit are addressed in relation to education for culturally pluralistic student populations. Prerequisite: C I 450 or CEP 330.

421, 521 TEACHING SECONDARY SOCIAL STUDIES
(3+0) 3 credits
Nature of social growth of adolescents in a democratic culture. Content and procedures in social studies. Development of instructional materials and techniques. Prerequisite: preprofessional standing in the College of Education.

422, 522 TEACHING OF SECONDARY MATHEMATICS
(3+0) 3 credits
Curriculum and instruction in secondary school mathematics with emphasis on relating it to college mathematics. Prerequisite: preprofessional standing in the College of Education; MATH 474, 475.

423, 523 TEACHING SECONDARY ENGLISH (3+0) 3 credits
Principles and practices for teaching writing, speaking, listening and literature. Prerequisite: preprofessional standing in the College of Education.

424, 524 TEACHING SECONDARY SCHOOL SCIENCE
(3+0) 3 credits
Content and methods in teaching secondary science with emphasis on scientific literacy, demonstration, investigation, computer application, and other educational technology. Prerequisite: preprofessional standing in the College of Education.

425, 525 TEACHING IN OCCUPATIONAL EDUCATION (3+0) 3 credits
Methods and materials in area of specialty: (a) agricultural education, (b) business education, (c) home economics education, and (d) industrial education. Prerequisite: preprofessional standing in the College of Education.

426, 526 TEACHING SECOND LANGUAGES IN THE PUBLIC SCHOOL (3+0) 3 credits
Examination of traditional and innovative second language teaching approaches; lesson design for major skills; supervised teaching in groups. Prerequisite: preprofessional standing in the College of Education.
tions safety precautions, and shop regulations. Prerequisite: C I 270 or CEP 330; preprofessional standing in the College of Education.

429, 629 METHODS OF TEACHING ENVIRONMENTAL SCIENCE (3+0) 3 credits
Methods of teaching environmental science. Special emphasis on outdoor education methods. Materials and media for effective teaching. Prerequisite: 9 credits in science and a science methods course; preprofessional standing in the College of Education.

430, 630 KINDERGARTEN EDUCATION (1+0 per credit) 2 or 3 credits
Practical problems of organizing kindergarten programs. Emphasis on methods, materials and development aspects of learning.

431, 631 ESL INSTRUCTION IN THE ELEMENTARY SCHOOL (3+0) 3 credits
Systematic instruction to help ESL students (1) adjust to school, (2) acquire English for self-help and for extended interaction; (3) develop English for extended learning. Prerequisite: ENGL 281 or C I 450.

432, 632 MICROCOMPUTERS IN EDUCATION (2+3) 3 credits
Uses of microcomputers in education, microcomputer operations, hardware/software selection, work processing and LOGO. Applied outcomes applicable to the classroom for teachers seeking a practical knowledge of how to operate and utilize microcomputers in education. Prerequisite: C I 290.

433, 633 CREATIVE EXPERIENCES IN ELEMENTARY EDUCATION (1+0 per credit) 1 to 3 credits
Analysis of the nature of creative expression including art, music, movement drama and creative thinking. Prerequisite: E L 101.

434, 634 CLASSROOM MANAGEMENT TECHNIQUES (3+0) 3 credits
Major aspects of classroom management including the physical arrangement of the classroom, scheduling, daily routines and procedures, models of discipline and methods for dealing with behavior problems.

435, 635 PROGRAMMING LANGUAGES (2+3) 3 credits
Educational applications of programming languages. LOGO, BASIC and PASCAL are offered on a rotating basis according to student need. Prerequisite: C I 290, 488, 688.

436, 636 TEACHER APPLICATIONS OF MICROCOMPUTERS (2+3) 3 credits
Strategies and techniques for effective use of microcomputers in the classroom. Topics include software evaluation, authoring systems, utility programs, classroom management uses and new technologies. Prerequisite: C I 290, 432,

437, 637 LAW, SOCIETY AND EDUCATION (3+0) 3 credits
Effects of judicial decisions upon society and education; interactions among the law, society and education. Prerequisite: C I 270 or CEP 330.

438, 638 TEACHING WRITING IN THE PUBLIC SCHOOLS (3+0) 3 credits
Current theory and related practices in the teaching of writing in grades K-12 . Prerequisite: ENGL 321.

439, 639 THE JUNIOR HIGH SCHOOL/MIDDLE SCHOOL (3+0) 3 credits
Development, basic philosophy and functions. Psychological and educational foundations. Problems and practices in administration, curriculum, instruction, guidance and student activities. Prerequisite: C I 270 or CEP 330.

440, 640 THE INTEGRATED CURRICULUM (3+0) 3 credits
Integration of subject matter into a functional learning situation. Attention is given to curricular areas and methods of instruction. Prerequisite: C I 270 or CEP 330.

441, 641 CURRICULUM DEVELOPMENT IN THE SOCIAL STUDIES (3+0) 3 credits
Research and curriculum studies dealing with content and procedures of the social studies. Prerequisite: C I 421 or 463.

442, 642 CURRICULUM DEVELOPMENT IN MATHEMATICS (3+0) 3 credits
Research and curriculum studies dealing with content and procedures of mathematics. Prerequisite: C I 422 or 464.

443, 643 CURRICULUM DEVELOPMENT IN THE LANGUAGE ARTS (3+0) 3 credits
Research and curriculum studies dealing with the content and procedures of the language arts. Prerequisite: C I 423 or 466.

444, 644 CURRICULUM DEVELOPMENT IN SCIENCE (3+0) 3 credits
Research and curriculum studies dealing with content and procedures of the science program. Prerequisite: C I 424 or 465.

445, 645 LITERACY DEVELOPMENT FOR ESL STUDENTS (3+0) 3 credits
Second language proficiency and literacy development; whole language approaches to second language literacy; enhancing transfer of literacy tasks in the regular classroom.

446, 646 CURRICULUM DEVELOPMENT IN SECOND LANGUAGE EDUCATION (3+0) 3 credits
Organization trends and curriculum issues of second language programs; materials adaptation and development for oral and written discourse; innovations in L2 curricula. Prerequisite: ENGL 281 or C I 450.

447, 647 CURRICULUM DEVELOPMENT IN VOCATIONAL AND INDUSTRIAL EDUCATION (3+0) 3 credits
Research and curriculum studies dealing with content and procedures of the vocational, technical and industrial education program. Prerequisite: C I 427.

448, 648 CURRICULUM DEVELOPMENT IN ECONOMICS EDUCATION (3+0) 3 credits
Recent curriculum developments in economics education, review of pertinent literature, and development of techniques for imparting basic concepts of economics. Prerequisite: C I 421 or 463. Meets new teacher education certification requirements.

449, 649 CURRICULUM DEVELOPMENT IN ENVIRONMENTAL EDUCATION (1+0 per credit) 2 or 3 credits
Development of the school curriculum in the area of environmental education. Special emphasis is given to school and school-camp programs. Activities for promoting the acquisition of environmental concepts are demonstrated. Prerequisite: 6 credits of science.

450 SECONDARY SCHOOL PRACTICUM (2+1) 3 credits
General methods with field experience in the high school. Prerequisite: C I 350.

458, 658 THE MICROCOMPUTER AS A TOOL (2+3) 3 credits
Advanced applications of educational tool software such as word processors, data base managers, spreadsheets and graph packages. Prerequisite: C I 290, 432.

459 PRACTICUM IN VOCATIONAL EDUCATION 1 to 3 credits *S/U only*
Coordinated work-study programs in industry or government. Written progress reports are prepared periodically. Maximum of 6 credits.

461, 661 ADVISING VOCATIONAL STUDENT ORGANIZATIONS (3+0) 3 credits
Organizing and advising the activities and programs of the student organizations associated with various vocational programs. Prerequisite: C I 230.

462, 662 PHILOSOPHY OF VOCATIONAL EDUCATION (3+0) 3 credits
Philosophical bases of the theory and practice of vocational education in secondary and post-secondary schools. Interrelationship of vocational and academic programs. Prerequisite: C I 230.

463 SOCIAL STUDIES IN THE ELEMENTARY SCHOOL (2+3) 3 credits
Teaching content and procedures for the social studies in elementary school classrooms. Development of instructional materials and techniques. Prerequisite: preprofessional standing in the College of Education.

464 MATHEMATICS IN THE ELEMENTARY SCHOOL (2+3) 3 credits
Mathematical and psychological bases for scope, sequence and appropriate instructional strategies in elementary school mathematics. Prerequisite: education major.

465 SCIENCE IN THE ELEMENTARY SCHOOL (2+3) 3 credits
Materials, procedures, classical techniques in the teaching of science to children, K-6. Public school practicum reinforces the campus based instruction. Prerequisite: preprofessional standing in the College of Education.

466 TEACHING OF ELEMENTARY LANGUAGE ARTS AND LITERATURE (3+3) 4 credits
Language needs of children with emphasis on written expression, language skills, speaking and listening. Language development as related to individual and cultural differences. Content and procedures for teaching language arts and children's literature and integrating literature of all groups in the total elementary school curriculum. Prerequisite: preprofessional standing in the College of Education.

467, 667 TEACHING WRITING THROUGHOUT THE CURRICULUM, K-12 (1+0 per credit) 1 to 4 credits
Focus on writing for learning in all subject areas and at all grade levels. Introduction to current practices in the teaching of writing as well as frequent writing by participants in the course.

468 READING AND LANGUAGE ARTS IN LOWER ELEMENTARY GRADES (3+3) 4 credits
Learning and instruction in reading, writing, oral language, and literature for the primary grades. Includes planning and teaching lessons in public school classrooms. Prerequisite: preprofessional standing in the College of Education.

469 READING AND LANGUAGE ARTS IN UPPER ELEMENTARY GRADES (3+3) 4 credits
Learning and instruction in reading, writing, oral language and literature for the intermediate grades. Prerequisite: preprofessional standing in the College of Education.

470, 670 AUGMENTATIVE/ALTERNATIVE COMMUNICATION (3+0) 3 credits
Assessing, designing, and implementing augmentative communication programs for individuals with severe communication impairments.

471, 671 ASSESSMENT FOR SPECIAL EDUCATION TEACHERS (3+0) 3 credits
Methods for assessing handicapped children: motor, perceptual, academic language, self help skills, both formal and informal. Interpretation of assessment information and application to program needs. Prerequisite: C I 310 or 409.

472, 672 PROGRAM DEVELOPMENT IN VOCATIONAL EDUCATION (3+0) 3 credits
Development of programs in all areas of vocational education. Includes planning processes, community surveys, involving business and industry, and needs assessments. Prerequisite: junior standing.

474, 674 CATALOGING AND ORGANIZATION OF LIBRARY MATERIALS (3+0) 3 credits
Cataloging of books and other library materials. Includes practice in working with Dewey and Library of Congress "classification systems," principles of entry and cross referencing and organization of periodicals. Prerequisite: C I 301 or equivalent.

475, 675 SUPERVISED LIBRARY PRACTICE (0+2 per credit) 1 to 4 credits
Opportunities for supervised library practice under the direction of a professionally trained librarian in a school situation. Prerequisite: C I 301, 407, 408, 474, 476 or equivalent.

476, 676 ADMINISTRATION OF THE SCHOOL LIBRARY (3+0) 3 credits
Includes functions of school library. Relationship of library to school's total instructional program. Preparation of library budget. Other problems of library administration. Prerequisite: C 1301, 407, 408, 474 or equivalent.

477, 677 NONPRINT MATERIALS IN THE SCHOOL LIBRARY (3+0) 3 credits
Selection, acquisition, organization, storage and maintenance of films, filmstrips, recordings, pictures, maps, charts, computer software/courseware and realia in libraries and media centers. Prerequisite: C I 301 or equivalent.

480, 680 INDEPENDENT STUDY IN CURRICULUM AND INSTRUCTION (0+2 per credit) 1 to 3 credits
Action or library research in an appropriate area of curriculum and instruction. Maximum of 6 credits. Prerequisite: C I 440 or other curriculum course.

481, 681 SPECIAL PROBLEMS IN CURRICULUM AND INSTRUCTION (1+0 per credit) 1 to 6 credits
Specialized instruction designed to develop depth in understanding of a current education problem of the inservice teacher. Maximum of 12 credits, only 6 of which may be applied toward any degree. Prerequisite: C I 440 or other curriculum course.

482, 682 FIELD STUDIES IN CURRICULUM AND INSTRUCTION (1+0 per credit) 2 or 3 credits
Intensive study on organization and interpretation of data relative to selected problems such as curriculum development, parent-teacher relations, grouping of pupils. Maximum of 12 credits. Prerequisite: C I 440 or other curriculum course.

483, 683 SPECIAL PROJECT WORKSHOP IN CURRICULUM AND INSTRUCTION (1+0 per credit) 1 to 3 credits
Emerging problems in curriculum and instruction. Maximum of 12 credits.

484, 684 WORKSHOP IN VOCATIONAL EDUCATION (1+0 per credit) 1 to 6 credits
Modern developments in vocational and technical education programs; local vocational education and administration and supervision, agriculture, home economics, trades and industries, business and office occupations, health occupations, technical occupations, marketing and distributive occupations and vocational guidance. Maximum of 6 credits.

486, 686 WORKSHOP IN SCHOOL LIBRARY PROBLEMS (2+0) 2 credits
Problems pertaining to administration and operation of a school library. Discussed from point of view of the teacher-librarian. Prerequisite: C I 301, 407, 408, 474 or equivalent.

487, 687 SPECIAL TOPICS 1 to 3 credits *S/U only*
Specialized instruction designed to develop breadth of understanding in current curriculum and instruction topics for elementary, secondary and special education teachers. Maximum of 6 credits.

488, 688 CURRICULUM INTEGRATION: METHODOLOGY AND APPLICATIONS (2+3) 3 credits
Techniques for integrating computing activities into the general curriculum. Emphasis on the interrelationship between computers and the curriculum. Prerequisite: C I 290, 432.

489, 689 SPECIAL TOPICS IN EDUCATIONAL COMPUTING (1+3) 2 credits
Specialized instruction in educational computing. Topics may include authoring systems, programming, critical thinking and computers, special education applications, graphics, word processing and creative writing, etc. Prerequisite: C I 290, 432.

490, 690 MICROCOMPUTER COURSEWARE DESIGN (2+3) 3 credits
Introduction to instructional design of courseware in education and microcomputer programming. Emphasis on principles of courseware development and evaluation and an understanding of microcomputer commands and language. Prerequisite: C I 280 or equivalent.

491, 691 PRODUCTION AND DESIGN OF MEDIA MATERIALS (3+0) 3 credits
Preparation and use of graphics in instruction. Design and presentation of materials for slides, transparencies, models and exhibits. For teachers and librarians. Prerequisite: E L 101 or equivalent

492, 692 PHOTOGRAPHY FOR TEACHERS (2+3) 3 credits
Emphasizes fundamental photographic processes in education including film development, black and white enlarging, black and white and color slide development, lighting arrangements, portrait procedures, photographic displays, technical and operational lab aspects of the field. Prerequisite: E L 101 or equivalent.

493, 693 AUDIOVISUAL METHODS IN TEACHING (3+0) 3 credits
For both elementary and secondary students. Principles and application of both projected and nonprojected materials in audiovisual education. Prerequisite: E L 101 or equivalent.

494, 694 EDUCATIONAL MOTION PICTURE PRODUCTION (3+0) 3 credits
Idea development, research, planning and production of instructional motion pictures. Script writing, filming, editing and sound systems and applications, supervision of budget, personnel and content during film preparation. Prerequisite: C I 493 or equivalent.

495, 695 PRACTICUM IN EDUCATIONAL MEDIA (0+2 per credit) 1 to 3 credits
Supervised experiences in designing, developing and evaluating instructional media for specific teaching objectives. Involves working in the Learning and Resource Center. Prerequisite: C I 493 or equivalent.

496 EDUCATION FOR A CHANGING WORLD (3+0) 3 credits
Development and future of public education in the U.S. Critical examination of problems faced by contemporary schools serving diverse student populations.

497, 697 COOPERATIVE VOCATIONAL EDUCATION PROGRAMS (3+0) 3 credits
Role of cooperative vocational programs, organization, and implementation. Prerequisite: C I 230.

498, 698 SECOND LANGUAGE ACQUISITION IN SCHOOL (3+0) 3 credits
Theoretical foundations of classroom interaction and second language acquisition. Providing for real oral and written discourse in a second language. Prerequisite: ENGL 281 or C I 450.

505 PROFESSIONAL DEVELOPMENT (1+0 per credit) 1 to 3 credits *S/U only*
Involvement in educational conferences dealing with current issues, trends, and developments in education. Not applicable toward a degree program.

550 INTERNSHIP SEMINAR (2+0) 2 credits *S/U only*
Examination of the experiences, concerns, and professional growth occurring during the supervised internship: (a) elementary education, (b) special education and dual elementary/special education. Corequisite: C I 551.

551 SUPERVISED INTERNSHIP (0+3 per credit) 12 to 16 credits
(a) Elementary education, (b) special education, (c) secondary education, (d) dual elementary/special education, (e) dual secondary/special education.

602 READING AND LANGUAGE ARTS IN THE LOWER ELEMENTARY GRADES (2+3) 3 credits
Advanced work in developmental reading including new developments, techniques and methods which are related to the primary grades. Prerequisite: C I 300.

603 READING IN THE UPPER ELEMENTARY GRADES (2+3) 3 credits
Advanced work in development reading for the reading teacher and the subject-matter teacher; including new developments, techniques and methods which are related to the upper elementary grades. Prerequisite: C I 300.

605 LITERACY INSTRUCTION; INDIVIDUAL AND SMALL GROUP (3+3) 4 credits
Apprentice teaching in center for learning and literacy; emphases on diagnostic teaching, small group instruction, corrective and remedial techniques, and applications in the classroom. Prerequisite: C I 300.

611 PHYSICAL AND MULTIPLE DISABILITIES (3+0) 3 credits
Definitions, classification, etiology, and treatment of individuals with disabilities such as cerebral palsy, mental retardation, spina bifida, and epilepsy. Prerequisite: C I 310 or 409.

612 INSTRUCTION IN SEVERE BEHAVIOR DISORDERS (3+0) 3 credits
Behavior and learning management and program development for students with severe behavior disorders, including autism. Prerequisite: C I 311.

614 PROGRAM/BEHAVIOR MANAGEMENT IN SPECIAL EDUCATION (3+0) 3 credits
Developing, implementing and evaluating special education consultation, resource and self-contained programs. Assessment and intervention into problem behaviors. Prerequisite or corequisite: C I 313, 314, 315.

621 TEACHING READING TO OLDER STUDENTS (3+2) 3 cr
Emphasis on diagnostic teaching, instruction, special needs, an lated areas of reading, writing and spelling development. (a) C and remediation, (b) diagnosis. Prerequisite: C I 468, 469, 604.

623 FOUNDATIONS OF EARLY CHILDHOOD SPECIAL EDU (3+0) 3 credits
Introduction to special education programs for children from bi five with handicaps. History, legal foundation and service deliver Prerequisite or corequisite: C I 310.

624 INSTRUCTION OF CHILDREN WITH SPECIAL NEEDS; TO TWO (2+0) 2 credits
Curriculum developments and instructional strategies for teachin and toddlers with disabilities. Includes a practicum. Prereq corequisite: C I 310

625 INSTRUCTION OF CHILDREN WITH SPECIAL NEEDS; THREE TO FIVE (2+0) 2 credits
Curriculum developments and instructional strategies for teaching yc dren with disabilities. Includes a practicum. Prerequisite or corequisit

663 VOCATIONAL SAFETY TEACHING STRATEGIES (1+0 per credit) 1 to 6 credits
Philosophical and applied investigation of the teaching strategies education programs in vocational education.

666 FOUNDATIONS OF LITERACY (3+0) 3 credits
Intended for practicing teachers. Contemporary theoretical and p cal issues in literacy, preschool-secondary. Comprehension, wor edge, social/environmental/psycholinguistic factors in reading ing development.

700 SUPERVISION OF STUDENT TEACHING (1+0 per credit) 1 to 3 credits
Designed primarily for public school teachers who are functi cooperating teachers in the student teaching program.

701 FIELD WORK AND CLINICAL PRACTICE IN READINC (1+5) 3 credits
Practice in reading with emphasis upon clinical diagnosis, prog remediation. Maximum of 6 credits. Prerequisite: C I 606.

702 READING CLINIC (1+5) 3 credits
Administration of the reading clinic. Observation, planning and ment of the pupil's diagnosis and remediation as well as staffing a conference. Maximum of 6 credits. Prerequisite: C I 701.

705 ADVANCED HUMAN GROWTH AND DEVELOPMENT (3+0) 3 credits
Emphasis on implications of human growth and developmer curriculum. Application and examples directed to the teaching p Prerequisite: C I 270 or equivalent.

706 EDUCATIONAL USES OF TELEVISION (3+0) 3 credits
Analysis of trends in utilization of television and video tape recordings production, evaluation and methods of teaching with these media.

707 MODERN TECHNOLOGY IN EDUCATION (3+0) 3 credi
New and emerging technological advances in multimedia systems tion. Included are programmed instruction, audio and visual media an nication labs. Emphasis on current research and experimentation in

708 ADVANCED MEDIA DESIGN AND PRODUCTION (3+0)
Comprehensive multi-media modules designed around individ sen topics and produced in class. Emphasis placed on quality pr organization, continuity and effective communication of topic. site: C I 491, 691 or equivalent.

710 ASSESSMENT OF THE SEVERELY HANDICAPPED (3+0)
Assessment of the intellectual, motor, adaptive and behavioral fu of severely handicapped children during various developmental Includes practicum tailored to one area of severity. Prerequisite: C

711 ASSESSMENT OF STUDENTS WITH MILD HANDICAP (3+0) 3 credits
Strategies for assessing children with mild handicaps: motor, pe academic, language, and daily living skills. Interpretation of as

information and application to program needs. Prerequisite: C I 311. Corequisite: C I 748.

712 ASSESSMENT OF INFANTS/PRESCHOOLERS WITH SPECIAL NEEDS (3+0) 3 credits
Assessment of cognitive, physical, communication, social, and self-help skills of infants, toddlers, and young children with special needs. Includes assessment practicum. Prerequisite: C I 310.

713 ORGANIZATION OF PROGRAMS FOR EXCEPTIONAL CHILDREN (3+0) 3 credits
Problems of organization of public school programs for exceptional children. Involves the planning and programs and facilities for the exceptional child in public and private institutions. Prerequisite: C I 413, 453.

714 CAREER AND COMMUNITY LIFE FOR SEVERELY HANDICAPPED (3+0) 3 credits
Theoretical and applied study of the self help, prevocational, career and community life needs of the moderate to profoundly handicapped, including the personal and community services available to help in their transition. Prerequisite: C I 417.

715 EDUCATION OF THE GIFTED (1+0 per credit) 2 or 3 credits
Consideration of educational programs and procedures to develop stimulating environments for the maximum development of gifted or superior children. Specific cases and demonstration. Prerequisite: C I 310.

716 TEACHING STUDENTS WITH SEVERE LEARNING DISABILITIES (3+0) 3 credits
Principles, methods and materials appropriate for instruction of the severely learning disabled students.

717 BEHAVIOR DISORDERS (3+1) 3 credits
Survey of the field of behavior disorders including characteristics, contributing factors, and an overview of interventions in school and related settings.

718 TRENDS AND ISSUES IN SPECIAL EDUCATION (3+0) 3 credits
Study of research pertaining to physical, mental, emotional and social characteristics of exceptional children. Emphasis on the implications of research for program development. Prerequisite: C I 413.

719 SEVERE LEARNING DISABILITIES (3+0) 3 credits
Survey of the field of learning disabilities including characteristics, contributing factors, and an overview of interventions in school and related settings.

720 ADVANCED METHODOLOGY (3+0) 3 credits
Study and evaluation of innovative teaching in elementary and secondary schools. Prerequisite: C I 451, 453 or 457 and a curriculum course.

721 EVALUATION OF CLASSROOM LEARNING (3+0) 3 credits
Construction and use of classroom tests, performance instruments, and other methods of evaluating learning. Prerequisite: C I 451, 453 or 457.

722 ADVANCED BEHAVIOR MANAGEMENT IN SEVERE HANDICAPS (3+0) 3 credits
Skills in management of behavior problems characteristic of individuals with severe handicaps through functional analysis and management of variables influencing behavior. Prerequisite: PSY 406, 606.

726 BILINGUAL AND IMMERSION EDUCATION (3+0) 3 credits
Basic principles of bilingualism; research and practice in immersion and bilingual education programs; sociocultural perspectives on bilingual education.

728 PROBLEMS IN TEACHING (1+0 per credit) 1 to 6 credits
Research projects required of each student in the field of special interest. (a) Social studies, (b) English, (c) science, (d) mathematics, (e) business education, (f) foreign language, (g) industrial education, (h) bilingual-bicultural education, (j) agricultural education. Maximum of 6 credits. Prerequisite: CEP 700.

730 WORKSHOP IN AGRICULTURAL EDUCATION (1+0 per credit) 1 to 6 credits
Intensive study of a technical phase of (a) agricultural education, (b) industrial mechanics. Maximum of 6 credits.

740 ELEMENTARY SCHOOL CURRICULUM (3+0) 3 credits
Curriculum principles as found in the historical, philosophical, sociological and psychological foundations. Emphasis on methods and techniques that meet the needs of the child. Prerequisite: C I 640 or equivalent.

741 ADVANCED CURRICULUM DESIGN IN EARLY CHILDHOOD EDUCATION (3+0) 3 credits
Research and curriculum studies in content and procedures. Curriculum design projects undertaken. Prerequisite: C I 705.

742 FOUNDATIONS IN ELEMENTARY EDUCATION (3+0) 3 credits
Philosophical, historical, sociological and psychological foundations of elementary education. Includes integrated curriculum, unit teaching, inquiry and discovery, human relations in the classroom. Prerequisite: C I 740.

744 RESEARCH APPLICATIONS IN CURRICULUM AND INSTRUCTION (3+0) 3 credits
Analysis of methods of research appropriate to curriculum and instruction. Application of these methods to a specific problem. Prerequisite: minimum of 9 graduate credits in education.

746 SECONDARY SCHOOL CURRICULUM (3+0) 3 credits
Study and discussion of development and improvement of curriculum practices, with special stress upon working out procedures suited to this area. Prerequisite: C I 440 or other curriculum course.

748 ADVANCED CURRICULUM DESIGN FOR EXCEPTIONAL CHILDREN (3+0) 3 credits
Recent developments in curriculum design for exceptional children including consideration of programmed instruction and operant procedures. Corequisite: C I 711.

750 INTERNSHIP IN CURRICULUM AND INSTRUCTION (0+2 per credit) 3 to 6 credits
Application of course content included in C I 742 or 746 in the classroom under the supervision and direction of local school system personnel and university staff members. Prerequisite: C I 742 or 746. (Same as AGED 763.)

753 SUPERVISION AND FIELD WORK WITH EXCEPTIONAL CHILDREN (0+3 per credit) 3 to 6 credits
Practicum in (a) mental retardation, (b) learning disabilities, (c) gifted, (d) behavior disorders, (e) early childhood special education. Maximum of 12 credits. Prerequisite: C I 413, 453, 748.

755 SUPERVISED TEACHING IN EDUCATION (1+1 per credit) 2 or 3 credits
Directed experience in college teaching consisting of the preparation, presentation and testing of material for undergraduate students in lectures, discussion sections or labs. Prerequisite: undergraduate major in the subject or equivalent.

770 SEMINAR IN EARLY CHILDHOOD EDUCATION (3+0) 3 credits
Observation, study and research in early childhood education. Problems of organization, administration and evaluation of programs. Prerequisite: C I 705.

771 SEMINAR IN ELEMENTARY EDUCATION 1 to 6 credits
Problems of organization, administration, curriculum, methodology, evaluation, public relations. Review of research procedures. (a) Curriculum, (b) advanced methods, (c) diagnosis and remedial, (d) evaluation, (e) administration and supervision, (f) research. Prerequisite: certification for teaching.

772 SEMINAR IN SPECIAL EDUCATION 1 to 6 credits
Consideration of special problems in organization, administration, curriculum, construction of materials, methodology and evaluation: (a) severe mentally retarded, (b) physically handicapped, (c) gifted or rapid learner, (d) emotionally handicapped, (e) culturally deprived, (f) severe learning disabilities.

773 SEMINAR IN SECONDARY EDUCATION (1+0 per credit) 1 to 6 credits
Study of a topic or topics of current importance in secondary curriculum, methodology, evaluation and materials. Maximum of 6 credits. Prerequisite: certification for teaching.

774 SEMINAR IN VOCATIONAL AND INDUSTRIAL EDUCATION (3+0) 3 credits
Analysis of the topic and vocational, technical, and industrial education pertaining to curriculum, methodology or evaluation. Maximum of 6 credits.

776 SEMINAR IN MULTICULTURAL EDUCATION (1+0 per credit) 1 to 6 credits
Detailed analysis of selected aspects of recent developments in methodology and pedagogical materials designed to instruct Black American, Native American, Spanish-speaking American, Asian American and other minority culture students. Maximum of 6 credits. Prerequisite: C I 420 or 620.

778 SEMINAR IN TEACHING WRITING (1+0 per credit) 1 to 6 credits
(See ENGL 778 for description.)

791 SPECIAL TOPICS (0+1) 1 credit
Selected problems related to curriculum and instruction: (a) teaching problems, (b) curriculum, (c) supervision, (d) programmed instruction, (e) elementary, (f) junior high school, (g) senior high school, (h) area problems, (j) research. Maximum of 6 credits. Prerequisite: C I 440 or equivalent.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 12 credits

Inactive Courses
349 TEACHING OF SECONDARY MUSIC (2+0) 2 credits
371 UNDERSTANDING CHILD BEHAVIOR (1+0 per credit) 2 or 3 credits
374 HEALTH INSTRUCTION METHODS FOR SECONDARY TEACHERS (2+0) 2 credits
428 GENERAL PRINCIPLES OF SECONDARY EDUCATION (3+0) 3 credits
460, 660 ADULT EDUCATION (1+0 per credit) 1 to 6 credits
470, 670 ADVANCED STUDY OF PROBLEMS IN CHILD DEVELOPMENT (1+0 per credit) 2 or 3 credits

ECOLOGY, EVOLUTION AND CONSERVATION BIOLOGY (EECB)

701-702 RESEARCH ROTATION I, II (0+9) 3 credits
Intensive research experience in ecology, evolution, and conservation biology research methods. Written reports on each research project required.

790 SEMINAR (1+0) 1 credit *S/U only*
Topics of interest in ecology, evolution, and conservation biology. Prerequisite: ecology, evolution and conservation biology majors only. Maximum of 10 credits.

793 INDEPENDENT STUDY 1 to 6 credits
Prequisite: ecology, evolution and conservation biology majors only.

794 ECOLOGY, EVOLUTION AND CONSERVATION BIOLOGY COLLOQUIUM (1+0) 1 credit
Presentation of original research by visiting scientists, UNS faculty, and graduate students completing doctoral degrees. Maximum of 4 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

799 DISSERTATION 1 to 24 credits
For ecology, evolution and conservation biology majors only.

ECONOMICS (EC)

101 PRINCIPLES OF MACROECONOMICS (3+0) 3 credits
Introduction to the determination of levels of national income, employment and prices and the basic causes of fluctuations of these levels.

102 PRINCIPLES OF MICROECONOMICS (3+0) 3 credits
Introduction to the theory of relative prices; the allocation of productive resources among alternative uses in the production of national output and its distribution.

261 PRINCIPLES OF STATISTICS I (3+0) 3 credits
Probability and major probability distributions; sampling theory; descriptive statistics; measures of central tendency and dispersion; index figures; time series. Prerequisite: MATH 124 or equivalent.

262 PRINCIPLES OF STATISTICS II (3+0) 3 credits
Statistical inference, estimation, hypothesis testing; simple linear regression and correlations; analysis of the variance. Prerequisite: EC 261.

UPPER-DIVISION COURSES: Business majors must have satisfactorily completed the entire lower-division business core (see section on *Upper Division Courses* in the College of Business Administration section).

301 COMPARATIVE ECONOMIC SYSTEMS (3+0) 3 credits
Analysis of the economic institutions of capitalism and other economic systems. Prerequisite: EC 101, 102.

303 MONEY AND BANKING (3+0) 3 credits
Nature and functions of money, functions and history of banks, Federal Reserve System; monetary, theory and policy in relation to employment, growth and price levels. Prerequisite: EC 101, 102.

321 INTERMEDIATE PRICE THEORY (3+0) 3 credits
Analysis of the price mechanism and the determination of resource allocation, output composition and income distribution in a market economy. Prerequisite: EC 101, 102.

322 INTERMEDIATE INCOME THEORY (3+0) 3 credits
Analysis of income, output, employment, and price-level determination in a market economy. The role of fiscal and monetary, policy in promoting stability and growth. Prerequisite: EC 101, 102.

365 LABOR ECONOMICS (3+0) 3 credits
Theoretical materials relating to the economic analysis of labor problems and the descriptive materials relating to unionism and collective bargaining. Prerequisite: EC 101, 102.

367 COMPARATIVE LABOR MOVEMENTS (3+0) 3 credits
Analysis of labor movements of Europe and developing countries emphasizing the relationships between unions, political parties, and governments; the importance of collective bargaining and union structure. Prerequisite: EC 101, 102.

403, 603 MONETARY AND FINANCIAL ECONOMICS (3+0) 3 credits
Detailed analysis of the role played by money and monetary institutions in the determination of the general levels of output, employment and prices. Prerequisite: EC 303.

410, 610 SEMINAR IN SOCIAL ECONOMICS (3+0) 3 credits
Advanced analysis of current economic problems. Maximum of 6 credits. No topic may be repeated for credit.

411, 611 ECONOMIC AND SOCIAL ASPECTS OF GAMING AND GAMBLING (3+0) 3 credits
Analysis of topics relevant to gambling, including game strategies and oddsmaking, gambling behavior, economics of the gaming industry, compulsive gambling and gambling and the law.

431, 631 INTRODUCTION TO MATHEMATICAL ECONOMICS (3+0) 3 credits
Mathematical formulation of economic theory, with principal consideration given to the construction of deterministic models of economic behavior. Prerequisite: MATH 176; EC 321.

441, 641 INTRODUCTION TO ECONOMETRICS (3+0) 3 credits
Application of statistical techniques for the purpose of testing and explaining economic relationships; integration of economic theory, with observed economic phenomena. Useful for economic and business forecasting. Prerequisite: EC 101, 102, 262 or equivalent.

451, 651 PUBLIC FINANCE (3+0) 3 credits
Appraisal of the effects of government financial policies. Government expenditures, taxation, government borrowing and indebtedness and fiscal policy are considered. Prerequisite: EC 101, 102.

454, 654 INDUSTRIAL ORGANIZATION AND PUBLIC POLICY (3+0) 3 credits
Interrelationships between industrial structure, conduct and performance. Implications for public policy with an emphasis on antitrust law. Prerequisite: EC 101, 102.

456, 656 ECONOMICS OF GOVERNMENT REGULATIONS (3+0) 3 credits
Economic analysis of government intervention in a market economy, including antitrust policy, direct industry regulation and regulatory agencies such as OSHA and EPA. Prerequisite: EC 101, 102.

457, 657 LAW AND ECONOMICS (3+0) 3 credits
Examines economic efficiency implications and objectives of legal institutions and legal rulemaking; including common law, public regulation of the market and legal procedures. Prerequisite: EC 102.

458, 658 INTERNATIONAL ECONOMICS (3+0) 3 credits
Analysis of the theory, of international trade, balance of payments, commercial policies; international institutions and theory, of international economic integration. Prerequisite: EC 101, 102.

459, 659 FUTURE DEVELOPMENT (3+0) 3 credits
Introduction to the world's development problems such as population, food, scarcity of nonrenewable resources, growing inequality between nations and within nations, possible socioeconomic consequences of those problems. Prerequisite: EC 101, 102.

460 ECONOMIC INTEGRATION AND COMMON MARKETS (3+0) 3 credits
Analysis of various cases of economic integration including the European Common Market and the North American Free Trade Area. Prerequisite: EC 101, 102.

461 CHINESE ECONOMY (3+0) 3 credits
Historical examination of China's economic development, with a special emphasis on its varying development strategies, and its future prospects. Prerequisite: EC 101, 102.

463, 663 ECONOMIC HISTORY OF EUROPE (3+0) 3 credits
Economic and social background of European national and international development with emphasis upon the period 1500 to present. Prerequisite: EC 101, 102.

464, 664 ECONOMIC HISTORY OF THE UNITED STATES (3+0) 3 credits
Origin and development of economic institutions including industry,, agriculture, commerce, transportation, labor and finance. Analysis of the economic progress of the U.S. Prerequisite: EC 101, 102.

471, 671 URBAN ECONOMICS (3+0) 3 credits
Exploration of the foundation of urban economic theory and planning. Primary emphasis placed upon research into urban problems and policy formulation.

472, 672 REGIONAL ECONOMICS (3+0) 3 credits
Systematic analysis of the problems of economic growth and stability of subnational regions. Trade, location, interregional competition and structural economic analyses are considered. Prerequisite: EC 101, 102. (Same as AGEC 472.)

481, 681 HISTORY OF ECONOMIC DOCTRINES (3+0) 3 credits
Development of classical political economy; the orthodox tradition in political economy in the 19th century; the foundation of economic doctrine in the 20th century. Prerequisite: EC 101, 102.

490, 690 INDEPENDENT STUDY 1 to 3 credits
Independent study in selected topics. Maximum of 6 credits.

Graduate Standing is required as a prerequisite for all 700-level courses in the College of Business Administration.

703 ADVANCED MONETARY AND FINANCIAL ECONOMICS (3+0) 3 credits
Comprehensive and critical examination of monetary theories. Major topics include the quantity theory, liquidity preference theory, money markets and money in macroeconomic markets. Prerequisite: EC 322.

721 ADVANCED PRICE THEORY (3+0) 3 credits
Advanced analysis of production, pricing, resource allocation and income distribution. Prerequisite: EC 321.

722 ADVANCED INCOME THEORY (3+0) 3 credits
Advanced analysis of the determinants of national income and the price level. Theories of growth and fluctuations in the economic system. Prerequisite: EC 322.

731 QUANTITATIVE METHODS IN ECONOMICS (3+0) 3 credits
Selected topics in the uses of mathematics and statistics in economic analysis. Prerequisite: EC 262; MATH 176.

751 ECONOMICS OF THE PUBLIC SECTOR (3+0) 3 credits
Theory of local, state and federal expenditures and revenues. Economic effects of alternative policies and decision-making processes of the public sector are emphasized. Prerequisite: EC 451.

759 ECONOMIC GROWTH AND DEVELOPMENT (3+0) 3 credits
Economic, social and political factors in economic development with special emphasis on low income countries. Programs for accelerated development and problems of financing are considered. Prerequisite: EC 458. 459.

764 SEMINAR IN AMERICAN ECONOMIC HISTORY (3+0) 3 credits
Advanced analysis of trends in U.S. economic history, including the industrialization process, economic factors influencing the Civil War, the Great Depression and post-World War II economic growth. Prerequisite: EC 464.

765 SELECTED TOPICS IN LABOR ECONOMICS (3+0) 3 credits
Analysis of labor force concepts and measurements, labor markets and labor mobility, wage theory and collective bargaining and macroeconomic behavior of employment and earnings. Prerequisite: EC 365.

780 BUSINESS AND PUBLIC POLICY (3+0) 3 credits
(See B A 780 for description.)

781 SEMINAR IN ECONOMIC DOCTRINES (3+0) 3 credits
Development of the critical method in the study of economic doctrines. Prerequisite: EC 481.

793 INDEPENDENT STUDY 1 to 3 credits
Advanced study and research in selected topics. Maximum of 6 credits.

797 THESIS 1 to 6 credits

Inactive Courses
103 INTRODUCTION TO ECONOMIC EDUCATION (3+0) 3 credits
109 ECONOMIC GEOGRAPHY (3+0) 3 credits
200 ECONOMIC DEVELOPMENT OF WESTERN CIVILIZATION (3+0) 3 credits
208 ECONOMICS OF SOCIAL INCOME REPORTING (3+0) 3 credits
460, 660 AMERICAN ECONOMIC SYSTEMS (3+0) 3 credits
473, 673 BUSINESS FLUCTUATIONS AND FORECASTING (3+0) 3 credits
772 REGIONAL ECONOMICS (3+0) 3 credits

EDUCATION

See separate listings for:

Counseling and Educational Psychology (CEP)
Curriculum and Instruction (C I)
Educational Leadership (E L)

EDUCATIONAL LEADERSHIP (E L)

101 EDUCATIONAL EXPERIENCE I (3+0) 3 credits
Introduction to the basic philosophical, sociological, psychological, historical, legal and anthropological foundations of education. Prerequisite for upper-division courses in education. Meets state certification requirements in Nevada school law.

421, 621 EDUCATION IN DEVELOPING NATIONS (3+0) 3 credits
Interrelations of education with economic, political and social development in selected Latin American, African, Asian and Native American cultures. The foregoing enhances an individual's ability to identify materials and understand the methodologies essential to functioning appropriately in a multi-cultural context.

422, 622 SEMINAR IN EDUCATION IN DEVELOPING NATIONS (3+0) 3 credits
Intensive study of student-selected topics dealing with current policies for educational development in Latin America, Africa, Asia and Native American cultures. Prerequisite: E L 421, 621 or equivalent.

700 BASIC PRINCIPLES OF EDUCATIONAL ADMINISTRATION (3+0) 3 credits
Foundational course for graduate students interested in school administration. Treatment of the major areas of school operations.

701 ADMINISTRATION OF SCHOOL STAFF PERSONNEL (3+0) 3 credits
Recruitment, selection, placement of teachers; orientation of new teachers; staff participation in salary scheduling and other aspects of economic welfare of teachers; administrator-teacher relations; codes of ethics; merit rating; certification, tenure. Prerequisite: E L 700 or equivalent.

702 SCHOOL MANAGEMENT AND DECISION MAKING (3+0) 3 credits
Discussion of administrative theory and practice in the context of the school setting. Needs assessment, goal setting, planning and decision making will be examined.

703 ADMINISTRATION AND CURRICULUM IMPROVEMENT (3+0) 3 credits
Clarifies the role of the administrator in improving curriculum and instruction in public schools.

704 ADMINISTRATION OF THE JUNIOR AND COMMUNITY COLLEGE (2+0) 2 credits
Presents the principles, policies and procedures for organizing and administering the junior and community college.

705 SEMINAR IN ADMINISTRATIVE PROBLEMS (0+1 per credit) 1 to 4 credits
Provides opportunity for advanced students to select and analyze current problems and to develop proposed solutions to such problems. Current related issues discussed. Maximum of 4 credits. Prerequisite: E L 700, 702 or equivalent.

706 ADMINISTRATION OF SPECIAL PROGRAMS (3+0) 3 credits
Treatment is given to the administration and supervision of specific school programs such as guidance services, pupil personnel services, vocational-technical and special education. Prerequisite: E L 700, 702 or equivalent.

707 SEMINAR IN ADMINISTRATION OF HIGHER EDUCATION (1+0 per credit) 1 to 4 credits
Programming, staffing and organization of higher education institutions. Maximum of 4 credits.

709 THE ADMINISTRATOR AND COMMUNITY COLLEGE CURRICULUM (3+0) 3 credits
Treatment is given to the unique nature of the curriculum of the community college and the justification of such offerings. Prerequisite: E L 707.

710 THE PRINCIPALSHIP (3+0) 3 credits
Gives specific treatment to the administration of the school unit at the elementary, middle school, junior high and senior high levels. Prerequisite: E L 700, 702 or equivalent.

711 ARTICULATION OF POSTSECONDARY EDUCATION CURRICULA (3+0) 3 credits
Emphasis is placed on the necessity for continuity of the curriculum of secondary education, the community college and colleges and universities. Prerequisite: E L 704, 707.

712 HISTORY OF EDUCATION (3+0) 3 credits
Development of educational thought and practice in Western civilization.

713 HISTORY OF EDUCATION IN THE UNITED STATES (3+0) 3 credits
Factors and conditions which have been influential in the shaping of educational thought, ideals, theories and practices of current American education.

715 TEACHER EVALUATION (3+0) 3 credits
Techniques of evaluating teachers for growth and accountability. Review current evaluation methodologies, teaching research, inservice and staff development related to teacher growth. Prerequisite: E L 700, 702 or equivalent.

716 SUPERVISORY THEORIES (3+0) 3 credits
Developmental supervision and corresponding supervisor techniques appropriate for teacher professional and cognitive growth. Classroom observation instruments and administrative communication skills are stressed.

718 SOCIAL FOUNDATIONS OF EDUCATION (3+0) 3 credits
Emphasizes the changing role of our educational system in meeting mands of our post-industrial society.

719 PHILOSOPHY OF EDUCATION (3+0) 3 credits
Examination and analysis of philosophical issues in education with p ticular reference to noted traditional and contemporary philosoph Importance of developing a consistent personal philosophy of educati

720 ADVANCED PHILOSOPHY OF EDUCATION (3+0) 3 credits
Critical analysis and evaluation of philosophies of education. Implicati for practice of progmatism, logical empiricism and existentialism. Pre uisite: E L 719 or equivalent.

721 COMPARATIVE EDUCATION IN DEVELOPED NATIONS (3+0) 3 credits
Comparative study of national ideologies and educational philosoph and systems of education with emphasis upon Great Britain, France, Union of Soviet Socialist Republics, Peoples Republic of China and Jap Prerequisite: E L 421 or 621, 422 or 622 or in-depth cross-cultural experie

722 CRUCIAL ISSUES IN EDUCATION (3+0) 3 credits
Problem analysis of timely issues in education analyzing their legal, hist cal, sociological and philosophical dimensions with focus on problem continuing concern. Prerequisite: CEP 700.

725 PUBLIC SCHOOL FINANCE (3+0) 3 credits
Study of local, state and federal revenue sources used to support pu education. State aid, taxation and current issues are emphasized. Prere site: E L 700, 702 or equivalent.

726 SCHOOL BUSINESS MANAGEMENT (3+0) 3 credits
The administration of school insurance, transportation, food servi purchasing, inventory control, state and federal accounting systems budgeting procedures. Prerequisite: E L 725 or equivalent.

727 SEMINAR IN SCHOOL FINANCE (0+1 per credit) 1 to 4 credits
Specific problems related to financing public education on the local, s and national levels. Prerequisite: E L 725 or 726.

730 THE EDUCATIONAL PLANT (3+0) 3 credits
Specialized classroom treatment to the theoretical and practical proced in developing educational specifications for the school plant and plann the school survey. Prerequisite: E L 730 or equivalent.

731 SCHOOL SURVEYS AND EDUCATIONAL FACILITIES (3+0) 3 credits
Master planning for school districts involving the details of programm site selection, construction, equipment and student enrollment projecti Laboratory work. Prerequisite: E L 700, 702 or equivalent.

734 SPECIAL EDUCATION LAW (3+0) 3 credits
Case law with special consideration given to litigation relating to ha capped students and school officials. Prerequisite: E L 700 or equivale

735 THE LAW OF PUBLIC EDUCATION (3+0) 3 credits
Examination of statutory and case law with special consideration give litigation relating to teachers and students. Emphasis on due pro requirements. Prerequisite: E L 700, 702 or equivalent.

736 SEMINAR IN SCHOOL LAW (0+1 per credit) 1 to 4 credits
Special problems related to the legal aspects of education on the local, s and federal levels. Prerequisite: E L 735, 740.

740 THE LAW OF PUBLIC EDUCATION II (3+0) 3 credits
Legal authority of the public school with special consideration give legal issues facing boards of education. Topics include: tort liability, gion and censorship. Prerequisite: E L 700, 702 or equivalent.

741 POLITICS POLICY AND ETHICS (3+0) 3 credits
Emphasis on national, state and local political structures and proce including the origin and appraisal of school policies. Key constituenci be discussed. Prerequisite: E L 700, 702 or equivalent.

742 ADMINISTRATION OF VOCATIONAL EDUCATION PROGRAMS (3+0) 3 credits
Responsibilities of the administrator and directors of vocational and t nical programs in the public schools and community colleges.

743 PUBLIC RELATIONS FOR SCHOOLS (3+0) 3 credits
Principles and practices pertaining to public relations, including the role of professional and classified personnel as well as the public.

745 SEMINAR IN ADMINISTRATION OF SPECIAL EDUCATION (1+0 per credit) 1 to 4 credits
Specific problems related to the administration of programs for handicapped children. Topics include finance, organization, public policy, program evaluation, supervision and conflict mediation. Prerequisite: E L 700, 734; or equivalent. Maximum of 4 credits.

746 COORDINATION OF COOPERATIVE EDUCATION PROGRAMS (3+0) 3 credits
The administrator has leadership responsibilities in developing an understanding of the philosophy underlying cooperative education, which includes business and office education, distributive education, home economics, industrial education, etc. Prerequisite: E L 742.

752 SEMINAR IN COLLEGE TEACHING (1+0 per credit) 2 to 5 credits
Topics include: (a) methods of teaching; (b) theories of learning; (c) modern technology in teaching; (d) evaluation and measurements; (e) social foundations of higher education. Prerequisite: recommendation by chair of student's major.

753 SEMINAR FOR NEW AND CURRENT SCHOOL ADMINISTRATORS (1+0 per credit) 1 to 4 credits *S/U only*
In-service assistance with a focus on problem resolution and discussion related to the current literature. Maximum of 4 credits.

791 SPECIAL TOPICS (0+1 per credit) 1 to 4 credits
Literature review and analysis of assigned topics focusing on contemporary and future issues in school administration and other issues related to the school setting. Prerequisite: E L 700, 702 or equivalent.

792 SPECIAL PROBLEMS (1+0 per credit) 1 to 4 credits
Individual or group research projects in various areas of school administration and issues related to the public school setting. Prerequisite: E L 700, 702 or equivalent.

793 INDEPENDENT STUDY (0+1 per credit) 1 to 4 credits
Supervised readings with conferences. Maximum of 4 credits.

794 PROFESSIONAL PAPER 3 credits *S/U only*

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

798 INTERNSHIP (0+2 per credit) 3 to 9 credits
Practical experience in the student's major field under close supervision and direction of local school system personnel and university staff members. Experience areas selected by student, adviser and department chairman. Prerequisite: approval of student's advisory committee.

799 DISSERTATION 1 to 12 credits

ELECTRICAL ENGINEERING (E E)

198, 298, 398, 498 COOPERATIVE TRAINING REPORT (1+0) 1 credit
Preparation of written reports based on cooperative program assignments. Required of all students in cooperative programs during the summer or other semesters when on work assignments with cooperative program employers.

200 NETWORK ANALYSIS LABORATORY (0+3) 1 credit
Introduction to electrical engineering basic laboratory procedures and equipment. Corequisite: E E 201.

201 INTRODUCTION TO NETWORK ANALYSIS (3+0) 3 credits
Introduction to analysis methods and network theorems used to describe operation of electric circuits. Includes resistive, capacitive and inductive components in DC and AC circuits. Corequisite: E E 200 for electrical engineering majors. Prerequisite: PHYS 202.

202 MATERIALS IN ELECTRICAL ENGINEERING (2+0) 2 credits
Properties, tests and uses of materials in electrical engineering. Structural materials, conductors, insulators, semiconductors, magnetic materials. Prerequisite: CHEM 101. Corequisite: PHYS 202, MECH 241.

231 COMPUTERIZED MATRIX ALGEBRA (3+0) 3 credits
Engineering programming applications with emphasis on vector space, its basis and transformations and computer solutions of linear equations. Introduction to FORTRAN. Prerequisite: C S 183.

290 ELECTRICAL PROJECTS LABORATORY (0+3 or 6) 1 or 2 credits
Offers the opportunity to undertake an independent project of the student's own interest, upon individual arrangement with a staff member. Maximum of 4 credits.

301 CIRCUITS AND SYSTEMS (3+0) 3 credits
Time domain and Laplace transform methods for analysis of electric circuits. Applications to passive and active filters. Modeling, analysis and simulation of circuits and systems. Prerequisite: E E 201; MATH 285. Corequisite: E E 231.

320 ANALOG ELECTRONICS LABORATORY (0+3) 1 credit
Analysis of discrete and integrated analog electronic components. Design, construction and testing of analog electronic circuits. Corequisite: E E 321.

321 INTRODUCTION TO ELECTRONICS (3+0) 3 credits
Study of active devices, their behavior in analog and digital circuits. Introduction to integrated circuits as building blocks in digital and analog circuits. Corequisite: E E 301, 320.

330 COMPUTER LOGIC LABORATORY (0+3) 1 credit
Basic digital electronics concepts, design and development of a microprocessor system with application in hardware and software. Corequisite: E E 336. Prerequisite: E E 333.

333 COMPUTER LOGIC DESIGN (3+0) 3 credits
Corequisite for all electric engineering majors: E E 330. (See C S 333 for description.)

336 MICROPROCESSORS (3+0) 3 credits
Elementary microprocessor principles found in electrical engineering applications with emphasis on 8 bit microprocessors. Hardware, software adn interface areas analyzed. Corequisite: E E 330. Prerequisite: E E 333. (Same as C S 336.)

351 ELECTRIC AND MAGNETIC FIELDS (3+0) 3 credits
Vector analysis approach to electric and magnetic fields and of Maxwell's equations. Prerequisite: E E 201; PHYS 202 and Differential Equations.

361 POWER SYSTEM FUNDAMENTALS (3+0) 3 credits
Basic power system analytical concepts, three-phase systems, phasers, impedance, steady-state network analysis, normalization, transmission lines, transformers, synchronous machines. Prerequisite: E E 201, 231. Corequisite: E E 301.

380 CONTROL SYSTEMS LABORATORY (0+3) 1 credit
Modeling and simulation of physical engineering systems. Implementation and testing of control system designs. Corequisite: E E 386.

381 SIGNALS AND SYSTEMS (3+0) 3 credits
Frequency and time domain analysis of continuous and discrete signals and systems: orthogonal functions and Fourier series; continuous and discrete Fourier transforms; the z-transform; and introduction to modulation and modulating systems. Prerequisite: E E 301.

386 CONTROL SYSTEMS (3+0) 3 credits
Analysis and modeling of engineering systems including input-output and state-variable descriptions. Root locus and frequency domain methods. Introduction to classical control design. Prerequisite: E E 301; MECH 241. Corequisite: E E 380.

390 ELECTRICAL PROJECTS LABORATORY (0+3 or 6) 1 or 2 credits
Independent project of the student's own interest, upon individual arrangement with a staff member. Maximum of 4 credits.

422, 622 INTEGRATED ELECTRONICS (3+0) 3 credits
Examines circuit design and integrated circuit use with emphasis on operational amplifiers, active filters and analog applications. Prerequisite: E E 321.

423, 623 INTEGRATED CIRCUIT ENGINEERING (3+0) 3 credits
Introduction to the design and fabrication of integrated circuits. Factors limiting integrated circuits specifications are considered and new technologies are studied. Prerequisite: E E 321.

424, 624 HYBRID INTEGRATED CIRCUIT ENGINEERING (2+3) 3 credits
Introduction to the design and fabrication of thick and thin film integrated circuits. Design, processing and applications are considered and new techniques are studied. Prerequisite: E E 321.

426, 626 BIOMEDICAL INSTRUMENTATION (2+2) 3 credits
(See CMPP 426, 626 for description.)

427, 627 DIGITAL ELECTRONICS (3+0) 3 credits
Hardware-related design considerations for combinatorial and sequential logic using integrated circuits. Includes TTL, CMOS, shift registers, arithmetic units, RAM, ROM and edge-triggered devices. Prerequisite: E E 321, 333.

428, 628 ELECTRONIC CAD/CAM (3+0) 3 credits
Impact of the computer on the process of electronic system design, manufacture and test. Computer modeling, simulation and data interfacing to the manufacturing process. Student presentations on specialized topics.

431, 631 DIGITAL COMPUTER ARCHITECTURE AND DESIGN (3+0) 3 credits
Design of functional digital units—memory, arithmetic units, timing and input/output devices. Topics include coding, error detection, data flow, register transfer logic, hardware design language. Prerequisite:E E 333. (Same as C S 431, 631.)

434, 634 REAL TIME COMPUTING SYSTEMS (3+0) 3 credits
(See CH E 434, 634 for description.)

437, 637 COMPUTER GRAPHICS (3+1) 3 credits
(See C S 437, 637 for description.)

439, 639 ADVANCED MICROPROCESSORS (2+3) 3 credits
System design for techniques with emphasis on hardware and software development for typical applications. Topics include arithmetic processing, parallel processing, advanced 8-bit and 16-bit machines. Prerequisite: E E 336.

450, 650 MICROWAVE LABORATORY (0+3) 1 credit
Basic microwave measurements of wave progagation, components, tubes and antenna. Prerequisite: E E 451, 651. Corequisite: E E 452, 652.

451, 651 DISTRIBUTED SYSTEMS AND ANTENNA DESIGN (3+0) 3 credits
Introduction to concepts of distributed systems, wave propagation and antenna design. Prerequisite: E E 351.

452, 652 MICROWAVE ENGINEERING (3+0) 3 credits
Microwave devices, systems, components, networks, applications, microwave tubes and introductory solid-state devices, microwave measurements. Prerequisite: E E 451, 651. Corequisite: E E 450, 650.

455, 655 OPTICAL FIBER LABORATORY (0+3) 1 credit
Measurements of optical fiber propagation characteristics, losses, source characteristics and transmission information. Prerequisite: E E 351. Corequisite: E E 458, 658.

456, 656 ELECTRACOUSTICS (3+0) 3 credits
Theory of sonic and ultrasonic vibrations and acoustics, including electromechanical transducers. Prerequisite: E E 351.

458, 658 FUNDAMENTALS OF OPTICAL FIBERS (3+0) 3 credits
Optical fiber structures, propagation characteristics, fabrication, packaging, measurements, power launching and coupling, fiber system examples. Prerequisite: E E 351. Corequisite: E E 455, 655.

461, 661 POWER SYSTEM ANALYSIS (3+0) 3 credits
Power flow, symmetrical components, faulted system analysis, protection, stability. Prerequisite: E E 361.

463, 663 ELECTRICAL MACHINES (3+0) 3 credits
Fundamentals of transformers and rotating machines; dc, induction, synchronous and variable-reluctance machines. Prerequisite: E E 361.

466, 666 POWER ELECTRONICS (3+0) 3 credits
Semiconductor power switches. Rectifiers, a.c. voltage controllers, cycloconverters, choppers, inverters. Applications. Prerequisite: E E 321, 361.

467, 667 ELECTRIC POWER DISTRIBUTION (3+0) 3 credits
Distribution components, load characteristics, voltage calculations, primary and secondary systems, transformers, capacitor applications. Prerequisite: E E 361 .

468, 668 POWER SYSTEM PROTECTION (3+0) 3 credits
Elements of protective systems, relays, relaying schemes circuit interrupting devices, fault protection of radial feeders, network protective schemes and protective system reliability. Prerequisite: E E 361.

481, 681 STOCHASTIC SYSTEMS (3+0) 3 credits
Introduction to stochastic systems. Includes review of concepts of random variable theory, functions of two random variables, mean square estimation, nonstationary process applications. Prerequisite: E E 381; MATH 352.

482, 682 DATA COMMUNICATIONS AND COMPUTER NETWORKS (3+0) 3 credits
(See C S 482 for description.)

484, 684 DIGITAL SIGNAL PROCESSING (3+0) 3 credits
Discrete signals and systems. The Z transform. Digital filter design techniques. The Fast Fourier Transform. Modeling, analysis, and simulation of discrete random signals and systems. Prerequisite: E E 381; MATH 352.

486, 686 DIGITAL CONTROL ENGINEERING (3+0) 3 credits
Difference equations and the z-transform, digital control system modeling, digital controller design, introduction to state-space methods. Prerequisite: E E 386.

487, 687 MODERN SYSTEM THEORY (3+0) 3 credits
Modern techniques of system analysis and design, primarily in the time domain using state variable concepts. Prerequisite: E E 386.

490 ELECTRICAL PROJECTS LABORATORY (1+3) 2 credits
Design principles and dynamic signal processing techniques used for the design and integration of modern complex systems. Prerequisite: E E 320, 330.

491 ENGINEERING DESIGN/ANALYSIS (4+0) 4 credits
Innovation, entrepreneurship and design of products. Proposal writing and design and fabrication procedures used by industry. Prerequisite: E E 321, 336, 490. For electrical engineering majors only.

492, 692 SEMINAR 1 to 4 credits
(a) Acoustics, (b) biomedical electronics, (c) communications and networks, (d) computer engineering, (e) control systems, (f) electronics, (g) image processing, (h) machine intelligence, (j) microwave systems, (k) modeling and simulation, (m) parallel distributed processing, (n) power systems, (p) signal processing, (q) stochastic systems, (r) systems science, (s) optical fibers, (t) power electronics.

493, 693 INDEPENDENT STUDY 1 to 3 credits
(a) Acoustics, (b) biomedical electronics, (c) communications and networks, (d) computer engineering, (e) control systems, (f) electronics, (g) image processing, (h) machine intelligence, (j) microwave systems, (k) modeling and simulation, (m) parallel distributed processing, (n) power systems, (p) signal processing, (q) stochastic systems, (r) systems science.

703 INFORMATION AND COMMUNICATION THEORY (3+0) 3 credits
(a) Information theory and coding, (b) continuous and pulsed communication systems, (c) optimum transmission and propagation techniques. Each topic may be taken for 3 credits.

713 PASSIVE AND ACTIVE NETWORKS (3+0) 3 credits
(a) Linear passive network synthesis, (b) linear active network synthesis, (c) nonlinear active network analysis. These courses are sequential. Prerequisite: E E 386.

715 NANOSECOND PULSE SYSTEMS (3+0) 3 credits
Analysis of nanosecond pulse generation, transmission and recording

techniques, including study of pulse distortion. Prerequisite: E E 485.

721 ADVANCED ELECTRONICS (3+0) 3 credits
(a) Low noise, wide band, and fast, amplifiers, active filters, (b) pulse, wave shaping and computing circuits. These courses are not sequential.

731 ADVANCED SWITCHING THEORY (3+0) 3 credits
Shift register sequences, state assignments for edge-triggered circuits, logic decisions, multilevel logic, fault detecting and ripple design. Prerequisite: C S 333.

732 THEORY OF PARALLEL AND DISTRIBUTED PROCESSING (3+0) 3 credits
Distributed processor, interprocessor communications, distributed algorithms, parallel processing, connectionist machines, parallel algorithms. Prerequisite: C S 333. (Same as C S 732.)

733 MACHINE INTELLIGENCE (3+0) 3 credits
(a) Intelligent systems, (b) neural computing, (c) advanced applications. Self-organizing, self-adapting systems; cybernetics; neural networks; automated decision making and control; learning automata; expert systems application; knowledge and data engineering; pattern recognition, image processing. Prerequisite: C S 333. (Same as C S 733).

734 ADVANCED COMPUTER MODELING AND SYSTEMS ENGINEERING (3+0) 3 credits
Systems engineering, modeling, simulation, systems analysis, identification, verification of model. Prerequisite: C S 183.

741 ELECTROMAGNETIC FIELDS (3+0) 3 credits
(a) Energy and matter in stationary and moving systems, (b) radiating structures and systems. These courses are not sequential.

751 ELECTROMAGNETIC FIELD ANALYSIS I (1+0) 1 credit
Calculation of electromagnetic fields in two and three dimensions in air and in the presence of iron. Use of field analysis in high energy physics, electrodynamics forces, etc. Typical examples are solved using computer techniques. Prerequisite: E E 351.

752 ELECTROMAGNETIC FIELD ANALYSIS II (1+0) 1 credit
Continuation of E E 751. Prerequisite: E E 751.

753 DESIGN OF ELECTRICAL DEVICES (2+2) 3 credits
Industrial design of electric transformers and totaling machines. Complete examples of designs are worked through. Prerequisite: E E 451. Maximum of 9 credits.

754 MICROWAVE SEMICONDUCTOR DEVICES (3+0) 3 credits
Microwave diodes, transistors, parametric amplifiers, multipliers, TED's IMPATTS, TRAPATT, Masers-Lasers, Josephson Juction Devices, design examples and design considerations. Prerequisite: E E 452.

756 MICROWAVE INTEGRATED CIRCUITS (MIC'S) (3+0) 3 credits
Development of MIC's, analysis of microstrip lines, coupled microstrip lines, microstrip, discontinuities, slot lines and coplanar lines, MIC fabrication and design of microstrip components. Prerequisite: E E 452.

757 UNCONVENTIONAL POWER SOURCES (1+0) 1 credit
Energy conversions devices and systems other than conventional totaling machines. Prerequisite: E E 321, 451.

758 OPTICAL FIBER COMMUNICATIONS (3+0) 3 credits
Propagation in optical fibers, optical receivers, detectors, amplifiers, sources, transmission links, noise considerations, optical fiber communication systems, optical networks, applications and future developments. Prerequisite: E E 458, 658.

761 SYNTHESIS OF SOLID-STATE DEVICES I (3+0) 3 credits
Development of the theory of solid-state devices, with particular emphasis on controlling material parameters so as to produce desired terminal characteristics. Study of the current literature is required. Prerequisite: E E 321.

762 SYNTHESIS OF SOLID-STATE DEVICES II (3+0) 3 credits
Principles of formation of solid-state devices to achieve the desired terminal characteristics. Energy level analysis is emphasized. Study of the current literature is required. Prerequisite: E E 321.

774 ADVANCED POWER SYSTEM ANALYSIS (3+0) 3 credits
(a) Computer solution of power system, (b) power system stability, (c) power system planning. Each topic may be taken for 3 credits. Prerequisite: E E 460.

781 MICROWAVES (3+0) 3 credits
Microwave devices and systems, including magnetrons, klystrons, traveling wave tubes and others and associated components and systems. Prerequisite: EE 451, 651.

782 RANDOM SIGNAL ANALYSIS AND ESTIMATION THEORY (3+0) 3 credits
Random variable and random signals, auto-correlation and cross-correlation functions. Power spectral density functions, minimal mean-quared estimation, maximal likelihood estimation, linear and extended kalman filtering. Prerequisite: E E 481, 681.

783 MICROWAVE LABORATORY (0+3) 1 credit
Prerequisite: E E 321. Corequisite: E E 781.

786 NONLINEAR CONTROL SYSTEMS (3+0) 3 credits
Nonlinear state equations, phase plane analysis, describing function, Liapunov stability, circle criterion, introduction to nonlinear control systems design.

787 ADVANCED SIGNAL PROCESSING (3+0) 3 credits
Parametric, adaptive, and model-based signal processing. Detection/estimation of signals in noise. Ultidimensional discrete systems. Adaptive array processing. Introduction to intelligent signal processing systems. Prerequisite: E E 484.

788 OPTIMAL CONTROL (3+0) 3 credits
Parameter optimization, optimal control of continuous and discrete systems, introduction to numerical methods. Prerequisite: E E 486 or 487.

790 SEMINAR 1 to 3 credits
(a) Acoustics, (b) biomedical electronics, (c) communications and networks, (d) computer engineering, (e) control systems, (f) electronics, (g) image processing, (h) machine intelligence, (j) microwave systems, (k) modeling and simulation, (m) parallel distributed processing, (n) power systems, (p) signal processing, (q) stochastic systems, (r) systems science, (s) optical fibers, (t) power electronics.

791 SPECIAL TOPICS 1 to 3 credits
(a) Acoustics, (b) biomedical electronics, (c) communications and networks, (d) computer engineering, (e) control systems, (f) electronics, (g) image processing, (h) machine intelligence, (j) microwave systems, (k) modeling and simulation, (m) parallel distributed processing, (n) power systems, (p) signal processing, (q) stochastic systems, (r) systems science, (s) optical fibers, (t) power electronics.

792 SPECIAL PROBLEMS 1 to 2 credits
(a) Acoustics, (b) biomedical electronics, (c) communications and networks, (d) computer engineering, (e) control systems, (f) electronics, (g) image processing, (h) machine intelligence, (j) microwave systems, (k) modeling and simulation, (m) parallel distributed processing, (n) power systems, (p) signal processing, (q) stochastic systems, (r) systems science, (s) optical fibers, (t) power electronics.

793 INDEPENDENT STUDY 1 to 3 credits
(a) Acoustics, (b) biomedical electronics, (c) communications and networks, (d) computer engineering, (e) control systems, (f) electronics, (g) image processing, (h) machine intelligence, (j) microwave systems, (k) modeling and simulation, (m) parallel distributed processing, (n) power systems, (p) signal processing, (q) stochastic systems, (r) systems science, (s) optical fibers, (t) power electronics.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 2 credits *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

291 INTRODUCTION TO LITERARY STUDY (3+0) 3 credits
Training in literary analysis. Designed for non-English majors.

292 GREAT BOOKS: THE GREEKS TO DANTE (3+0) 3 credits
Important writers of Western culture in translation e.g., Homer, the Greek dramatists, Virgil, Ovid, Dante. (Same as FLL 292.)

293 GREAT BOOKS: THE RENAISSANCE TO THE PRESENT (3+0) 3 credits
Important writers from the Renaissance to the present in translation, e.g., Racine, Moliere, Voltaire, Goethe. (Same as FLL 293.)

295 MAJOR ENGLISH AUTHORS, BEGINNING TO 1798 (3+0) 3 credits
Survey of major English authors; includes training in the analysis of poetry and drama. Required of all English majors.

296 MAJOR ENGLISH AUTHORS, 1798 TO PRESENT (3+0) 3 credits
Continuation of ENGL 295. Includes training in the analysis of the novel and short story. Required of all English majors.

301-302 IDEAS, VALUES AND CULTURES I AND II (3+0) 3 credits each
Ideas, values and cultures as they relate to conceptions of man, society and the cosmos. Based on Western, non-Western and woman's primary source material.

304 AMERICAN LITERATURE AND CULTURE (3+0) 3 credits
Important American writers and cultural development from the Colonial period to the present. Prerequisite: W T 202, 203.

305-306 FUNDAMENTALS OF CREATIVE WRITING: FICTION (3+0) 3 credits each
Conducted as a writer's workshop in fiction. Continued as ENGL 405-406. Prerequisite: submission of a sample of superior creative work to instructor.

307-308 FUNDAMENTALS OF CREATIVE WRITING: POETRY (3+0) 3 credits each
Conducted as a writer's workshop in poetry. Continued as ENGL 407-408. Prerequisite: submission of a sample of superior work to instructor.

321 EXPOSITORY WRITING (3+0) 3 credits
Advanced composition in various forms of expository prose with attention to structural and stylistic problems.

322 ADVANCED EXPOSITORY WRITING (3+0) 3 credits
Continuation of ENGL 321 with attention to the development of a distinctive writing style. Prerequisite: ENGL 321.

335 THE ISLAMIC TRADITION (3+0) 3 credits
Study of the Qur'an and other literary texts of classical Islamic culture, including poetry, history, science, philosophy and their relation to Greek and Christian cultures.

337 THE BIBLE AS LITERATURE (3+0) 3 credits
Readings from the Old and New Testaments studied in literary, historical and cultural contexts.

339 MYTHOLOGY AND FOLKLORE (3+0) 3 credits
Introduction to early literature as a revelation of the human mind with some attention to folkloristic methodology.

340 MYTH AND ARCHETYPE (3+0) 3 credits
Modes of relationship between mythic patterns and literary expression.

341 LITERATURE OF NEVADA AND THE FAR WEST (3+0) 3 credits
Fiction and nonfiction of the American West by, e.g., Twain, London, Cather, Clark, Stegner.

345 LITERATURE OF ETHNIC MINORITIES IN THE U.S. (3+0) 3 credits
Literature of ethnic groups within the American population, such as American Indians, Blacks, Basques and Chicanos.

355 MODERN DRAMA (3+0) 3 credits
Drama from various nations from the late 19th century through about 1945 including, e.g., Ibsen, Chekhov, Shaw, theatre of the absurd. (Same as FLL 355.)

356 CONTEMPORARY DRAMA (3+0) 3 credits
Treats selected plays of the recent theatre, including current productions here and abroad.

358 SHAKESPEARE FESTIVAL (1+0) 1 credit
One-week field trip to Ashland, Oregon, to attend the Oregon Shakespearean Festival. Offered only during summer sessions. Not applicable toward an advanced degree in English.

404, 604 APPLIED LINGUISTICS (3+0) 3 credits
Modern approaches to language and linguistics. Prerequisite: ENGL 281.

405-406, 605-606 ADVANCED TRAINING IN CREATIVE WRITING: FICTION (3+0) 3 credits each
Continuation of ENGL 305-306.

407-408, 607-608 ADVANCED TRAINING IN CREATIVE WRITING: POETRY (3+0) 3 credits each
Continuation of ENGL 307-308.

410, 610 DESCRIPTIVE GRAMMAR (3+0) 3 credits
Modern English grammar and usage. Prerequisite: ENGL 281.

411, 611 LINGUISTICS (3+0) 3 credits
Studies in general linguistics. Prerequisite: ENGL 281. (Same as ANTH 411.)

413, 613 HISTORY OF THE LANGUAGE (3+0) 3 credits
History of English from its beginnings to the present. Prerequisite: ENGL 281.

414, 614 HISTORICAL LINGUISTICS (3+0) 3 credits
General principles of historical and comparative linguistics. Theories of language origin, methods of classifying language, processes of language change, techniques of reconstructing older forms of languages. Prerequisite: ENGL 281. (Same as ANTH 414, 614.)

415, 615 PHONEMICS AND COMPARATIVE PHONETICS (3+0) 3 credits
Phonetic phenomena that occur in languages of the world. Phoneme concept as applied to the analysis of speech sounds. Phonological structures. Prerequisite: ENGL 281 or SPA 259. (Same as ANTH 415.)

416, 616 LINGUISTIC FIELD METHODS (2+3) 3 credits
(See ANTH 416 for description.)

417 OLD ENGLISH (3+0) 3 credits
Old English language and literature for undergraduate students. Prerequisite: ENGL 281.

418 BEOWULF (3+0) 3 credits
Beowulf and the Germanic Heroic Age for undergraduate students: ENGL 417 or equivalent.

421, 621 LITERARY CRITICISM (3+0) 3 credits
Major theories and methods of literary criticism.

422, 622 ADVANCED NONFICTION COMPOSITION (3+0) 3 credits
Writing of nonfiction modes from the classical essay to contemporary imaginative prose.

423, 623 THEMES OF LITERATURE (3+0) 3 credits.
Themes and ideas significant in literature and literary history. Maximum of 6 credits.

424, 624 TOPICS IN ENGLISH LITERATURE (3+0) 3 credits
Specific topic in English Literature (e.g., epic form, pastoral elegy, ode, etc.) Maximum of 6 credits.

425, 625 THE BRITISH NOVEL I (3+0) 3 credits
British fiction from its origins to about 1800. Readings in such authors as Defoe, Richardson, Fielding, Smollett, Stetne, Johnson, Austen.

426, 626 THE BRITISH NOVEL II (3+0) 3 credits
British fiction from about 1800 to World War I; readings in such authors as Austen, Scott, Dickens, Thackeray, Trollope, Eliot, Hardy.

427, 627 NATIVE AMERICAN LITERATURE (3+0) 3 credits
(See ANTH 427, 627 for description.)

429, 629 LANGUAGE AND CULTURE (3+0) 3 credits
(See ANTH 429 for description.)

ENGINEERING (ENGR)

201 ENGINEERING COMMUNICATION (3+0) 3 credits
Gathering and organization of information and the oral, written and visual presentation of that information and its meaning. Prerequisite: ENGL 102.

ENGLISH (ENGL)

New students must register for ENGL 1, 101 or 102, based on the test scores listed below. Students whose scores indicate placement in ENGL 1 may opt to write a placement essay. (This does NOT guarantee placement above ENGL 1.) The placement essay will be given the Friday before classes begin and the first day of classes each semester. Contact the Core Writing Program Office (784-6709) if you wish to exercise this option.

	Enhanced ACT October 1989	SAT/Verbal
ENGL 1	20 or below	474 or below
ENGL 101	21to 29	475 to 624
ENGL 102	30 or above	625 to 800
ENGL 321	Required junior classification	

Transfer students who have completed one or more college-level courses are exempt from the test score requirements.

1 DEVELOPMENTAL WRITING (3+0) 3 credits *S/U only*
The writing process including paragraph development, sentence structure, usage, and grammar. Credit does not apply to any baccalaureate degree program.

10 ORAL ENGLISH FOR NON-NATIVE SPEAKERS
(3+0) 3 credits *S/U only*
Individualized practice in the oral properties of English for persons who need to improve their fluency (requires access to a learning laboratory or cassette records). Not accepted as a substitute for ENGL 103. Offered by correspondence only. Maximum of 6 credits. Credit not to be applied toward any baccalaureate degree.

11 ENGLISH LABORATORY FOR INTERNATIONAL STUDENTS
(1+2) 2 credits
Training in conversation, reading and writing in English for international students. Designed for groups of visiting foreigners under special circumstances. Credit not to apply toward any baccalaureate degree.

101 COMPOSITION I (3+0) 3 credits
The process of expository essay writing; attention to strategies of invention, arrangement, and style.

102 COMPOSITION II (3+0) 3 credits
Academic writing includes analytic reading and writing, techniques of interpretation, argument, and research. Prerequisite: ENGL 101.

103 ENGLISH AS A SECOND LANGUAGE (3+0) 3 credits
Acquisition of academic English language skills for non-native speakers with emphasis in the following areas: (a) listening skills, (b) discussion and oral presentation, (c) reading skills, (d) composition and structure, (e) research and writing for graduate students, (f) ESL for teaching assistants, (g) English language for the natural sciences, (h) English language skills for the humanities and social sciences. Not intended for native English speakers. Maximum of 6 credits. Applicable for baccalaureate credit.

113 COMPOSITION I FOR INTERNATIONAL STUDENTS
(3+0) 3 credits
Practice in expository writing with emphasis on the application of grammar; includes essay test writing and the multiparagraph essay. Prerequisite: pass IELC test.

114 COMPOSITION II FOR INTERNATIONAL STUDENTS
(3+0) 3 credits
Continuation and extension of ENGL 113; includes the annotated theme and practice in technological writing. Prerequisite: ENGL 113 or equivalent. Satisfies the English requirement for international undergraduate students.

131 INTRODUCTION TO LITERATURE (3+0) 3 credits
Introduction to fiction, poetry and drama.

181 VOCABULARY AND MEANING (2+0) 2 credits
Problems of meaning, word derivation and word formation are in gated with a view to enlarging and refining a working English vocab Not acceptable for the field of concentration as a substitute for ENGI (Offered by correspondence study only.)

223 THEMES OF LITERATURE (3+0) 3 credits
Themes and ideas significant in literature. Maximum of 6 credits.

235 ENGLISH LITERATURE TO 1800 (3+0) 3 credits
English writings and writers from the beginnings to about 1800, *Beowulf*, Chaucer, Shakespeare, Milton, Swift.

236 ENGLISH LITERATURE, 1800 TO THE PRESENT (3+0) 3 cre English writings and writers from about 1800 to the present, e.g., I Keats, Browning, Arnold, Yeats, Eliot.

241 SURVEY OF AMERICAN LITERATURE (3+0) 3 credits
Introduction to major American writers, e.g., Franklin, Whitman, Dicki Twain; and important literary trends. Designed to provide a g knowledge of American literature.

244 INTRODUCTION TO FICTION (3+0) 3 credits
Significant works of fiction from various languages, with attention novel and the short story as literary forms.

253 INTRODUCTION TO DRAMA (2 or 3+0) 2 or 3 credits
Reading of a variety of plays with attention to special characteris drama.

261 INTRODUCTION TO POETRY (3+0) 3 credits
Reading and discussion of selected British and American poems attention to form and content.

263 LITERATURE AND SOCIETY (3+0) 3 credits
Literature within its various social contexts. Includes such topics portrayal of society in literature and the social responsibility of the

264 LITERATURE AND PSYCHOLOGY (3+0) 3 credits
Relationships between literature and human psychology. Include topics as the portrayal of consciousness in literature and the applica psychological insights.

265 NATURE IN LITERATURE (3+0) 3 credits
Literary expressions of our conceptions of nature.

266 POPULAR LITERATURE (3+0) 3 credits
Various forms of popular writing, e.g., best-seller, the western, s fiction, the detective story.

267 INTRODUCTION TO WOMEN AND LITERATURE (3+0) 3 Women writers and the ways in which women are portrayed in lite

268 LITERATURE AND RELIGION (3+0) 3 credits
Literary expressions of religious experience.

271 INTRODUCTION TO SHAKESPEARE (3+0) 3 credits
Shakespeare's principal plays read for their social interest and their li excellence. Not intended for students selecting a field of concentra English.

272 KING ARTHUR AND HIS KNIGHTS (3+0) 3 credits
Origins and development of the Arthurian legends with reading medieval and modern versions of the Arthurian stories.

275 CONTEMPORARY LITERATURE (3+0) 3 credits
Selected contemporary writers for understanding and appreciatio phasis on British and American figures.

281 INTRODUCTION TO LANGUAGE (3+0) 3 credits
(See ANTH 281 for description.)

282 INTRODUCTION TO LANGUAGE AND LITERARY EXPRE (3+1) 3 credits
The name and function of language with special application to l study.

291 INTRODUCTION TO LITERARY STUDY (3+0) 3 credits
Training in literary analysis. Designed for non-English majors.

292 GREAT BOOKS: THE GREEKS TO DANTE (3+0) 3 credits
Important writers of Western culture in translation e.g., Homer, the Greek dramatists, Virgil, Ovid, Dante. (Same as FLL 292.)

293 GREAT BOOKS: THE RENAISSANCE TO THE PRESENT (3+0) 3 credits
Important writers from the Renaissance to the present in translation, e.g., Racine, Moliere, Voltaire, Goethe. (Same as FLL 293.)

295 MAJOR ENGLISH AUTHORS, BEGINNING TO 1798 (3+0) 3 credits
Survey of major English authors; includes training in the analysis of poetry and drama. Required of all English majors.

296 MAJOR ENGLISH AUTHORS, 1798 TO PRESENT (3+0) 3 credits
Continuation of ENGL 295. Includes training in the analysis of the novel and short story. Required of all English majors.

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Ideas, values and cultures as they relate to conceptions of man, society and the cosmos. Based on Western, non-Western and woman's primary source material.

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Important American writers and cultural development from the Colonial period to the present. Prerequisite: W T 202, 203.

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Conducted as a writer's workshop in fiction. Continued as ENGL 405-406. Prerequisite: submission of a sample of superior creative work to instructor.

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322 ADVANCED EXPOSITORY WRITING (3+0) 3 credits
Continuation of ENGL 321 with attention to the development of a distinctive writing style. Prerequisite: ENGL 321.

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Study of the Qur'an and other literary texts of classical Islamic culture, including poetry, history, science, philosophy and their relation to Greek and Christian cultures.

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Readings from the Old and New Testaments studied in literary, historical and cultural contexts.

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Introduction to early literature as a revelation of the human mind with some attention to folkloristic methodology.

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Modes of relationship between mythic patterns and literary expression.

341 LITERATURE OF NEVADA AND THE FAR WEST (3+0) 3 credits
Fiction and nonfiction of the American West by, e.g., Twain, London, Cather, Clark, Stegner.

345 LITERATURE OF ETHNIC MINORITIES IN THE U.S. (3+0) 3 credits
Literature of ethnic groups within the American population, such as American Indians, Blacks, Basques and Chicanos.

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Drama from various nations from the late 19th century through about 1945 including, e.g., Ibsen, Chekhov, Shaw, theatre of the absurd. (Same as FLL 355.)

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Treats selected plays of the recent theatre, including current productions here and abroad.

358 SHAKESPEARE FESTIVAL (1+0) 1 credit
One-week field trip to Ashland, Oregon, to attend the Oregon Shakespearean Festival. Offered only during summer sessions. Not applicable toward an advanced degree in English.

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Modern approaches to language and linguistics. Prerequisite: ENGL 281.

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Continuation of ENGL 305-306.

407-408, 607-608 ADVANCED TRAINING IN CREATIVE WRITING: POETRY (3+0) 3 credits each
Continuation of ENGL 307-308.

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Modern English grammar and usage. Prerequisite: ENGL 281.

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Studies in general linguistics. Prerequisite: ENGL 281. (Same as ANTH 411.)

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Phonetic phenomena that occur in languages of the world. Phoneme concept as applied to the analysis of speech sounds. Phonological structures. Prerequisite: ENGL 281 or SPA 259. (Same as ANTH 415.)

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Old English language and literature for undergraduate students. Prerequisite: ENGL 281.

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Major theories and methods of literary criticism.

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423, 623 THEMES OF LITERATURE (3+0) 3 credits.
Themes and ideas significant in literature and literary history. Maximum of 6 credits.

424, 624 TOPICS IN ENGLISH LITERATURE (3+0) 3 credits
Specific topic in English Literature (e.g., epic form, pastoral elegy, ode, etc.) Maximum of 6 credits.

425, 625 THE BRITISH NOVEL I (3+0) 3 credits
British fiction from its origins to about 1800. Readings in such authors as Defoe, Richardson, Fielding, Smollett, Stetne, Johnson, Austen.

426, 626 THE BRITISH NOVEL II (3+0) 3 credits
British fiction from about 1800 to World War I; readings in such authors as Austen, Scott, Dickens, Thackeray, Trollope, Eliot, Hardy.

427, 627 NATIVE AMERICAN LITERATURE (3+0) 3 credits
(See ANTH 427, 627 for description.)

429, 629 LANGUAGE AND CULTURE (3+0) 3 credits
(See ANTH 429 for description.)

430, 630 STUDIES IN COMPARATIVE LITERATURE (3+0) 3 credits
Literature in English and English translation, following a historical (e.g., Classicism, Romanticism, Modernism) or a formal (e.g., narrative and fiction, drama) approach. Maximum of 6 credits. (Same as FLL 430.)

431, 631 CHILDREN'S LITERATURE (3+0) 3 credits
History, genres, traditions and illustrations of children's books in England and America from 1697 to the present.

435, 635 TUTORING STUDENT WRITERS (2+1) 3 credits
Trains students to work with peers on academic writing projects; prepares students to work in University Writing Center.

436, 636 THEORIES OF SECOND LANGUAGE ACQUISITION (3+0) 3 credits
Survey of major theories of second language acquisition and their potential applications to language teaching. Topics include: language and behavior, language acquisition in children and adults, social and psychological factors. Prerequisite: ENGL 281, 410.

437, 637 TEACHING OF COMPOSITION (3+0) 3 credits
Theory and practice in teaching of composition with special emphasis on recent developments.

438, 638 TEACHING ENGLISH AS A SECOND LANGUAGE (3+0) 3 credits
Current methods and materials in ESL with emphasis on curriculum models and applications. Class observation at primary, secondary and university levels. Prerequisite: ENGL 281, 410.

439, 639 LANGUAGE TESTING (3+0) 3 credits
Theories of defining and assessing competence in English as a second language. Preparation and administration of various tests with attention to cultural bias in testing. Prerequisite: ENGL 281, 410.

441, 641 AMERICAN IDEAS (3+0) 3 credits
Readings in American fiction, poetry, and intellectual prose from the 17th to the 20th centuries, with emphasis on characteristic American notions.

444, 644 THE AMERICAN NOVEL I (3+0) 3 credits
American fiction from its origins to 1900. Readings in such authors as Cooper, Hawthorne, Melville, Clemens.

445, 645 THE AMERICAN NOVEL II (3+0) 3 credits
American fiction from 1900 to the present. Readings in such authors as Hemingway, Fitzgerald, Faulkner, Cather.

446, 646 AMERICAN POETRY (3+0) 3 credits
American poetry from the Puritans to about 1940 with emphasis on the 19th century.

451, 651 CHAUCER (3+0) 3 credits
Selections from the works of Chaucer read in Middle English with emphasis on the *Canterbury Tales*. Prerequisite: ENGL 281.

453, 653 LITERATURE OF THE MIDDLE AGES (3+0) 3 credits
Medieval writers and works from the continent, read in translation, e.g., *The Song of Roland*, *The Nibelungenlied*, Dante, Boccaccio.

454, 654 MEDIEVAL ENGLISH LITERATURE (3+0) 3 credits
Writers and works from medieval England, excluding Chaucer, e.g., *Beowulf*, Langland, *Sir Gawain and the Green Knight*, *Everyman*.

458, 658 DRAMA BEFORE SHAKESPEARE (3+0) 3 credits
Emphasizes the large body of important drama of the Middle Ages and early Renaissance.

460, 660 ELIZABETHAN AND JACOBEAN DRAMA (3+0) 3 credits
Plays and playwrights of the 16th and early 17th centuries, e.g., Marlowe, Jonson, Webster.

461, 661 THE RENAISSANCE (3+0) 3 credits
Writers of prose and poetry in 16th-century England, e.g., More, Sidney, Spenser.

463, 663 THE 17TH CENTURY (3+0) 3 credits
Writers in prose and poetry in England from about 1603 to 1660, e.g., Donne, Jonson, Herbert, Herrick; excluding Shakespeare and Milton.

464, 664 MILTON (3+0) 3 credits
Intensive study of Milton's poetry and selected prose.

465, 665 SHAKESPEARE (3+0) 3 credits
Reading and discussion of some of the major comedies, history plays.

467, 667 WOMEN AND LITERATURE (3+0) 3 credits
Women writers and the ways in which women are portraye

469 INDIVIDUAL AUTHORS (Before 1800) (3+0) 3 credit
Undergraduate seminar on one or two authors, e.g., Pope Johnson, Dryden. Maximum of 6 credits.

470, 670 RESTORATION AND 18TH CENTURY DRAMA
English dramatists from about 1660 to 1800 including e.g Congreve, Sheridan, Goldsmith.

471, 671 RESTORATION AND 18TH CENTURY LITERA' (3+0) 3 credits
Readings in drama, poetry, shorter prose fiction and intelle such writers as Dryden, Swift, Pope, Fielding, Johnson, Gol Hume, Walpole, Blake.

475, 675 THE ROMANTIC MOVEMENT (3+0) 3 credits
English writers from about 1790-1832, e.g., Blake, Wordswor Byron, Shelley, Keats.

479, 679 LITERARY NONFICTION (3+0) 3 credits
Analysis of the essay and nonfictional prose works. Recomm writing minor.

481, 681 THE VICTORIAN PERIOD (3+0) 3 credits
Social and artistic movements of the later 19th century as English poetry and prose.

483, 683 20TH CENTURY BRITISH AND AMERICAN PO (3+0) 3 credits
Readings in such poets as Auden, Eliot, Frost, Thomas, Stevens, Ye

484, 684 20TH CENTURY BRITISH FICTION (3+0) 3 credit
Selected fiction written in English by, e.g., Conrad, Joyce, Lawr

485, 685 STUDIES IN 20TH CENTURY LITERATURE (3+0
Cross-generic studies in British and American literature fr mately 1900 to 1945.

486, 686 STUDIES IN CONTEMPORARY AMERICAN LIT (3+0) 3 credits
Cross-generic studies in American literature since World Wa

487, 687 CONTEMPORARY BRITISH LITERATURE (3+0)
Cross-generic studies in British literature since World War II.

488, 688 INTERNATIONAL FICTION OF THE 19TH AND CENTURIES (3+0) 3 credits
Masterpieces of literature from non-American and non-En works will be read in translation. (Same as FLL 488, 688.)

489 INDIVIDUAL AUTHORS (AFTER 1800) (3+0) 3 credits.
Seminar on one or two authors, e.g., Joyce, Emerson and Thore Maximum of 6 credits.

490, 690 MAJOR TEXTS OF THE ENVIRONMENTAL MO (3+0) 3 credits
Survey of important texts of the environmental movement Leopold, Rachel Carson, Edward Abbey. How such literat consciousness and influences policy.

491 LANGUAGE, SCIENCE AND SOCIETY (3+0) 3 credits
Language and literature of science as a reflection of scientific logical developments and their impact on society.

495 INDEPENDENT STUDY 1 to 3 credits
Open to juniors and seniors specializing in English. Maximum

531 WRITING WORKSHOP (1 to 3+0) 1 to 3 credits
Practicum in the teaching of writing.

533 LITERATURE WORKSHOP (1 to 3+0) 1 to 3 credits
Practicum in the teaching of literature.

640 EVALUATION OF ESL TEXTBOOKS AND MATERIALS (3+0) 3 credits
Survey of the ESL market in materials; texts, supplementary texts, workbooks, tapes, and discs; software; video. Reviews; materials adaptation; publishers and manuscripts. Prerequisite: ENGL 636, 638 or C I 631.

711 INTRODUCTION TO GRADUATE STUDY (3+0) 3 credits
Bibliography and modern research techniques in language and literature, methods of literary analysis, preparation of documented investigation.

712 ADVANCED GRAMMAR FOR ESL TEACHERS (3+0) 3 credits
Principles of American English grammar, its internal, developmental, interference and transitional problems and idiosyncracies. Classroom strategies for effective presentation, error remediation, and practice. Prerequisite: ENGL 281, 410, 739.

713 PROBLEMS IN LANGUAGE (3 or 4+0) 3 or 4 credits
Typical problems in advanced study of language. Prerequisite: ENGL 411 or equivalent. Maximum of 8 credits. (Same as ANTH 713.)

714 PROBLEMS IN MODERN GRAMMATICAL STUDY (3 or 4+0) 3 or 4 credits
Examination of important current grammatical descriptions, especially of English. Prerequisite: ENGL 411 or equivalent. Maximum of 8 credits.

715 SEMINAR IN PHILOLOGY AND LINGUISTICS (3 or 4+0) 3 or 4 credits
Special problems in philology and linguistics. Prerequisite: ENGL 411 or equivalent. Maximum of 8 credits.

717 OLD ENGLISH (3+0) 3 credits
Introduction to Old English language and literature.

718 BEOWULF (3+0) 3 credits
Beowulf and the Germanic Heroic Age. Prerequisite: ENGL 717 or equivalent.

719 MIDDLE ENGLISH (3+0) 3 credits
Introduction to Middle English language and literature. Prerequisite: ENGL 451 or equivalent.

721 PROBLEMS IN THE HISTORY OF LITERARY CRITICISM (4+0) 4 credits
Important critical modes and approaches from Plato and Aristotle to the present. Maximum of 8 credits.

722 PROBLEMS IN LITERARY THEORY (4+0) 4 credits
Problems in criticism and critical theory. Maximum of 8 credits with approval of the student's committee.

723 PROBLEMS IN THEMES AND IDEAS IN LITERATURE (3 or 4+0) 3 or 4 credits
Themes and ideas in literature and broad literary approaches like comparative literature and the history of ideas. Maximum of 8 credits.

725 PROBLEMS IN THE NOVEL (4+0) 4 credits
Intensive study of the novel with attention to its history and development. Maximum of 8 credits.

726 PROBLEMS IN LITERARY FORM (4+0) 4 credits
Generic or cross generic studies of literary structure. Maximum of 8 credits.

730 THE CRAFT OF WRITING (4+0) 4 credits
Writers and their experiences; development of the students' understanding of their own writing processes.

732 PROBLEMS IN WRITING (4+0) 4 credits
Investigation of a mode, genre, or thematic topic through writing.

733 HISTORY AND PRINCIPLES OF RHETORIC (3+0) 3 credits
Development of theories of effective expression in language with attention to practical problems of writing and the teaching of writing. Advised for candidates planning to teach. Maximum of 6 credits.

734 WRITING IN THE ACADEMY (4+0) 4 credits
Examination of ways of learning and writing in various academic disciplines.

735 SEMINAR IN RHETORIC AND COMPOSITION (4+0) 4 credits
Rhetorical problems Maximum of 8 credits.

736 INTERNSHIP IN WRITING 1 to 4 credits
Practicum in writing in community, school, or university settings. Maximum of 8 credits.

737 COLLEGE TEACHING IN LANGUAGE AND LITERATURE (1 to 3+0) 1 to 3 credits *S/U only*
Theory and practice in the teaching of English in college, particularly the first year course. Required of students planning a degree with a teaching emphasis. Maximum of 4 credits.

738 TEACHING ENGLISH AS A FOREIGN LANGUAGE (1 to 3+0) 1 to 3 credits
Theory and practice in the teaching of English to speakers of other languages and nonstandard dialects. Students work under supervision of the director of the ESL program. Prerequisite: ENGL 411 or equivalent. Maximum of 4 credits.

739 APPLIED LINGUISTICS FOR LANGUAGE TEACHERS (3+0) 3 credits
Principles of fluency, accuracy, and appropriateness in effective classroom presentation. Contrastive/error/avoidance analyses in error remediation of dynamic speech, syntax, semantics, pragmatics. Prerequisite: ENGL 281, 410.

740 ISSUES IN ESL/EFL (3+0) 3 credits
Linguistic, cultural, and political issues important to ESL/EFL professionals. Topics such as world Englishes, English for special purposes, the politics of language, materials acquisition and development overseas.

741 PROBLEMS IN EARLY AMERICAN LITERATURE (4+0) 4 credits
Selected subjects in early American literature. Prerequisite: ENGL 441, 445 or 446 or equivalent. Maximum of 8 credits.

743 PROBLEMS IN LATER AMERICAN LITERATURE (4+0) 4 credits
Companion course to ENGL 741. Prerequisite: ENGL 441, 445 or 446 or equivalent. Maximum of 8 credits.

749 SPECIAL TOPICS IN LANGUAGE AND LINGUISTICS (1 to 3+0) 1 to 3 credits
Intensive study of specific topics related to language. Maximum of 6 credits.

750 SPECIAL TOPICS IN TESL (3+0) 3 credits
Intensive study of specific topics related to TESL/ESL, TEFL/EFL. Maximum of 6 credits.

751 WRITERS AND WORKS BEFORE 1800 (1 to 3+0) 1 to 3 credits
Intensive study of specific works by early writers. Maximum of 6 credits.

752 INDIVIDUAL WRITERS AND WORKS AFTER 1800 (1 to 3+0) 1 to 3 credits
Intensive study of specific works by later writers. Maximum of 6 credits.

753 PROBLEMS IN CHAUCER (4+0) 4 credits
Selected problems in Chaucer. Prerequisite: ENGL 451 or equivalent. Maximum of 8 credits.

758 PROBLEMS IN TEACHING WRITING 1 to 4 credits
Survey of theory and practice of teaching composition (a) in grades K through 13, (b) at particular grade levels. Maximum of 6 credits.

761 PROBLEMS IN THE EARLY RENAISSANCE (4+0) 4 credits
Intensive study of selected topics in nondramatic Renaissance literature prior to 1603. Prerequisite: ENGL 461 or equivalent. Maximum of 8 credits.

762 PROBLEMS IN 17TH CENTURY LITERATURE (4+0) 4 credits
Companion course to ENGL 761. Prerequisite: ENGL 463 or equivalent. Maximum of 8 credits.

764 PROBLEMS IN NON-SHAKESPEAREAN DRAMA (4+0) 4 credits
16th and 17th century drama exclusive of Shakespeare. Prerequisite: ENGL 461 or equivalent. Maximum of 8 credits.

765 PROBLEMS IN SHAKESPEARE (4+0) 4 credits
Intensive study in the works of Shakespeare. Prerequisite: ENGL 465 or equivalent. Maximum of 8 credits.

466, 666 OLD WORLD BASQUE CULTURE (3+0) 3 credits
Intensive study of the Basque people of southern Europe both in historical perspective and contemporary society; the historical events and social structural features which have stimulated or facilitated extensive Basque emigration to other parts of the world including the American West. Prerequisite: ANTH 101. (Same as ANTH 466.)

French (FR)

101-102 ELEMENTARY FRENCH I and II (4+0) 4 credits each
Introduction to the language through the development of language skills and through structural analysis. Includes an introduction to French culture.

203-204 SECOND YEAR FRENCH (3+0) 3 credits each
Structural review, conversation and writing, readings in modern literature. Prerequisite to FR 203 is FR 102 or equivalent. Prerequisite to FR 204 is FR 203 or equivalent. Completion of FR 204 satisfies the arts and science foreign language requirement.

205 READING FRENCH I (2+0) 2 credits
Development of reading skills, including vocabulary building, verb recognition, and sentence structure. Reading of selected texts for comprehension. Prerequisite: FR 102. Completion of this course and FR 209 satisfies the arts and science foreign language requirement.

209 READING FRENCH II (2+0) 2 credits
Continuation of development of reading skills with emphasis on comprehension. Practical readings in the humanities, social science and natural sciences with individualized assignments when appropriate. Prerequisite: FR 205. Completion of this course satisfies the arts and science foreign language requirement.

221 FRANCE AND ITS CULTURE (3+0) 3 credits
Introduction to the culture and civilization of France. Taught in English; no knowledge of French required. French language readings required of French majors. Counts for humanities credits for students using the catalog prior to 1989-90.

223 FRENCH LITERATURE IN ENGLISH TRANSLATION (3+0) 3 credits
Major representative works of the important literary periods including such authors as Montaigne, Molière, Voltaire, Hugo, Gide, Ionesco.

301 FRENCH PHONETICS (3+0) 3 credits
Introduction to phonetic theory and practice in pronunciation; instruction and practice in levels of usage. Not open to native speakers using the standard form of the language. Prerequisite: FR 203 or equivalent.

305-306 FRENCH COMPOSITION (3+0) 3 credits each
Development of directed and creative writing skills in French. Prerequisite to FR 305 is 204; prerequisite to FR 306 is 305. Not applicable to an advanced degree in French.

309 FRENCH CONVERSATION (1+2) 1 credit
Intensive practice in speaking. Prerequisite: FR 204. Maximum of 4 credits.

313 INTRODUCTION TO THE HISTORY OP FRENCH LITERATURE I (3+0) 3 credits
Comprehensive view of French literature and its major genres from its beginnings through the 17th century, with emphasis on historical background and textual analysis. Prerequisite: FR 305 or equivalent. Not applicable to an advanced degree in French.

314 INTRODUCTION TO THE HISTORY OF FRENCH LITERATURE II (3+0) 3 credits
Comprehensive view of French literature and its major genres from the 18th century to the present with emphasis on historical background as well as textual analysis. Prerequisite: FR 305 and 313 or equivalent. Not applicable to an advanced degree in French.

Prerequisite for all French 400-level literature courses: FR 305-306 and 6 credits from FR 221, 313, 314.

407, 607 ADVANCED FRENCH GRAMMAR AND COMPOSITION (3+0) 3 credits
Prerequisite: FR 306.

441, 641 SEMINAR IN LANGUAGE AND LITERATURE (2 or 3+0) 2 or 3 credits
Selected themes, ideas, authors, works or periods in French language or literature. Topics vary from semester to semester. Maximum of 6 credits.

463, 663 MEDIEVAL FRENCH LITERATURE (3+0) 3 credits
Literature and thought of the Middle Ages. Maximum 6 credits each.

465,665 THE 16TH CENTURY IN FRENCH LITERATURE (3+0) 3 credits
Literature and thought of the Renaissance. Maximum 6 credits each.

469, 669 THE 17TH CENTURY IN FRENCH LITERATURE (3+0) 3 credits
Trends of 17th century literature and thought.

473, 673 THE 18TH CENTURY IN FRENCH LITERATURE (3+0) 3 credits
Literature and thought of the Age of Enlightenment. Maximum 6 credits each.

477, 677 THE 19TH CENTURY IN FRENCH LITERATURE (3+0) 3 credits
Main literary and intellectual trends from Romanticism to Naturalism.

491, 691 THE 20TH CENTURY IN FRENCH LITERATURE (3+0) 3 credits
Main currents of 20th century prose, poetry and theatre.

Prerequisite for all French 700-level courses: admission to graduate standing in the Department of Foreign Languages and Literatures.

731 STUDIES IN THE FRENCH RENAISSANCE AND BAROQUE (3+0) 3 credits
Development of the Renaissance and Baroque periods with particular reference to Rabelais, the Pléiade and Montaigne.

739 STUDIES IN 17TH CENTURY FRENCH LITERATURE (3+0) 3 credits
Seminar in literary problems of the century, considered by genre or by author. Maximum of 9 credits.

743 STUDIES IN 18TH CENTURY FRENCH LITERATURE (3+0) 3 credits
Special consideration of various authors or aspects of the period. Maximum of 9 credits.

747 STUDIES IN 19TH CENTURY FRENCH LITERATURE (3+0) 3 credits
Seminar in selected literary schools and movements of the century, selected authors, or genres. Maximum of 9 credits.

761 STUDIES IN 20TH CENTURY FRENCH LITERATURE (3+0) 3 credits
Problems of modern and contemporary literature; selected authors, movements, schools; influences, genres. Maximum of 9 credits.

792 SPECIAL PROBLEMS 2 or 3 credits
Seminar in selected problems not the main emphasis in other courses, such as existentialism, culture and civllization, literary criticism, etc. Maximum of 9 credits.

793 INDEPENDENT STUDY 1 to 3 credits Maximum of 6 credits.

797 THESIS 1 to 6 credits.

Inactive Courses
715 OLD FRENCH (2+0) 2 credits
725 EXPLICATION DE TEXTES (3+0) 3 credits

German (GER)

101-102 ELEMENTARY GERMAN I and II (4+0) 4 credits each
Introduction to the language through the development of language skills and through structural analysis. Includes an introduction to German culture.

203-204 SECOND-YEAR GERMAN (3+0) 3 credits each
Structural review, conversation and writing, readings in modern literature. Prerequisite to GER 203 is GER 102 or equivalent. Prerequisite to GER 204 is GER 203 or equivalent. Completion of GER 204 satisfies the arts and science foreign language requirement.

READING GERMAN I (2+0) 2 credits
velopment of reading skills, including vocabulary building, verb recog-on and sentence structure. Reading of selected texts for comprehension. requisite: GER 102. Completion of this course and 209 satisfies the arts l science foreign language requirement.

READING GERMAN II (2+0) 2 credits
ntinuation of development of reading skills with emphasis on compre-sion. Practical readings in the humanities, social sciences and natural nces with individualized assignments when appropriate. Prerequisite: R 205. Completion of this course satisfies the arts and science foreign guage requirement.

GERMAN SPEAKING EUROPE AND ITS CULTURE (3+0) 3 credits
roduction to the culture and civilization of Germany, Austria and itzerland. Taught in English; no knowledge of German required. Ger-n language readings required of German majors. Counts for humanities dits for students using the catalog prior to 1989-90.

GERMAN LITERATURE IN ENGLISH TRANSLATION (3+0) 3 credits
jor representative works of the important literary periods including hors such as Goethe, Büchner, Hermann Hesse, Thomas Mann, Franz fka, Bert Brecht.

CORRECTIVE PHONETICS (2+0) 2 credits
roduction to phonetic theory and extensive practice in pronunciation l intonation. Not open to native speakers using the standard form of the guage. Prerequisite: GER 203 or equivalent.

-306 GERMAN COMPOSITION (3+0) 3 credits each
requisite to GER 305 is 204; prerequisite to GER 306 is 305. Not appli-le to an advanced degree in German.

GERMAN CONVERSATION (0+2) 1 credit
requisite: GER 204. Maximum of 4 credits.

INTRODUCTION TO GERMAN LITERATURE (3+0) 3 credits
adings in German literature in its major forms with emphasis on the dern period. Discussions. Prerequisite: GER 204. Not applicable to an vanced degree in German.

SHORTER FORMS IN GERMAN LITERATURE (3+0) 3 credits
ctice in literary analysis. Examples from lyric poetry, the short story, the vella, and the drama. Prerequisite: GER 204 or equivalent. Not applicable in advanced degree in German.

requisite for all German 400-level literature courses: GER 305-306 l 3 credits from GER 221 or 311.

607 ADVANCED GERMAN GRAMMAR (3+0) 3 credits
requisite: GER 306 or equivalent.

,608 ADVANCED GERMAN COMPOSITION (3+0) 3 credits
requisite: GER 407 or equivalent.

-436, 635-636 THE AGE OF GOETHE (3+0) 3 credits each
nprehensive view of German literature from 1750 to 1830.

,641 SEMINAR IN LANGUAGE AND LITERATURE (2 or 3+0) 2 or 3 credits
cted themes, ideas, authors, works or periods in German language or rature. Topics vary from semester to semester. Maximum of 6 credits.

,655 APPLIED GERMAN LINGUISTICS (3+0) 3 credits
oduction to linguistic concepts and contrastive linguistics. Projects by dents apply the principles of contrastive linguistics to the teaching of man. Prerequisite: GER 306.

,658 INTRODUCTION TO THE HISTORY OF THE GERMAN LANGUAGE (3+0) 3 credits
velopment of the German language. Basic linguistic concepts and termi-ogy. Prerequisite: GER 306.

-460, 659-660 HISTORY OF GERMAN LITERATURE (3+0) 3 credits each
nprehensive view of German literature from its beginning to the present day.

467, 667 LESSING (3+0) 3 credits
Chief dramatic and critical works of Lessing.

468, 668 SCHILLER (3+0) 3 credits
Selections from Schiller's chief poetic, dramatic and aesthetic works.

469, 669 GOETHE (3+0) 3 credits
Selected works of Goethe exclusive of Faust.

470, 670 GOETHE'S "FAUST" (3+0) 3 credits
Parts I and II.

471, 671 GERMAN LYRIC POETRY (3+0) 3 credits
German lyric poetry from the 17th century to the present.

472, 672 19TH CENTURY GERMAN LITERATURE (3+0) 3 credits
German literature from 1830 to 1880.

477, 677 THE GERMAN "NOVELLE" (3+0) 3 credits each
Development of the "Novelle" from the Romantic period to modern times. Reading and discussion.

491, 691 20TH CENTURY GERMAN LITERATURE (3+0) 3 credits
Main currents of German prose, poetry and drama since 1890.

Prerequisite for all German 700-level courses: admission to graduate standing in the Department of Foreign Languages and Literatures.

709 CRITICAL AND CREATIVE WRITING IN GERMAN (2+0) 2 credits
Practice of the use of German in criticism and creative writing. Maximum of 6 credits.

721 THE AGE OF ENLIGHTENMENT IN GERMANY (3+0) 3 credits
German literature of the Enlightenment. Maximum of 6 credits.

732 GOETHE AND HIS CONTEMPORARIES (3+0) 3 credits
Literature of the German *Sturm und Drang, Klassic* and Romantik. Maximum of 6 credits.

741 GERMAN REALISM (3+0) 3 credits
Literature of Poetic Realism and Realism. Maximum of 6 credits.

761 THE MODERN AGE IN GERMANY (3+0) 3 credits
German literature from Naturalism to the present. Maximum of 6 credits.

792 SPECIAL PROBLEMS 2 or 3 credits
Special topics in literary movements, genres, authors, etc. Maximum of 9 credits.

793 INDEPENDENT STUDY 1 to 3 credits each
Maximum of 6 credits.

797 THESIS 1 to 6 credits

Inactive Courses
713 PROBLEMS IN GERMANIC PHILOLOGY AND LINGUISTICS (3+0) 3 credits
714 GOTHIC (3+0) 3 credits
715-716 MIDDLE HIGH GERMAN LANGUAGE AND LITERATURE (3+0) 3 credits each
731 GERMAN RENAISSANCE, REFORMATION AND BAROQUE (3+0) 3 credits

Greek (GK)

101-102 ELEMENTARY CLASSICAL GREEK I and II (4+0) 4 credits each
Introduction to the language stressing mastery of grammar and the reading of simple texts from classical authors.

205 READING CLASSICAL GREEK I (2+0) 2 credits
Selections from such prose writers as Plato, Xenephon and the New Testament. Prerequisite: GK 102. Completion of this course and GK 209 satisfies the arts and science foreign language requirement.

209 READING CLASSICAL GREEK II (2+0) 2 credits
Selections from such prose and verse writers as Plato, Aristotle, Euripides and Homer. Prerequisite: GK 205. Completion of this course satisfies the arts and science foreign language requirement.

NOTE: The arts and science foreign language requirement can also be satisfied by completing two semesters of Classical Greek and two semesters of Latin.

Italian (ITAL)

101-102 ELEMENTARY ITALIAN I and II (4+0) 4 credits each
Introduction to the language through the development of language skills and through structural analysis. Includes an introduction to Italian culture.

203-204 SECOND YEAR ITALIAN (3+0) 3 credits each
Structural review, conversation and writing, readings in modern literature. Prerequisite to ITAL 203 is ITAL 102 or equivalent; prerequisite to ITAL 204 is 203 or equivalent. Completion of ITAL 204 satisfies the arts and science foreign language requirement.

221 ITALY AND ITS CULTURE (3+0) 3 credits
Introduction to the culture and civilization of Italy. Taught in English; no knowledge of Italian required. Counts for humanities credits for students using the catalog prior to 1989-90.

223 ITALIAN LITERATURE IN ENGLISH TRANSLATION (3+0) 3 credits
Major representative works of the important literary periods including such authors as Dante, Petrarch, Boccaccio, Machiavelli, Pirandello.

305-306 ITALIAN COMPOSITION (3+0) 3 credits
Prerequisite to ITAL 305 is 204; prerequisite to ITAL 306 is 305.

309 ITALIAN CONVERSATION (0+0) 1 credit
Prerequisite: ITAL 204. Maximum of 4 credits.

462, 662 DANTE'S DIVINE COMEDY (3+0) 3 credits
Selected readings in the Divine Comedy with some reference to Dante's minor works. Taught in English.

464, 664, PETRARCH, BOCCACCIO (3+0) 3 credits
Petrarch's poetry and selected prose. Selections from Boccaccio's *Decameron*. Taught in English.

Inactive Courses
351-352 THE ITALIAN NOVEL (2+0) 2 credits each
381-382 ITALIAN LITERATURE OF THE 18TH AND 19TH CENTURIES (2+0) 2 credits each

Japanese (JAPN)

101-102 ELEMENTARY JAPANESE I and II (4+0) 4 credits each
Introduction to the language through structural analysis and the writing system. Includes some conversation and an introduction to Japanese culture. Prerequisite to JAPN 102 is JAPN 101 or equivalent.

203-204 SECOND YEAR JAPANESE (3+0) 3 credits each
Continuation of structural analysis and spoken and written Japanese. Prerequisite: to JAPN 204 is JAPN 203 or equivalent. Completion of JAPN 204 satisfies the arts and science foreign language requirement.

221 JAPAN AND ITS CULTURE (3+0) 3 credits
Introduction to the culture and civilization of Japan. Taught in English; no knowledge of Japanese required. Counts for humanities credits for students using catalog prior to 1989-90.

305-306 JAPANESE CONVERSATION AND COMPOSITION (3+0) 3 credits each
Designed to improve the written and oral proficiency of intermediate students by focusing on topics of human and cultural interest. Not intended for native speakers. Prerequisite to JAPN 305 is 204; prerequisite to JAPN 306 is 305.

Latin (LAT)

101-102 ELEMENTARY LATIN I and II (4+0) 4 credits each
Introduction to the language stressing mastery of grammar and the reading of simple texts from classical authors.

205 READING LATIN I (2+0) 2 credits
Selections from such Latin prose writers as Caesar, Cicero,
Prerequisite: LAT 102. Completion of this course and LAT 209 arts and science foreign language requirement.

209 READING LATIN II (2+0) 2 credits
Selections from such Latin poets as Ovid, Virgil, Catullus, Hor
uisite: LAT 205. Completion of this course satisfies the arts foreign language requirement.

NOTE: The arts and science foreign language requirement satisfied by completing two semesters of Latin and two s Classical Greek.

Russian (RUSS)

101-102 ELEMENTARY RUSSIAN I and II (4+0) 4 credits ea
Introduction to the language through the development of lan and through structural analysis. Includes an introduction to Rus

203-204 SECOND YEAR RUSSIAN (3+0) 3 credits each
Structural review, conversation and writing, readings in moder
Prerequisite to RUSS 203 is RUSS 102 or equivalent. Prerequis
204 is RUSS 203. Completion of RUSS 204 satisfies the arts foreign language requirement

Inactive Courses
305-306 INTERMEDIATE RUSSIAN COMPOSITION AND CONVERSATION (3+0) 3 credits each
357-358 SURVEY OF RUSSIAN LITERATURE (3+0) 3 credits

Spanish (SPAN)

101-102 ELEMENTARY SPANISH I and II (4+0) 4 credits ea
Introduction to the language through the development of lan and through structural analysis. Includes an introduction to S Latin American culture.

203-204 SECOND YEAR SPANISH (3+0) 3 credits each
Structural review, conversation and writing, readings in moder
Prerequisite to SPAN 203 is SPAN 102 or equivalent. Prerequis
204 is SPAN 203 or equivalent. Completion of SPAN 204 satis
and science foreign language requirement.

205 READING SPANISH I (2+0) 2 credits
Development of reading skills, including vocabulary building, nition, and sentence structure. Reading of selected texts for com
Prerequisite: SPAN 102. Completion of this course and 209 satis
and science foreign language requirement

209 READING SPANISH II (2+0) 2 credits
Continuation of development of reading skills with emphasis hension. Practical readings in the humanities, social sciences sciences, with individualized assignments when appropriate. P SPAN 205. Completion of this course satisfies the arts and scie language requirement.

221 IBERIA AND ITS CULTURES (3+0) 3 credits
Introduction to the nationalities and cultures of Iberia; emph
Spanish state, through geographical, historical, socio-economic
issues. Taught in English. Readings in Spanish required of Span
Counts for humanities credits for students using catalog prior

222 HISPANIC-AMERICA AND ITS CULTURE (3+0) 3 cred
Introduction to the culture and civilization of Hispanic-Americ
Taught in English; no knowledge of Spanish or Portuguese
Spanish or Portuguese language readings required of Spanis
guese majors or minors. Counts for humanities credits for stud
catalog prior to 1989-90.

223 SPANISH LITERATURE IN ENGLISH TRANSLATION (3+0) 3 credits
Major representative works of the important literary periods
such authors as Cervantes, Unamuno, Lorca, Borges, García M

301 CORRECTIVE PHONETICS (2+0) 2 credits
Extensive practice in pronunciation with the aim of eliminating foreign accent; instruction and practice in levels of usage. Not open to native speakers using the standard form of the language. Prerequisite: SPAN 203 or equivalent.

305-306 SPANISH COMPOSITION (3+0) 3 credits each
Syntax and idiomatic usage. Prerequisite to SPAN 305 is 204; prerequisite to SPAN 306 is SPAN 305. Not applicable to an advanced degree in Spanish.

309 SPANISH CONVERSATION (2+0) 2 credits
Designed to help intermediate and advanced language students achieve oral proficiency through specific communicative situations. Not intended for native speakers. Prerequisite: SPAN 204. Maximum of 4 credits.

351-352 MASTERWORKS OF HISPANIC LITERATURE
(3+0) 3 credits each
Study of selected works of Spanish and Spanish-American literature. Prerequisite: SPAN 204.

Prerequisite for all Spanish 400-level courses; SPAN 305-306, 351-352.

410, 610 SPANISH STYLISTICS (3+0) 3 credits
Designed to help the mature language student achieve a personal style in written and spoken Spanish.

440 SEMINAR (3+0) 3 credits
Creative and critical writing and speaking on current issues in Hispanic language, literature and culture.

441, 641 SEMINAR IN LANGUAGE AND LITERATURE
(2 or 3+0) 2 or 3 credits
Selected themes, ideas, authors, works, or periods in Hispanic languages or literatures. Topics vary from semester to semester. Maximum of 6 credits.

462, 662 MEDIEVAL AND EARLY RENAISSANCE SPANISH LITERATURE (3+0) 3 credits
Includes the period of the Catholic kings.

464, 664 SPANISH GOLDEN AGE PROSE (3+0) 3 credits
Prose forms of the 16th and 17th centuries with emphasis on Cervantes.

466, 666 SPANISH GOLDEN AGE POETRY (3+0) 3 credits
Poetry of the 16th and 17th centuries, from Garcilaso to Góngora.

469, 669 SPANISH GOLDEN AGE DRAMA (3+0) 3 credits each
Theater of the 16th and 17th centuries from Torres Naharro to Calderón de la Barca.

476, 676 THE 18TH CENTURY IN SPAIN (3+0) 3 credits
Neoclassical and traditional writers in the 18th century.

477, 677 19TH CENTURY SPANISH LITERATURE (3+0) 3 credits
Main currents in either the prose, drama, or poetry of the 19th century in Spain. May be repeated to a maximum of 6 credits if topics are alternated.

484, 684 SPANISH-AMERICAN DRAMA (3+0) 3 credits
History and development of the theatre in Spanish America.

485, 685 SPANISH-AMERICAN POETRY (3+0) 3 credits
Spanish-American poetry from the discovery to the present day.

486, 686 SPANISH-AMERICAN NOVEL (3+0) 3 credits
The novel in Spanish America from colonial times to the present.

487, 687 SPANISH-AMERICAN SHORT STORY AND ESSAY
(3+0) 3 credits
The short story and essay in Spanish America from the conquest to the present day.

491, 691 20TH CENTURY SPANISH LITERATURE (3+0) 3 credits
Main currents in either the prose, drama or poetry of the 20th century in Spain. Maximum of 6 credits if topics are alternated.

493, 693 THE SHORT STORY IN SPANISH LITERATURE (3+0) 3 credits
The short story from early times to the present day.

Prerequisite for all Spanish 700-level courses: admission to graduate standing in the department of foreign languages and literatures.

721 MEDIEVAL AND EARLY RENAISSANCE SPANISH LITERATURE
(3+0) 3 credits
Seminar on selected genres and authors of the Spanish Middle Ages and the period of the Catholic kings. Maximum of 6 credits.

733 STUDIES IN SPANISH LITERATURE OF THE GOLDEN AGE
(3+0) 3 credits
Special consideration of selected authors or aspects of the period. Maximum of 9 credits.

735 CERVANTES (3+0) 3 credits
Seminar on the works of Cervantes.

743 STUDIES IN SPANISH-AMERICAN POETRY (3+0) 3 credits
Critical study of poetry in Spanish America with emphasis on the *modernista* movement.

744 STUDIES IN THE SPANISH-AMERICAN NOVEL (3+0) 3 credits
Development of the novel in Spanish America. Maximum of 6 credits.

745 STUDIES IN 18TH CENTURY SPANISH LITERATURE
(3+0) 3 credits
Seminar in selected literary schools and movements. Maximum of 6 credits if topic is alternated.

747 STUDIES IN 19TH CENTURY SPANISH LITERATURE
(3+0) 3 credits
Seminar on selected movements, authors or genres in Spanish literature of the 19th century. Maximum of 6 credits.

761 STUDIES IN SPANISH LITERATURE OF THE 20TH CENTURY
(3+0) 3 credits
Problems of modern and contemporary literature; selected authors movements; influences, genres. Maximum of 9 credits.

792a SPECIAL PROBLEMS IN SPANISH LITERATURE (3+0) 3 credits
Special topics in literary movements, authors, genres, literary criticism, etc. Maximum of 9 credits.

792b SPECIAL PROBLEMS IN SPANISH-AMERICAN LITERATURE
(3+0) 3 credits
Seminar in selected authors, genres, movements, literary criticism, etc. Maximum of 9 credits.

793 INDEPENDENT STUDY 1 to 3 credits
Maximum of 6 credits.

797 THESIS 1 to 6 credits

Inactive Course
715 OLD SPANISH I (3+0) 3 credits

GEOGRAPHY (GEOG)

103 GEOGRAPHY OF THE WORLD'S ENVIRONMENT
(3+0 or 3) 3 or 4 credits
Physical elements of the earth, its natural features and their significance to man. Earth form and motion, landforms, climate, vegetation and soils. Four laboratory experiences required.

106 INTRODUCTION TO CULTURAL GEOGRAPHY (3+0) 3 credits
Systematic consideration of the spatial aspects of human culture. Major theses: spatial history and morphology, society-land relations and economic development and resource utilization.

200 REGIONAL GEOGRAPHY OF THE DEVELOPED WORLD
(3+0) 3 credits
Systhesis of the geographic factors (human, economic, environmental, political) which give distinctive character to specific areas of the developed world. Emphasis on international awareness.

202 REGIONAL GEOGRAPHY OF THE UNDERDEVELOPED WORLD
(3+0) 3 credits

Synthesis of the geographic factors (human, economic, environmental, political) which give distinctive character to specific areas of the underdeveloped world. Emphasis on international awareness.

211 MAPS AND THEIR INTERPRETATION (1+3) 2 credits *S/U only*
Introduction to maps and their use. Laboratory exercises in the interpretation of maps including topographic types. Experience in the field emphasized.

212 CARTOGRAPHY (2+6) 4 credits
Map making: includes map projections, map lettering, map reproduction and graphic presentation of geographic data. Prerequisite: one semester of college mathematics.

300 GEOGRAPHY OF THE WORLD ECONOMY (3+0) 3 credits
Emphasizes worldwide patterns of economic activity. World population, food and development problems; natural and economic factors related to economic activity. Study of selected agricultural and industrial commodities.

305 COMMUNITY ENVIRONMENTAL PROBLEMS (3+0) 3 credits
Local environmental problems involving their causes, effects and possible solutions. Examples also drawn from nearby regions and states. Local field study. Prerequisite: ENV 101 or GEOG 103 or a course in the natural sciences. (Same as ENV 305.)

310 SEMINAR IN CULTURAL GEOGRAPHY (3+0) 3 credits
In-depth study of one or more aspects of cultural geography. May be elected more than once to pursue different studies. Prerequisite: introductory cultural or economic geography course. Maximum of 9 credits.

314 FIELD METHODS (1+6) 3 credits
Introduction to field techniques used for geographic analysis. Accent on practical experience culminating in individual maps and reports. Prerequisite: geography major or minor.

319 GEOGRAPHY OF WORLD AFFAIRS (3+0) 3 credits
Workshop to develop the technique of interpreting current world events in the geographic framework in which such events occur. Prerequisite: introductory geography course.

412, 612 COMPUTER MAPPING (3+0) 3 credits
Computer assisted cartography in theory and practice. Cartographic communications, data acquisition and design for computer generated mapping. Prerequisite: course in cartography, computer science or statistics.

413, 613 GEOGRAPHIC INFORMATION SYSTEMS (2+3) 3 credits
Use of Arc/Info and other computer software to work through a project that lends a new perspective on planning, resource inventories, and environmental analysis.

416, 616 SPATIAL ANALYSIS IN GEOGRAPHY (3+0) 3 credits
Statistical and mathematical techniques applied to spatial problems, especially mappable data. Description, inference, hypothesis testing and statistical map ping. Prerequisite: college algebra or higher.

418, 618 GEOGRAPHIC THOUGHT (2+0) 2 credits
History of geographic thought; place of geography among the fields of knowledge; geographic methods; current trends in the field. Prerequisite: major or minor in geography.

421, 621 CLIMATOLOGY (3+0) 3 credits
Physical characteristics of the atmosphere. World climatic classification. Local atmospheric field study. Prerequisite: GEOG 103 or ENV 101 or a course in physics or meteorology.

431, 631 LANDFORMS (3+0) 3 credits
Origin, description and classification of landforms. Distribution of landforms and their significance to environmental and resource problems in the U.S. Prerequisite: GEOG 103 or GEOL 101.

434, 634 BIOGEOGRAPHY (3+0) 3 credits
Brief treatment of plant and animal evolution. Prehistoric, historic and present-day world-wide distribution of plant formations and associated animal life. Examples of human impact on biotic life such as domestications, transfers and extinctions. (Same as BIOL 434, 634.)

435, 635 CONSERVATION OF NATURAL RESOURCES (3+0) 3
Basic information regarding current and future problems and meth conserving this country's renewable and nonrenewable resources. I uisite: one of the following: (1) junior (or higher) standing; or (2) at credits of work in geography or geology or a biological science. (S RWF 435, 635.)

440, 640 MOUNTAIN GEOGRAPHY (3+0) 3 credits
Geographic investigation of various mountain regions. Field study Sierra Nevada and basin-range mountains emphasizing man's imp the mountain environment.

446, 646 POLITICAL GEOGRAPHY (3+0) 3 credits
Spatial analysis of political systems. Territorial organization trends i government and the sovereign state. Changing geopolitical patte power. Prerequisite: introductory geography courses.

452, 652 URBAN GEOGRAPHY (3+0) 3 credits
Origin and historical development of cities; world survey of cities city site, situation and functions with emphasis on American exa Field trip. Prerequisite: introductory geography course or work in a field such as engineering, history, economics, political science or soci

456, 656 LAND USE PLANNING (1 to 3+0) 1 to 3 credits
Establishment of goals, policy development, and implementation of for land use in various geographic areas. Considers resource scarci environmental deterioration problems.

470, 670 GEOGRAPHIC EXPLORATIONS 1 to 3 credits *S/U only*
Intensive field study at various locations. Physical geography, settl patterns, cultural landscapes and environmental issues. Maximu credits.

471, 671 ANGLO-AMERICA (3+0) 3 credits
Physical and cultural geographic patterns in the U.S. and Canada, both the systematic and regional approach. Historical origins consi Prerequisite: introductory geography course.

472, 672 GEOGRAPHY OF ARID LANDS (3+0) 3 credits
Climate, geomorphology, hydrology, ecology, and desertification world's arid and semi-arid areas. Field trips may be required. Prereq 6 credits in the natural sciences.

473, 673 NEVADA: PATTERNS ON THE LAND (3+0) 3 credits
Physical, historical and economic aspects of the western Great Bas nearby areas such as the Sierra Nevada and the southern Columbia Pl Field trip.

476, 676 LATIN AMERICA (3+0) 3 credits
Regional survey of physical, economic, cultural and political aspe Latin America. Prerequisite: introductory geography course.

482, 682 EUROPE (3+0) 3 credits
Consideration of the physical, cultural and historical geography of E and its regions. Prerequisite: introductory geography course.

485, 685 SOVIET UNION (3+0) 3 credits
Regional analysis of the environment, resources, peoples, and soci economic development of the world's largest state. Prerequisite: intr tory geography course.

487, 687 MIDDLE EAST (3+0) 3 credits
Regional geography of area with limits in terms of Arab and I influences or related cultural and historical circumstances. Oriented a strategic core of territory as crossroads of three continents. Prereq introductory geography course.

488, 688 THE PACIFIC BASIN (3+0) 3 credits
Physical geography, exploration and colonization, peoples and the tures within the Pacific Ocean region, including Australia, New Ze the islands and bordering lands. Prerequisite: introductory geog course.

489, 689 EAST ASIA (3+0) 3 credits
Regional and national analysis of the physical, political and cultural raphy of China, Japan, and Korea. Comparison of varied develop experiences.

491, 691 SPECIAL TOPICS 1 to 3 credits
Independent study of selected geographic problems, including library research, field work and reports. Maximum of 8 credits.

495, 695 INTERNSHIP IN GEOGRAPHY 1 to 6 credits *S/U only*
Professional work experience with a government agency or private company. Maximum of 6 credits. Prerequisite: geography major or minor.

701 ADVANCED GEOGRAPHY 1 to 5 credits each
(a) Geographic thought, (b) historical, (c) cultural, (d) economic, (e) urban, (f) regional, (g) field methods, (h) cartography, (j) educational methods, (k) environmental perception, (m) statistical methods, (n) conservation problems, (p) physical, (r) climatology, (s) biogeography, (t) soils. Consists of either lectures, conferences, supervised reading, laboratory work, or field work. May be repeated more than once to pursue different studies.

720 SEMINAR IN ADVANCED CLIMATOLOGY (3+0) 3 credits
Topics in physical, regional, or applied climatology, world climates, microclimates, climatic change, statistical techniques and problems pertaining to people. Prerequisite: GEOG 421 or 422.

752 THEMES IN CULTURAL GEOGRAPHY (3+0) 3 credits
Uses the topical approach in the study of the roles played by such factors as population, race, social traits, economy, politics in shaping the diverse cultural regions of the earth.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits
For majors in the land use planning policy master's program only.

Inactive Courses
370 HISTORY OF MAPPING (2+0) 2 credits
422, 622 APPLIED CLIMATOLOGY (3+3) 4 credits
442, 642 HISTORICAL GEOGRAPHY (3+0) 3 credits
448, 648 ENVIRONMENTAL PERCEPTION (3+0) 3 credits
478, 678 AFRICA (3+0) 3 credits
486, 686 ASIA (3+0) 3 credits

GEOLOGICAL ENGINEERING (G E)

106 INTRODUCTION TO GEOLOGICAL ENGINEERING (1+0) 1 credit
Historical background to includes seismic hazards, landslides, tunnelling, groundwater, exploration and mining geology, remote sensing, geophysics. Field trip required.

385 GEOLOGICAL ENGINEERING DATA ANALYSIS (3+0) 3 credits
Introduction to and application of statistics, probability and economic theory to analysis of geological data for the design of engineered structures interfacing with the earth. Prerequisite: MATH 181, 182 or equivalent.

404, 604 INTRODUCTION TO AEROSPACE REMOTE SENSING (2+3) 3 credits
Characteristics of electromagnetic radiation in the ultraviolet, visible and solar infrared portions of the spectrum. Physical basis for spectral properties of rocks, soils, vegetation and water. Applications of data collected by aircraft, spacecraft and satellite systems to mineral and energy exploration, engineering and environmental studies and hydrology/hydrogeology. Prerequisite: GEOL 341, 446, 646. (Same as RWF 404, 604.)

478, 678 COMPUTER APPLICATIONS IN GEOLOGICAL ENGINEERING (3+0) 3 credits
Application of FORTRAN and BASIC for solution of problems pertinent to geological engineering, including ore reserve calculation, slope design, and data management. Prerequisite: C S 113.

479, 679 EARTHQUAKE ENGINEERING (3+0) 3 credits
Seismic hazards, including plate tectonics, faulting, seismicity, seismometry, strong earthquake motions. Effects of earthquakes on soils, man-made structures. Characteristics of earthquake resistant structures. Prerequisite: general calculus, physics; M E 299. (Same as C E 479, 679.)

480, 680 ENVIRONMENTAL GEOLOGY (2+3) 3 credits
Relationship between geological materials, processes and history and man's safety, health and quality of environment. Includes lectures, discussions and field trips dealing with geological hazards in urban development. Prerequisite: upper-division standing in geology, geophysics, or engineering.

481 INTRODUCTION TO GEOMECHANICS (3+0) 3 credits
Essentials of rock fracture relevant to geological engineering, including stress and strain, properties and classification of continuous and discontinuous rock masses, and mechanism of rock fracture. Corequisite: GEOL 332.

483, 683 GEOLOGICAL ENGINEERING SLOPE STABILITY (3+0 or 3) 3 or 4 credits
Application of geological and engineering factors in the design and stability of natural and man-made rock and soil slopes. Corequisite: C E 372; GEOL 332.

484, 684, GROUNDWATER HYDROLOGY (3+0) 3 credits
Hydrologic, geologic and other factors controlling groundwater flow, occurrence, development, chemistry and contamination. Elementary groundwater flow theory. Interactions between surface-subsurface hydrologic systems. Prerequisite: CHEM 102; GEOL 101; MATH 216; PHYS 152.

485, 685 WASTE CONTAINMENT: THEORY AND PRACTICE (3+3) 4 credits
Geotechnical and geohydrogeological aspects of the design, construction, and monitoring of land fills and hazardous wastes in surface and underground structures. Prerequisite: GEOL 322; MATH 281.

487, 687 GEOLOGICAL ENGINEERING DESIGN (2+6) 4 credits
Techniques and design of earth and rock structures, exploration programs, groundwater and mine feasibility projects. Prerequisite: G E 385, 483; GEOL 451.

740 DESIGN OF SURFACE AND UNDERGROUND EXCAVATIONS (3+0) 3 credits
Design techniques for excavations in hard and soft rocks, soil masses. Stability problems. Rock and soil reinforcement, lining design. Computer applications, field trips. Prerequisite: C E 492.

741 STATE OF THE ART IN GELOGICAL ENGINEERING (3+0) 3 credits
Recent advances in geological engineering research. Materials just published and not incorporated into other courses. Prerequisite: G E 740.

742 DEBRIS AND SNOW AVALANCHES (2+3) 3 credits
Avalanche dynamics. Mechanics of flow movement of viscous, viscoelastic and cohesionless materials. Triggering mechanisms and slope stabilization. Route selection, planning and avalanche prediction. Design of avalanche defenses.

743 GEOSTATISTICS (3+0) 3 credits
Introduction to geostatistical data estimation using the concepts of variograms, kriging, cokriging, multivariate techniques, correlation analysis and regression. Prerequisite: MATH 251.

744 MECHANICS OF FRACTURES IN ROCK (3+0) 3 credits
Fundamental concepts of fracture mechanics of rock including analysis of dilantant cracks, faults, and tectonic implications. Seminar format stresses application of theoretical concepts to field examples of rock fractures. Prerequisite: GEOL 332.

745 TOPICS IN ADVANCED GEOMECHANICS (3+0) 3 credits
Quantitative analysis of brittle deformation using analytical and numerical methods. Use of Boundary Element Method stressed. Prerequisite: GEOL 332.

GEOLOGY (GEOL)

101 OUR DYNAMIC PLANET EARTH (3+1) 3 credits
Includes plate tectonics, oceans, atmosphere, Ice Ages, minerals, rocks, mass extinctions, rivers, earthquakes and volcanoes. Two field trips required. Prerequisite: MATH 120 or equivalent.

102 HISTORY OF THE EARTH (3+3) 4 credits
Origin and history of the earth with a description of the life of the successive geologic periods. Laboratory exercises in the interpretation of geologic history from maps and fossil study. Prerequisite: GEOL 101.

103 PHYSICAL GEOLOGY LABORATORY (0+3) 1 credit
Exercises on plate tectonics, minerals, rocks, maps, aerial photos, ground water, rivers, earthquakes and planets. Prerequisite or corequisite: GEOL 101.

105 INTRODUCTION TO GEOLOGY (1+0) 1 credit
Brief study of physical and historical geology, with emphasis on the structure of the earth, origin of past and present landscapes, and evolution of life as told in the fossil record.

160 THE PARADE OF LIFE (3+0) 3 credits
Survey of the history and classification of fossil plants and animals. Methods of interpretation of the fossil record. Evolution of form and structure and the sequence of fossils in rocks. Occasional Saturday field trips.

211 MINERALOGY (2+3) 3 credits
Crystallography, crystal chemistry and the origin and determination of ore minerals and rock-forming minerals. Prerequisite: elementary chemistry and trigonometry.

212 ELEMENTARY PETROLOGY (2+3) 3 credits
Identification of the common igneous, sedimentary. and metamorphic rocks using hard specimens supplemented with thin sections. Introduction to the principal rock-forming processes. Prerequisite: GEOL 211.

250 GEOLOGY FOR ENGINEERS (2+3) 3 credits
Minerals, rocks, principles of physical and structural geology, introduction to ground water, earthquakes and geophysics. Influence of geology on engineering design and construction procedures. Prerequisite: C E 246.

290 PLATE TECTONICS AND GEODYNAMICS (3+0) 3 credits
Elementary geophysical concepts related to gravity, magnetism, seismic waves. Stress and strain in fault zones, earthquakes and fault creep, earthquake prediction and control. Sea-floor spreading and global tectonics. Prerequisite: GEOL 101.

309 MUSEOLOGY (3+0) 3 credits
(See ANTH 309 for description)

332 STRUCTURAL GEOLOGY (2+6) 4 credits
Structural features of the earth's crust. Laboratory work involves the study and preparation of geologic maps and cross sections. Prerequisite: GEOL 101 and trigonometry.

341 GEOMORPHOLOGY (2+3) 3 credits
Surface processes and the development of geomorphic features. Interpretation of topographic maps and air photographs. Emphasis on classic features of the Basin and Range province. Prerequisite or corequisite: GEOL 101 or GEOG 103 and GEOL 332.

351 INTRODUCTION TO GEOCHEMISTRY (3+0) 3 credits
Survey of premises and applications of geochemical studies. The distribution of elements in rocks; the periodic table and its usefulness in predicting geochemical behavior, chemical equilibria in natural systems; diadochy and isomorphism; the phase rule and phase equilibria; Eh and pH diagrams. Prerequisite: GEOL 211, 212.

402, 602 THE OCEANS (3+0) 3 credits
Overview of geological, chemical, physical, and biographical oceanography covering how the oceans work and how they influence our lives.

414, 614 HYDROLOGIC FLUID DYNAMICS (3+0) 3 credits
Physical principles governing natural flows in the land phase of the hydrologic cycle: open channel and saturated/unsaturated porous media flow. Erosion and sediment transport. Prerequisite: PHYS 201, MATH 281. (Same as RWF 414, 614.)

415, 615 GEOLOGICAL THERMODYNAMICS (3+0) 3 credits
Reversible and irreversible thermodynamics. Includes first law, second law, Gibbs equation, entrophy production, flows and forces, transport processes, electrochemical processes. Prerequisite: MATH 181,182.

417, 617 INSTRUMENTAL METHODS IN DETERMINATIVE MINERALOGY (2+3) 3 credits
Principles, operations, and applications of available instruments in the qualitative and quantitative investigations of geologic, materials. Includes X-ray, thermal, atomic absorption, and neutron activation analyses.

425, 625 ADVANCED MINERALOGY (2+3) 3 credits
Optical mineralogy; chemical composition and optical properties of rock-forming minerals; introduction to phase petrology; theory and application of x-ray and microbeam methods to geological problems. Prerequisite: CHEM 202; GEOL 212; PHYS 202.

427, 627 ADVANCED PETROLOGY (2+3) 3 credits
Description and interpretation of rocks. Emphasis on rock-forming processes as deduced from textural, small-scale structural and mineralogical characteristics. Prerequisite: GEOL 425 or equivalent.

446, 646 PHOTOGEOLOGY-IMAGE INTERPRETATION (1+
Application of photogeologic and image interpretation tech study and evaluation of terrestrial landscapes. Corequisite: GEC

450 FIELD METHODS (0+3) 1 credit
Introduction to methods and instruments used by field geologi ing elementary photogrammetry.

451 SUMMER FIELD GEOLOGY 3 or 6 credits
Study and preparation of maps to accompany reports on areas o tary and igneous rocks in the Basin and Range region. Three- o course in geologic field methods beginning in early June. Pr GEOL 212, 332, 341, 450. Fee to cover cost of board and transpo

453, 653 GEOPHOSICAL APPLICATIONS (2+3) 3 credits
Surveys current problems in planetary physics, geodynamics, exploration and development, environmental assessment, na ards, and national security. Includes a one-week geophysical fi Prerequisite: GEOL 450. Corequisite: GEOL 455, 492 or 494.

455, 655, GEOPHYSICS AND GEODYNAMICS (4+0) 4 credit Structure, composition and evolution of the planet earth; integrat and potential fields data to study plate tectonics and dynamic pr the earth's interior. Prerequisite: general calculus; physics; geology.

456, 656 PLATE TECTONIC THEORY (3+0) 3 credits
Geological and geophysical evidence for plate tectonics. Cover spreading, triple junctions, continential and ocianic lithosphere, p netism, polar wandering. Prerequisite: general calculus; physics

461, 661 INVERTEBRATE PALEONTOLOGY (3+3) 4 credits
Structure and evolutionary development of fossil invertebrates existing representatives. Application of paleontology to stratigrap lems. A two-day collecting trip will be arranged early in Octobe uisite: GEOL 102 or BIOL 383, 384.

462, 662 MICROPALEONTOLOGY (2+6) 4 credits
Study of microfossils, chiefly Foraminiferida and Ostracoda. (ation of other groups including spores and pollen and nannofos

464-465, 664-665 STRATIGRAPHIC PALEONTOLOGY (2+3) 3 credits each
Succession of invertebrate faunas from the Cambrian to the Pl with emphasis on index fossils, faunal distributions, and pale systems. Spring term covers Paleozoic; fall term covers Meso Cenozoic. Prerequisite: GEOL 461.

468, 668 SEDIMENTOLOGY (2+3) 3 credits
Processes that deposit and modify sediments and the aspects of s tary rocks that allow interpretation of depositional environments uisite: GEOL 102, 212.

469, 669 PRINCIPLES OF STRATIGRAPHY (3+0) 3 credits
History and methods of stratigraphic analysis and applications to cal and geophysical problems. Prerequisite: GEOL 102, 212, 332,

471, 671 ORE DEPOSITS (2+3) 3 credits
Genesis and localization of metalliferous ore deposits, including expression, secondary effects in the weathering zone, wall rock al and hypogene zoning. Prerequisite: GEOL 212, 332.

474, 674 HYDROGEOLOGY LABORATORY (0+3) 1 credit
Field, laboratory and computer experiments in hydrogeology in determination of hydraulic properties, aquifer testing, well design, analysis, hydrogeochemical sampling/analysis. Corequisite: G I equivalent.

476, 676 NONMETALLIC MINERAL DEPOSITS (3+0) 3 credits
Occurrence, distribution, origin, and economic value of the non minerals. Prerequisite: GEOL 471.

486, 686 FIELD GEOPHYSICS (0+3) 1 credit
Geophysical exploration and engineering: electrical and seismic re surveys. Field work, presentation of data, interpretation, and Prerequisite: GEOL 450, 492.

489, 689 EXPLORATION AND MINING GEOLOGY (3+3) 4 credits
Geologic and economic principles and the technology used in exploration, evaluation, development, and mining of ore deposits. Mine mapping, field trips. Prerequisite: GEOL 471.

490, 690 ELEMENTARY SEISMOLOGY (3+3) 4 credits
Elastic wave equation and characteristics of its solution in terms of rays and modes. Earth structure, earthquake source, seismic instrumentation, interpretation of seismograms, seismicity, prediction. Prerequisite: MATH 285; PHYS 202.

492, 692 GEOPHYSICAL EXPLORATION I: SEISMIC METHODS (3+3) 4 credits
Principles and application of seismic reflection and refraction. Prerequisite: GEOL 332; MATH 182; PHYS 152, 202.

493, 693 GEOPHYSICAL EXPLORATION II: POTENTIAL FIELD TECHNIQUES (3+3) 4 credits
Principles and application of gravity, magnetics and electrical techniques to determination of subsurface structure and exploration for mineral deposits. Prerequisite: physical geology; general calculus; physics.

495, 695 SPECIAL PROBLEMS 1 to 5 credits each
Independent study or research. Consists of conferences, reading, laboratory or field work. Maximum of 10 credits to pursue different studies.

497, 697 SPECIAL TOPICS IN GEOLOGICAL SCIENCES 1 to 6 credits
Study of selected topics by conferences, lectures, colloquia, seminars, and laboratory or field work. May be repeated to a maximum of 10 credits in different topics.

701-702 ADVANCED GEOLOGY 1 to 5 credits each
(a) General geology, (b) regional geology, (c) mineralogy, (d) petrology, (e) petrography, (f) geochemistry, (g) structural geology, (h) geophysics, (j) geomorphology, (k) paleontology, (m) sedimentation, (n) stratigraphy, (p) mineral deposits, (r) economic geology, (s) ground water, (t) engineering geology, (u) photogrammetry, (v) seismology, (w) instrumental analysis, (x) teaching of earth sciences, (y) mineral exploration, (z) earth science. Consists of either lectures, periodic conferences, supervised reading, laboratory or field work. May be repeated more than once to pursue different studies.

704 ADVANCED AEROSPACE REMOTE SENSING (2+3) 3 credits
Thermal and radar remote sensing techniques. Thermal properties of rocks, soils, vegetation and water including thermal inertia and spectral emissivity. Microwave evaluation of surface topography, roughness and dielectyric constant using multi-frequency and multi-polarization radar. Applications of air-craft, spacecraft and satellite systems to geologic and hydrologic problems. Prerequisite: GEOL 404, 604.

705 INVERSE PROBLEMS FOR EARTH SCIENCES (3+0) 3 credits
Strategies for inferring internal properties of earth with exact and uncertain data. Applications include current topics in seismology, gravity, magnetics, other fields of geophysics. Prerequisite: MATH 330.

706 GEOPHYSICAL SERIES AND FILTERING (3+0) 3 credits
Application of discrete series theory to geophysical problems. Includes transforms, filters deconvolution, estimation, and resolution as applied in seismic processing and other geosciences specialties.

715 GEOCHEMISTRY (3+0) 3 credits
Origin and abundance of elements in nature; their distribution and migration in geochemical spheres of the earth; geochemistry of solids; isotope and historical geochemistry. (Alternates with GEOL 724.)

716 LOW TEMPERATURE AQUEOUS GEOCHEMISTRY (3+0) 3 credits
Physical chemistry of electrolyte solutions, oxidation and reduction, surface effects, combination diagrams, precipitation and dissolution. Computer used to calculate various thermodynamic parameters. Prerequisite: GEOL 415; GEOL 724 recommended.

717 EXPLORATION AND MINE GEOCHEMISTRY (2+3) 3 credits
Theory, field and laboratory methods and application of rock, soil, sediment, water, and plant geochemistry to mineral exploration, property evaluation, mine development and grade control.

718 CHEMISTRY OF ENVIRONMENTAL WATERS AND ISOTOPES (3+0) 3 credits
Basic principles of utilizing isotopes to examine hydrologic systems; includes stable and radioactive isotopes. Basic examination of water quality standards. Prerequisite: GEOL 484, 684.

723 VOLCANIC GEOLOGY (2+6) 4 credits
Field relations, mapping, volcanic stratigraphy, correlation, dating, petrography of volcanic, subvolcanic, volcaniclastic rocks; volcanic centers, collapse calderas, regional relations, volcanotectonic setting; associated mineralization; field trips. Prerequisite: GEOL 332, 425, 625 or equivalent.

724 PHASE PETROLOGY (3+0) 3 credits
Phase equilibrium, paragenetic relations, and stabilities of minerals and mineral assemblages in the light of thermodynamic principles. Apparatus and techniques for high P-T experiments related to igneous and metamorphic petrology. Prerequisite: GEOL 415, 615. (Alternates with GEOL 715.)

725 ORE PETROLOGY (2+6) 4 credits
Microscopic identification and study of opaque minerals and ore mineral suites. Ore textures and interpretation. Use of X-ray diffraction, reflectance and microhardness determinations in opaque mineral studies. Prerequisite: GEOL 425, 471.

726 VOLCANIC PETROLOGY (2+3) 3 credits
Origin and evolution of magmas through partial melting, fractionation and mixing; mineralogy, elemental and isotopic geochemistry, and phase petrology; modern analytical, calculation, and discrimination procedures. Prerequisite: GEOL 425, 427-428 or equivalent; GEOL 725 is desirable.

727 PETROLOGY OF PLUTONIC ROCKS (2+3) 3 credits
Theoretical and petrographic investigations of crystallization of silicate melts in the plutonic environment. Includes consideration of magma source and the magmatic-metamorphic boundary problem. Prerequisite: GEOL 425 and 427 or equivalent. (Alternates with GEOL 728.)

728 METAMORPHIC PETROLOGY (2+3) 3 credits
Theoretical and petrographic study of metamorphic mineral assemblages including problems of equilibrium-disequilibrium, process lending to the development of fabric, and elementary petrofabrics. Prerequisite: GEOL 425, 427 or equivalent. (Alternates with GEOL 727.)

729 SEDIMENTARY PETROLOGY (2+3) 3 credits
Methods of study of the properties of sedimentary rocks leading to the interpretation of syngenetic, diagenetic and epigenetic history. Prerequisite: GEOL 425, 469.

730 ADVANCED GEOLOGY OF NEVADA (2+0) 2 credits
Tectonic and stratigraphic development of Nevada through geologic time. A two- or three-day field trip to significant areas is required early in the semester. Prerequisite: stratigraphy and structural geology.

731 STRUCTURAL GEOLOGY SEMINAR (2+3) 3 credits
Structural features of the earth's crust, their distribution and the mechanics of their formation. Prerequisite: GEOL 332.

735 NEOTECTONIC GEOLOGY (1+3) 2 credits
Relationship between earthquake or aseismic tectonic activity and deformation. Methods and principles for determining design earthquakes.

736 ACTIVE FAULTING (1+3) 2 credits
Tectonic, geomorphic and soil-stratigraphic character of active faults and folds of extensional, compressional and transform settings.

750 PRIMARY SEDIMENTARY STRUCTURES (3+0) 3 credits
Features of sedimentary rock attributed to their environment of deposition and techniques used to constrain their interpretation. Prerequisite: GEOL 469 or 669, or equivalent.

756 EARTHQUAKE SOURCE PHYSICS (3+0) 3 credits
Earthquake source physics based on application of theory, observations, and experiments.

757 SEISMIC IMAGING (3+0) 3 credits
Theory and application of high-resolution exploration for earth structure and composition, including stack, multi-offset, and 3-D migration; coherency, velocity spaces, and diffraction tomography.

758 SEISMIC INSTRUMENTATION AND DATA ANALYSIS (3+0) 3 credits
Seismic instrumentation and data analysis based on application of theory, observations and experiments.

761 MAGNETISM AND EARTH (3+0) 3 credits
Fundamentals of geomagnetism, paleomagnetism and rock magnetism and their applications to plate tectonics, structural geology, and basin history.

770 ECONOMIC GEOLOGY SEMINAR (1+0) 1 credit
Selected topics in economic gelogy and mineral deposit studies. Credit may also be earned through formal presentation at, or coordination of, economic geology lecture series. Maximum of 1 master's credit or 3 doctoral credits.

771 HYDROTHERMAL MINERAL DEPOSITS (2+3) 3 credits
Description, geologic setting, field relations, classification; active geothermal and fossil hydrothermal systems; fluid chemistry, ore transport and precipitation; stable isotopes; exploration and evaluation procedures. Prerequisite: GEOL 425, 625, 471, 671 or equivalents.

772 HYDROTHERMAL ALTERNATION AND VEIN PETROLOGY (1+3) 2 credits
Description, occurrence, practical application, and genesis of hydrothermal altered rocks and vein materials; study of rocks in hand specimen and thin section; field trip(s). Corequisite or prerequisite: GEOL 771 or equivalent. Prerequisite: Geol 425, 625 or equivalent.

773 MINERAL EXPLORATION SEMINAR (1+0) 1 credit
Seminar on a current topic in geology, geophysics, or geochemistry in exploration for hard minerals in the Cordillera.

774 ADVANCED SEISMOLOGY I (3+0) 3 credits
Applications of theory and experiments to seismological problems; representation theorem; synthetic near field and body wave seismograms.

775 ADVANCED SEISMOLOGY II (3+0) 3 credits
Theory and experiments to seismological problems; far field, surface waves and free oscillations.

776 FLUID INCLUSIONS IN HYDROTHERMAL SYSTEMS (1+3 or 6) 2 or 3 credits
Occurrence, theory, and practical applications of fluid inclusions; study of inclusions in this section; preparation of doubly-polished plates; heating/freezing stage measurements; optional project. Prerequisite or corequisite: GEOL 771 or equivalent. Prerequisite: GEOL 425, 625 or equivalent.

779 COMPUTER ANALYSIS OF AEROSPACE REMOTE SENSING DATA (2+3) 3 credits
Principles of computer processing of electromagnetic remote sensing data including computer systems and software programs used for radiometric and geometric correction, filtering, image enhancement, image transformation and image classification. Applications of computer processing techniques to mineral and energy exploration, engineering and environmental geology and hydrology/hydrogeology. Prerequisite: GEOL 404, 604 or 704.

782 HYDROLOGY/HYDROGEOLOGY SEMINAR (0+3) 1 credit
(See RWF 782 for description.)

783 GROUNDWATER HYDRAULICS (3+0) 3 credits
Mechanics of groundwater flow through porous and fractured media; boundary conditions and analytical solutions to subsurface flow problems including flow to wells; aquifer parameter estimation. Prerequisite: M E300 or MATH 320.

784 UNSATURATED GROUNDWATER FLOW (3+0) 3 credits
Theory of fluid, contaminant, and vapor transport in the vadose zone including the relevant surface physics and chemistry, thermodynamics, and appropriate mathematical development. Prerequisite GEOL 783.

785 INTRODUCTION TO GROUNDWATER MODELING (3+0) 3 credits
Numerical solution of the ordinary and partial differential equations of groundwater flow and contaminant transport. Emphases on learning methodology and solving applied problems. Prerequisite: FORTRAN; GEOL 783.

786 CONTAMINANT TRANSPORT IN GROUNDWATER FL SYSTEMS (3+0) 3 credits
Theoretical and applied study of solute transport phenomena. A: and numerical solutions of the advective-dispersion equation a techniques for solving groundwater contamination problems. P site: GEOL 783; MATH 320.

789 SEMINAR IN AEROSPACE REMOTE SENSING (1+0 or 3) 1 or 2 credits
Presentations on student and faculty research in aerospace remote Reviews of current research topics involving the applications of ae methods to study of geoscience problems in the Great Basin. Prer GEOL 404, 604, 704.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
201 GEOLOGY OF NEVADA (2+0) 2 credits
203 PROSPECTING TECHNIQUES (1+1 or 2) 1 to 3 credits *S/U on*
381 APPLIED GEOLOGY (3+0) 3 credits
481, 681 TECTOGENESIS AND GEOTECHNOLOGY (2+6) 4 cred
482, 682 GEOLOGY OF ENERGY (3+0 or 3) 3 or 4 credits
487 687 MINING GEOLOGY (2+3) 3 credits
488 688 EXPLORATION GEOLOGY (3+0) 3 credits
651 SUMMER FIELD GEOLOGY 3 or 6 credits
710 HISTORY OF GEOLOGY (2+0) 2 credits
780 HYDROGEOLOGIC SYSTEMS (3+0) 3 credits
790 MINERAL INDUSTRY SEMINAR 1 to 3 credits

HISTORIC PRESERVATION (H P)

400, 600 PRINCIPLES OF HISTORIC PRESERVATION (3+0) 3 c
Development of preservation movement and philosophy in the U Europe; legal aspects and subfields of historic presentation. Case stu local, state and federal projects and problems.

401, 601 LAWS AND POLICIES (3+0) 3 credits
Intensive review of agencies, laws, guidelines, policies, ordinanc building codes relating to historic preservation and its sub-fields studies in preservation law. Prerequisite: H P 400 or 600.

402, 602 HISTORY OF AMERICAN ARCHITECTURE (3+0) 3 cre
Survey of major historic American architectural styles and Eur antecedents; consideration of architectural history in relation to h preservation planning and technology.

403, 603 WORLD ARCHITECTURE (3+0) 3 credits
Historical survey of world architectural styles; styles seen as reflecti major sociocultural patterns of technology, ideology and historica c tions.

405, 605 HISTORIC PRESERVATION SURVEY AND PLANNIN 3+0) 3 credits
Survey archival and field research practices; formulation of historic p vation plans; procedures for integration with local and regional r plans. Case studies. Prerequisite: H P 400, 401, 600, 601.

470, 670 RESEARCH PRACTICUM (3+0) 3 credits
Field and archival recording and research; methods of recording hi structures and objects; development of historic overlays; nominatio cedures of the National Register of Historic Places. Prerequisite: H 401, 600, 601.

475, 675 TECHNIQUES OF PRESERVATION AND CONSERVA (3+0) 3 credits
Methods, techniques and materials for preserving, stabilizing, rest and adaptively reusing historic structures, conservation methods fo historic sites. Field trips to local and regional preservation projects. Pr uisite: H P 400, 401, 600, 601.

480, 680 INTERNSHIP (3+0) 3 credits *S/U only*

Practical working experience in local, state or federal historic preservation agencies. Maximum of 6 credits. Prerequisite: H P 400, 401, 600, 601.

499, 699 SPECIAL PROBLEMS 1 to 6 credits
Research or reading in special topics under supervision. Maximum of 6 credits. Prerequisite H P 400, 401, 600, 601.

HISTORY (HIST)

101 UNITED STATES (3+0) 3 credits
U.S. political, social, economic, diplomatic and cultural development from colonial times to 1865. Includes examination of the U.S. Constitution and satisfies the U.S. Constitution requirement.

102 UNITED STATES (3+0) 3 credits
U.S. political, social, economic, diplomatic and cultural development from 1865 to the present. Includes examination of the Nevada Constitution and satisfies the Nevada Constitution requirement.

105 EUROPEAN CIVILIZATION (3+0) 3 credits
Development of western civilization from the dawn of history to 1648.

106 EUROPEAN CIVILIZATION (3+0) 3 credits
Development of western civilization from 1648 to the present.

111 SURVEY OF AMERICAN CONSTITUTIONAL HISTORY (3+0) 3 credits
Origins and history of the constitutions of the U.S. and state of Nevada; surveys the development of American judicial interpretations and institutions. Satisfies the U.S. and Nevada Constitutions requirements.

202 AMERICAN MILITARY HISTORY (2+0) 2 credits
Review from 1776, emphasizing wars, interwar periods, military thought and policy, and relationship of the armed forces to society.

217 NEVADA HISTORY (3+0) 3 credits
Nevada history from early exploration to the present. Includes examination of the Nevada Constitution and satisfies the Nevada Constitution requirement.

281 INTRODUCTION TO THE HISTORY OF SCIENCE (3+0) 3 credits
History of the physical, mathematical, natural, biological and medical sciences from the ancient world to the Scientific Revolution of the 17th century.

282 INTRODUCTION TO THE HISTORY OF SCIENCE (3+0) 3 credits
History of the physical, mathematical, natural, biological and medical sciences from the 17th century to the present.

301-302 IDEAS, VALUES AND CULTURES (3+0) 3 credits each
Ideas, values and cultures as they relate to the concepts of man, society and the cosmos. Includes Western, non-Western and women's primary source material.

309 MUSEOLOGY (3+0) 3 credits
(See ANTH 309 for description.)

310 MUSEUM TRAINING FOR HISTORIANS (2+2) 3 credits
Operation and administration of historical museums, including training in archival procedures, publications and related museum management procedures.

312 THE EXPANSION OF THE U.S. (3+0) 3 credits
Expansion and growth of the U.S. with emphasis on the "westward movement"; the conquest and settlement of regions west of the Appalachian Mountains.

315 TRANS-MISSISSIPPI WEST (3+0) 3 credits
U.S. exploration, conquest and settlement of western North America.

316 AMERICAN ENVIRONMENTAL HISTORY (3+0) 3 credits
American attitudes and policies toward the environment emphasizing themes of exploitation, preservation and conservation from the Puritans to the late 20th century ecological movement.

317-318 HISTORY OF RELIGION IN THE U.S. (3+0) 3 credits each
Selected topics on major trends, issues, and personalities within American religious traditions and their relationship to the political and social life of the nation. HIST 317 covers the period to 1900; 318 covers the 20th century.

328 CONTEMPORARY CIVILIZATION (3+0) 3 credits
Institutional developments, events, trends and conflicts since World War II are summarized and interpreted in the light of the recent past.

343-344 LATIN AMERICA (3+0) 3 credits each
Development of the Iberian states as colonizing powers, the discovery and conquest of America, the growth of political, social and economic institutions during the Colonial period, the independence movement in Spanish and Portuguese America and the historical development of the leading republics since independence.

345 LATIN AMERICA IN WORLD AFFAIRS (3+0) 3 credits
Emphasizes the relations of Latin America with the U.S. and other world powers; Pan-Hispanism; Pan-Americanism and its relation to world organization; the role of Latin America in the community of nations.

346 MEXICO, CENTRAL AMERICA, AND THE CARIBBEAN (3+0) 3 credits
Discovery, conquest, growth of political, social and economic institutions. Socio-economic development and foreign relations since 1850 are stressed.

351-352 THE FAR EAST (3+0) 3 credits each
Historical development of China, Japan and Southeast Asia in the 19th and 20th centuries. Emphasis is placed upon such subjects as commercial and colonial expansion, the opening of China and Japan, the growth of colonial imperialistic and nationalistic interests among the western powers and Japan, and the rise of Communist power in Asia.

353 RECENT HISTORY OF THE FAR EAST (2+0) 2 credits
The Far East in the aftermath of World War II.

361-362 THE MIDDLE EAST (3+0) 3 credits each
Survey of the Middle East with emphasis on its impact on European history.

371-372 ANCIENT CIVILIZATION (3+0) 3 credits each
Political, social, economic and cultural development of the ancient Near East, Greece and Rome; the elements of ancient civilization that contributed vitally to medieval and modern civilization.

373 MEDIEVAL CIVILIZATION (3+0) 3 credits
Europe from the disintegration of the Roman Empire to the age of the Renaissance.

377-378 EUROPEAN SOCIAL HISTORY (3+0) 3 credits each
Topical survey of European society emphasizing the formation of classes, the family, women, crime, material culture and popular culture. HIST 377 covers preindustrial Europe; HIST 378 covers industrial and postindustrial Europe.

384 THE AGE OF THE RENAISSANCE (3+0) 3 credits
Cultural, social, intellectual, religious, economic and political history of Europe, 1300-1520.

385 REFORMATION EUROPE AND THE AGE OF THE BAROQUE (3+0) 3 credits
Political, social, intellectual, religious and cultural history of Europe in the 16th and 17th century.

393-394 ENGLAND AND THE BRITISH EMPIRE (3+0) 3 credits each
History of England and its empire: social, economic and political development. Background of English literature and law. Second semester begins at Elizabethan Age.

395 THE IRISH AND OTHER CELTS: A HISTORY OF SURVIVAL (3+0) 3 credits
The 3,000-year history and culture of the Irish, Scots, Welsh and related peoples. Special notice is given to their tenuous survival and extensive migrations.

401-402, 601-602 AMERICAN CONSTITUTIONAL HISTORY (3+0) 3 credits each
Narrative and interpretive study of the origin and growth of the constitutional system. May be used to satisfy requirement in U.S. Constitution.

403-404, 603-604 AMERICAN INTELLECTUAL AND SOCIAL HISTORY (3+0) 3 credits each
Topical examination of the major currents in American life with emphasis on social, cultural, and intellectual development, and the impact of industrialization in the modern world.

405, 605 HISTORY OF WOMEN IN THE UNITED STATES (3+0) 3 credits
Experiences and activities of women in the home and American society from the colonial period to the present.

406, 606 HISTORY OF AMERICAN IMMIGRATION (3+0) 3 credits.
Origins, experiences, and reception of U.S. immigrants from the colonial period to the present.

407-408, 607-608 AMERICAN DIPLOMATIC HISTORY (3+0) 3 credits each
Origins, character and consequences of American foreign policies from the Revolutionary War to the present.

409, 609 U.S. AGRICULTURAL HISTORY (3+0) 3 credits
Colonial beginnings of American agriculture, the advance of the American agricultural empire into the greater West, the accompanying industrial revolution in agriculture and the role of government in 20th century agricultural policy. Regional characteristics of American agriculture.

410, 610 20TH CENTURY AMERICAN WEST (3+0) 3 credits
Political, economic, and social problems growing out of the twentieth century West, including the Plains States, the Rocky Mountains and Pacific Coast with emphasis on the West's integration into the industrial and urban life of the nation and the interaction of the region with the Federal Government.

411, 611 U.S.: COLONIAL PERIOD TO 1763 (3+0) 3 credits
Origins of the North American colonies; development of colonial society, culture and institutions; international rivalry for North American supremacy.

412, 612 ERA OF THE AMERICAN REVOLUTION, 1763-1789 (3+0) 3 credits
Imperial reorganization and colonial protest, the War for Independence, government under the Articles of Confederation, formation of the Federal Constitution.

413, 613 U.S.: NATIONAL PERIOD, 1789-1850 (3+0) 3 credits
Development of the new nation, the Federalists and the Jeffersonians, the War of 1812, the Era of Good Feelings, the Age of Jackson, expansion and controversy to the Compromise of 1850.

414, 614 U.S.: CIVIL WAR AND RECONSTRUCTION, 1850-1877 (3+0) 3 credits
Intensification of sectional strife, the road to disunion, the Civil War, the era of Reconstruction.

415, 615 HISTORY OF THE U.S. FROM 1877 TO 1929 (3+0) 3 credits
Emphasis upon political, social, intellectual, economic and diplomatic developments.

416, 616 RECENT HISTORY 1929 TO PRESENT (3+0) 3 credits
The Great Depression and the New Deal, World War II, The Cold War, American society in the Postwar Era.

417, 617 NEVADA AND THE WEST (3+0) 3 credits
Topical examination of Nevada history in relation to issues of western and national significance, e.g., mining, transportation, conservation and development of water resources.

418, 618 HISTORY OF U.S.-AMERICAN INDIAN RELATIONS (3+0) 3 credits
U.S. government relations with tribes and inter-tribal relations from colonial times into the 20th century with emphasis upon constitutional questions.

419 MODERN AMERICAN CIVILIZATION (3+0) 3 credits
Analysis of major themes of American society from World War II to the present. Emphasis upon social, intellectual, cultural and economic life.

421-422, 621-622 HISTORY OF RUSSIA (3+0) 3 credits each
Development of Russian history and society from the Varangians to the present.

423-424, 623-624 HISTORY OF GERMANY (3+0) 3 credits each
Institutional, social, economic and political development of the German states to 1848. Continued through the period of German unification, Empire, the Weimar Republic and the Nazi era.

427, 627 INTELLECTUAL HISTORY OF MODERN EUROPE (3+0) 3 credits
Examination of selected ideas and thinkers who have influenced European civilization since the Renaissance.

428, 628 BASQUE HISTORY (3+0) 3 credits
Political, social and economic history of the Basque provinces and their unique ethnic status within Spain and France.

447-448, 647-648 TOPICAL STUDIES IN AFRICAN HISTORY (3+0) 3 credits each
Ancient empires, the peopling of Africa by its modern inhabitants, European imperialism/colonialism, collaboration and resistance to colonial rule.

449, 649 TOPICAL STUDIES IN AFRICAN HISTORY SINCE 1945 (3+0) 3 credits
Elites and masses in modern Africa, independence and neocolonialism, white Africa, modern African intellectual thought, African nationalism.

455-456, 655-656 BLACK EXPERIENCE IN AMERICA (3+0) 3 credits each
Historical treatment of the Black experience in America, emphasizing the 17th to 20th centuries. Second semester begins in Reconstruction.

461, 661 EUROPEAN CRISIS AND THE AGE OF THE ENLIGHTENMENT (3+0) 3 credits
Development of the economic, political, social and cultural patterns of Europe during the Age of Reason and the Age of the Enlightenment.

462, 662 ERA OF THE FRENCH REVOLUTION, 1763-1815 (3+0) 3 credits
Europe during the age of democratic revolution and the rise and fall of Napoleon Bonaparte.

463, 663 EUROPE: 1815-1914 (3+0) 3 credits
Development of the economic, political social, and cultural patterns of Europe from Waterloo to the outbreak of World War I.

464, 664 EUROPE: 1914 TO THE PRESENT (3+0) 3 credits
Detailed study of an age of conflict and its interludes of peace.

473, 673 PATTERNS OF MEDIEVAL CULTURE (3+0) 3 credits
Selected topics concerning medieval economic, social, political, religious and cultural developments such as feudal society, religious orthodoxy and dissent, universities and chivalry. Maximum of 6 credits.

475, 675 STUDIES IN URBAN HISTORY (3+0) 3 credits
Topical examination of urban development stressing the city in its various political, social and economic aspects. Geographical and chronological emphasis determined by the instructor. Maximum of 6 credits.

480, 680 SCIENCE, TECHNOLOGY, AND SOCIETY (3+0) 3 credits
Interactions of science technology and society. Interdisciplinary analysis of historical and contemporary examples from sciences, technology, arts, literature, and philosophical writing. Discussion of policy questions, technology assessment, and the future. Prerequisite: WT 201, 202, 203. (Same as PHIL 480, 680.)

481, 681 PROBLEMS IN THE HISTORY AND PHILOSOPHY OF SCIENCE (3+0) 3 credits
Selected topics in scientific revolutions, theory choice, discovery, relations of history, philosophy, sociology and psychology of science. Maximum of 6 credits. (Same as PHIL 481, 681.)

486, 686 THE AGE OF DISCOVERY, 1300-1600 (3+0) 3 credits
Great geographical, technological, cultural and intellectual discoveries, with special emphasis on the clash of cultures between Europeans and non-Europeans, 1300-1600.

490, 690 HISTORY OF THE MEDICAL SCIENCES (3+0) 3 credits
Topical history of the conceptual, instrumental and institutional development of the medical sciences from the Greeks to the present.

495, 695 ADVANCED HISTORICAL STUDIES 1 to 3 credits
Maximum of 9 credits. Topics vary from semester to semester.

497, 697 INDEPENDENT STUDY 1 to 3 credits
Maximum of 6 credits.

703 ADVANCED STUDIES IN HISTORY 1 to 3 credits
Maximum of 6 credits.

705 GRADUATE READINGS IN HISTORY 1 to 3 credits
Maximum of 9 credits.

710 SEMINAR IN MEDIEVAL HISTORY (3+0) 3 credits
Maximum of 9 credits.

712 SEMINAR IN MODERN EUROPEAN HISTORY (3+0) 3 credits
Maximum of 9 credits.

713 SEMINAR IN LATIN AMERICAN HISTORY (3+0) 3 credits
Maximum of 9 credits.

716 SEMINAR IN FAR EASTERN HISTORY (3+0) 3 credits
Maximum of 9 credits.

720 SEMINAR IN U.S. COLONIAL HISTORY (3+0) 3 credits
Maximum of 9 credits.

721 SEMINAR IN 19TH CENTURY U.S. HISTORY (3+0) 3 credits
Maximum of 9 credits.

722 SEMINAR IN 20th CENTURY U.S. HISTORY (3+0) 3 credits
Maximum of 9 credits.

724 TOPICAL SEMINAR IN U.S. HISTORY (3+0) 3 credits
Maximum of 9 credits.

725 SEMINAR IN NEVADA AND FAR WESTERN HISTORY (3+0) 3 credits
Maximum of 9 credits.

737 COLLEGE TEACHING IN HISTORY (3+0) 3 credits
Theory and practice in the teaching of history in college. Maximum of 6 credits.

783 HISTORIOGRAPHY (3+0) 3 credits
Extensive readings in the literature of historical methods and a comprehensive survey of historical writing from ancient times to the present.

784 PROBLEMS IN HISTORIOGRAPHY (3+0) 3 credits
Prerequisite: HIST 783 or equivalent.

785 U.S. HISTORIOGRAPHY (3+0) 3 credits
Readings in the literature of American historical writing from colonial times to the present.

786 ORAL HISTORY METHODOLOGY (3+0) 3 credits
Directed, tape-recorded interviewing as a research device and method of primary source documentation in history and the social sciences. Includes practicum.

793 INDEPENDENT STUDY 1 to 3 credits
For students majoring in the tutorial doctoral program in Basque studies. Maximum of 9 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

HONORS PROGRAM (HON)

Interdisciplinary Courses

200 FRESHMAN-SOPHOMORE SEMINAR (3+0) 3 credits
Topic-oriented rather than discipline-oriented analysis of selected subjects consistent with the framework and goals of the honors program of upper-division seminars. (a) The city, (b) the university, and (c) communications. Maximum of 12 credits.

210 GENERAL HUMANITIES (3+0) 3 credits
An integrated perspective of the humanistic disciplines. Three fine arts with philosophy provides the basic materials: literature, graphic arts, and music.

240 AMERICA AND THE FUTURE OF MAN 2 credits
Consists of twenty 1400-word printed lectures written by some of the nation's distinguished scholars and two seminar sessions conducted by university faculty. Printed lectures include such topics as the impact of change on society and on value systems, biological and ethical implications of advances in medicine and genetics, and the future of technology and its effects on the quality of life.

300 SEMINAR THE CITY (3+0) 3 credits
Topic oriented analysis of selected subjects consistent within the framework and goals of the honors program. (a) The city, (b) the university, and (c) communications.

410 AREA STUDY 3 credits
View of a particular region of the world from the perspective of several academic disciplines. Maximum of 9 credits.

421 AGGRESSION: ROOTS AND MANIFESTATIONS (3+0) 3 credits
Causes and consequences of a basic animal and human motive involving several points of view; genetic, biological, psychological, sociological, historical, and political. Maximum of 6 credits.

432 RACE AND ETHNIC RELATIONS (3+0) 3 credits
Consideration of both American and international problems of racial and ethnic relations drawing from anthropology, sociology, psychology, history, and literature.

435 BRIDGING INTELLECTUAL DISCIPLINES (3+0) 3 credits
Methods, values, theories, and directions of two or more academic disciplines in search of their common ground, as well as differences in approaches. Maximum of 6 credits.

443 SCIENCE AND CULTURE (3+0) 3 credits
Historical and philosophical presentation of cultural effects of scientific and technological innovation. Explores ways that science affects various humanistic activities. Maximum of 6 credits.

454 THE CREATIVE ARTS (3+0) 3 credits
Interaction of literature and fine arts. Investigation of creative arts including art history, involving printing, sculpture, music, architecture, and literature. Maximum of 6 credits.

465 AMERICA: INSTITUTIONS AND VALUES (3+0) 3 credits
One or more American institutions or values with a consideration of their evolution and contemporary significance. Maximum of 9 credits.

476 THE FUTURE (3+0) 3 credits
Investigation into future relations between man, his social structure, and his environment. Maximum of 9 credits.

487 REVOLUTION: SOURCES AND MANIFESTATIONS (3+0) 3 credits
Sources and manifestations of economic, social, and political revolution in various countries and areas. Maximum of 6 credits.

498 DYNAMICS OF NATIONAL DEVELOPMENT (3+0) 3 credits
Problems and processes involved in national efforts to achieve various developmental goals. Means and values are emphasized. Maximum of 6 credits.

HUMAN AND COMMUNITY SCIENCES (HCS)

101 INTRODUCTION TO HUMAN AND COMMUNITY SCIENCES (3+0) 3 credits
Survey of current issues related to individuals, families, and communities presented by a variety of disciplines. Forty-five hours of community work is required.

401 HUMAN DIVERSITY AND MULTI-CULTURALISM (3+0) 3 credits
Analysis of biological, psychological, sociological and cultural factors which contribute to human diversity and multi-culturalism within American society.

410,610 PROPOSALS, GRANTWRITING AND EXTERNAL FUNDING (3+0) 3 credits
Grantwriting theory and application through a written proposal created with community agency or faculty member and submitted to a state, foundation or other source.

490 LEADERSHIP IN CONTEMPORARY SOCIETY (2+3) 3 credits
Theory and practice in human and community science disciplines. Emphasis on cultural sensitivity and interpersonal interactions. Some practical applications.

HUMAN DEVELOPMENT AND FAMILY STUDIES (HDFS)

131 CHILD DEVELOPMENT (3+0) 3 credits
Overview of growth and development from the prenatal period through adolescence. Recommended corequisite: HDFS 233.

132 CHILD GUIDANCE AND PARENTING (3+0) 3 credits
Guiding the behavior of children from infancy through adolescence using child development principles appropriate for teachers, parents, and others working with children. Prerequisite or corequisite: HDFS 131 or 274.

200 SPECIAL TOPICS 1 to 3 credits
Study under supervision of a staff member on topics of special interest to the learner. Maximum of 3 credits.

233 PRACTICUM WITH CHILDREN AND FAMILIES (1+2 to 14) 1 to 5 credits
Observing and working in a preschool setting with children and their families. Advance approval required for more than one credit. Prerequisite or corequisite: HDFS 131 or 274. Maximum of 9 credits.

270 FIELD EXPERIENCE 1 to 3 credits *S/U only*
Work with one or more community agencies or firms that utilize expertise in the field of human development and family studies. Maximum of 3 credits.

274 INDIVIDUAL AND THE FAMILY (4+0) 4 credits
Individual bio-psycho-social development. Roles, relationships, and interaction within varied family systems. Lifespan, gender, ethnic and socioeconomic correlates. Critical societal and developmental issues facing families.

341 PERSONAL FINANCE (3+0) 3 credits
Factors relevant to family's and individual's economic functioning in American society. Personal use of money: earning, spending, saving, borrowing, investing, planning.

371 FAMILY RESOURCE MANAGEMENT (3+0) 3 credits
Theory and application in the identification and allocation of human and nonhuman resources. Decision making, communication, time and financial management. Prerequisite: EC 101 or 102; HDFS 274; PSY 101 or SOC 101.

374 COMMUNICATIONS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3+0) 3 credits
Communications process and current techniques in the effective transmission of home economics ideas, attitudes, and subject matter to individuals, families, groups, and mass audiences. Prerequisite: speech.

376 ISSUES IN FAMILY HEALTH (1+1) 1 credit
Analysis of topics related to the family system, physical or mental disorders. health care and well-being of its members. Reciprocal influences on and from society. Prerequisite: 6 credits in human development and family studies or other social science.

400, 600 SPECIAL PROBLEMS 1 to 6 credits
Individual study or research in topic of special interests. Maximum of 9 credits.

430, 630 HUMAN SEXUALITY (3+0) 3 credits
Exploration of masculine and feminine roles as they relate to human development, personal functioning, interpersonal relations and family living in a complex, changing society. Prerequisite: 6 credits in social psychology, psychology, or biological sciences.

431, 631 ADVANCED STUDIES IN HUMAN DEVELOPMENT AND FAMILY (2+2) 3 credits
Theory, research, and issues in one of the following: (a) infancy, (b) early childhood, (c) middle childhood, (d) adolescence, or (e) adult development and aging. Prerequisite: 6 credits in human development and family studies, psychology or sociology.

432, 632 PRESCHOOL FOR SPECIAL CHILDREN AND THEIR FAMILIES (3+0 or 3) 3 or 4 credits
Preschool for children with physical, social/ emotional and cognitive handicaps and gifted children. Particular emphasis on involvement of the families. Fourth credit is experience with special children in a preschool setting. Prerequisite: 6 credits in human development and family studies or special education.

433, 633 ADMINISTRATION OF CHILD AND FAMILY SERVICES (3+0) 3 credits
Administration of programs serving children, adolescents, adults and families; includes philosophy, staffing, operations and legal parameters. Prerequisite: HDFS 131 or 274 or equivalent.

434, 634 FAMILY EDUCATION AND INTERVENTION PROGRAMS (3+0) 3 credits
Educational, intervention and skills-training programs. Developing needs assessments, programs for presentation and evaluation components. Prerequisite: HDFS 274 or equivalent.

435, 635 FAMILY INTERACTION FOR PRESCHOOL SPECIAL EDUCATION (1+0) 1 credit
Principles of family education and intervention program. Only for students in the early childhood special education certificate program.

436, 636 FAMILY INTERACTION (3+0) 3 credits
Review of research and theory on family dynamics, interactions, and processes. Application also of concepts and assessments via mass media and interviews. Examination of functional and dysfunctional patterns. Prerequisite: 6 credits in human development and family studies or other social sciences.

437, 637 DEATH AND DYING: FAMILY AND LIFESPAN PERSPECTIVES (3+0) 3 credits
Overview of death and dying, coping and adaptation as an individual and family experience from prenatal development through adulthood. Emphasis on both personal and professional applications. Prerequisite: 6 credits in human development and family studies, psychology or sociology.

438, 638 CHILDREN AND FAMILIES IN A MULTIETHNIC SOCIETY (3+0) 3 credits
Lifestyles, values and needs of children and their families from diverse ethnic groups. Prerequisite: 6 credits in human development and family studies, psychology or sociology.

439, 639 MINSTREAMED PRESCHOOL CURRICULUM (2+3) 3 credits
Theoretical and practical assessment of curricula for young children, focused on adapting programs to meet the needs of both handicapped and non-handicapped preschoolers. Prerequisite: HDFS 233.

440, 640 PERSPECTIVES ON AGING (3+0) 3 credits
Patterns and dynamics of later life focusing on the family and total ecosystem: natural, socio-cultural, economic, political and human-built environments. Prerequisite: 6 credits in human development and family studies or other social science.

441, 641 CONSUMER CREDIT (3+0) 3 credits
Analysis of use and misuse of consumer credit. Investigation of policies and practices of credit grantors. Examination and application of theories of credit counseling. Prerequisite: EC 101 or 102.

441, 641 CONSUMER CREDIT (3+0) 3 credits
Analysis of use and misuse of consumer credit. Investigation of policies and practices of credit grantors. Examination and application of theories of credit counseling. Prerequisite: EC 101 or 102.

445, 645 THE CONSUMER IN OUR SOCIETY (3+0) 3 credits
Consumer problems, representation, information and protection. The economic system and the role of consumers. The economy and marketplace from the consumer's point of view. Prerequisite: HDFS 371 or 3 to 6 credits of economics.

451, 651 FINANCIAL PLANNING FOR INDIVIDUALS AND FAMILIES (1+0) 1 credit each
(a) Analysis of the individual's/family's financial status; (b) debt management; and (c) development of a personal financial plan.

453, 653 HOUSING AND PUBLIC POLICY (3+0) 3 credits
Social, economic and political aspects of housing. Local, state and federal policies and programs directed at current housing issues. Prerequisite: EC 102; SOC 101; P SC 103.

457, 657 WORK AND THE FAMILY SYSTEM (3+0) 3 credits
Balancing work and family roles, linkages between work and family systems, alternate work arrangements and strategies for improving quality of work life and family life.

458, 658 FAMILIES AND PUBLIC POLICY (3+0) 3 credits
Role of the family in decision making and management of public issues; analysis of legislation directly affecting the family, including experience with the legislature and other policymaking bodies. Prerequisite: HDFS 274 or equivalent; 3 credits of political science or history.

470 PREPROFESSIONAL INTERNSHIP (1+9 or 24) 3 or 8 credits *S/U only*
Supervised field experience with one or more community agencies or firms that utilize expertise in the field of human development or family services. Includes seminar.

471 SENIOR THESIS (3+0) 3 credits
Research conducted and written in thesis form. Prerequisite: statistics and faculty approval.

472 CONTEMPORARY FAMILY ISSUES (3+0) 3 credits
Application of human and community sciences subject matter in the development of problem solving strategies related to issues facing families and individuals. Prerequisite: 6 credits in human development and family studies or other social science.

476, 676 ISSUES IN FAMILY HEALTH (1+1) 1 credit
Analysis of issues related to family and health.

477, 677 SPECIAL ISSUES (1+0) 1 credit each topic
(See CHS 477, 677 for description.)

700 GRADUATE STUDIES IN HUMAN DEVELOPMENT AND FAMILY STUDIES 1 to 3 credits
Advanced study of problems and research in issues related to individual and family studies. Maximum of 6 credits.

720 THEORIES OF HUMAN DEVELOPMENT (3+0) 3 credits
Reading and analysis of original works by classic and contemporary theorists. Application to growth, change and continuity for children, adolescents, and adults.

730 FAMILY THEORIES (3+0) 3 credits
Analysis of current and classical theories as relates to contemporary family structures and issues. Application of theory to research and special topics.

740 FAMILY ECONOMICS AND) MANAGEMENT (3+0) 3 credits
Changing household/family composition, resource production, resource needs. Investigation of the relationships between these changes and the managerial and economic activities of households.

771 RESEARCH METHODS (3+0) 3 credits
Systematic examination of the scope and methods of inquiry and of the present state of research in human development and family studies.

790 SEMINAR (1+0) 1 credit
Clarifies basic philosophical issues in the context of present day society.

791 INTERNSHIP 3 credits
Professional work experience under the supervision of education, business or governmental personnel and university staff member. Advanced approval required. Reports are prepared periodically and at the conclusion of the internship. Prerequisite: HDFS 730, 790 or 740.

796 PROFESSIONAL PAPER 1 to 3 credits *S/U only*
Required of all students who wish to complete an advanced degree using the professional paper option.

797 THESIS 1 to 6 credits

798 PROGRAM DEVELOPMENT AND EVALUATION (2+2) 3 credits
Examination and application of teaching techniques and evaluation of undergraduate program.

Inactive Courses
373 ISSUES IN CONSUMER COMPETENCE (1+0) 1 credit
374 COMMUNICATIONS IN HOME ECONOMICS (3+0) 3 credits

HUMAN ECOLOGY (HUEC)

101 FOUNDATIONS IN HUMAN ECOLOGY (3+0) 3 credits
People and their interaction with cultural, social, economic, physical, and political environments translating demographic and research findings into problem-solving applications.

INTERIOR DESIGN (INTD)

151 FOUNDATIONS FOR DESIGN (1+6) 4 credits
Studio study of design principles, documents, graphic ideation and modeling; both two- and three-dimensional aspects are studied.

200 SPECIAL TOPICS IN INTERIOR DESIGN 1 to 6 credits
Study under supervision of a staff member on topics of special interest to the learner. Maximum of 6 credits.

202 FIELD STUDY 1 to 6 credits *S/U only*
Student-faculty seminar including group travel for field study experience. Maximum of 6 credits.

256 INTERIOR DESIGN I (0+6) 3 credits
Design of residential interiors appropriate for users; programming, space planning, design, and client presentation. Prerequisite: INTD 151; architectural drafting.

270 FIELD EXPERIENCE 1 to 3 credits *S/U only*
Work with firms that utilize interior design subject matter. Maximum of 3 credits.

275 HOUSING (3+0) 3 credits
Housing, both aesthetic and functional, as a framework for family living.

350 SPACE, LIGHT, AND COLOR (3+0) 3 credits
Theories and concepts of space, light, and color relative to design. Prerequisite: INTD 151.

353 HISTORY OF INTERIORS (3+0) 3 credits
Evolution of design in interiors from antiquity to present.

354 INTERIOR PRESENTATION TECHNIQUES (0+6) 3 credits
Professional techniques and media for illustrating interior environments. Prerequisite: INTD 151; architectural drafting.

355 MATERIALS AND RESOURCES (3+0) 3 credits
Materials, surfaces, resources, and applications relevant to interior design.

358 INTERIOR DESIGN II (0+6) 3 credits
Design problems related to business and institutions. Prerequisite: INTD 354.

400, 600 SPECIAL PROBLEMS IN INTERIOR DESIGN 1 to 10 credits S/U *only*
Individual study or research in fields of special interest. Maximum of 10 credits.

402, 602 CONTEMPORARY ISSUES 1 to 10 credits
Topics of current interest to the interior design student and practicing professional. Maximum of 10 credits.

452 CONTEMPORARY DESIGN CONCEPTS (3+0) 3 credits
Evolution and formation of design philosophies, movements, and styles which influence contemporary design. Prerequisite: INTD 353.

456 PROFESSIONAL PRACTICES FOR INTERIOR DESIGNERS (3+0) 3 credits
Business functions specific to design and construction industry. Prerequisite: 3 credits of business.

459 INTERIOR DESIGN III (0+6) 3 credits
Studio in designing interiors for actual clients; complete design process; critiqued by professional panel. Prerequisite: INTD 358.

470 INTERNSHIP 3 credits *S/U only*
Work with one or more firms that utilize interior design subject matter as they work with clientele. Combines a seminar with supervised field experience. Prerequisite: interior design major.

INTERNAL MEDICINE (IMED)

451, 651 CLERKSHIP (2+30) 12 credits
Hospital and ambulatory clinical experience with preceptorial supervision to develop knowledge (practical, theoretical, basic science), technical and interpersonal skills basic to practicing internal medicine.

461, 661 ELECTIVES 1 to 8 credits
Elective experiences in the major medical subspeciality including: (a) cardiology/EKG reading, (b) clinical neurology, (c) critical care, (d) dermatology, (e) endocrinology/nephrology, (f) gastroenterology, (g) general internal medicine, (h) externship, (j) hematology/oncology, (k) infectious diseases, (m) intensive care, (n) nephrology, (p) nuclear medicine, (q) physical medicine, (r) physical medicine and rehabilitation, (s) pulmonary medicine, (t) medical consultation, (u) research, (w) geriatric medicine, (y) pain management. Prerequisite: third- or fourth-year medical students. Maximum of 8 credits in any one subtopic. Maximum total credits for any combination of subtopics is 16.

462, 662 ELECTIVES 2 to 8 credits
Elective experiences in the major medical subspeciality including: (a) cardiology/clinical .

490, 690 INDEPENDENT STUDY 1 to 3 credits

491, 691 THEORY AND PRACTICE OF ECG INTERPRETATION (1+3) 2 credits
Physiology of the cardiac action potential and general theory of the electrical field created by the heart. The different lead systems in relation to spatial vectorcardiogram. Analysis of simple and complex arrhythmias. Classical patterns of contour alterations.

JOURNALISM (JOUR)

101 INTRODUCTION TO JOURNALISM (3+0) 3 credits
Survey of the role of newspapers, radio, television, advertising and public relations organizations. Interpretation of the day's news and analysis of media performance.

201 BASIC REPORTING (1+6) 3 credits
Fundamentals of reporting. Disciplines of the journalist: correct use of language, deadline pressure and accuracy. Prerequisite: JOUR 101.

203 ADVANCED REPORTING (1+6) 3 credits
Handling of more complicated stories and features, outside assignments and interpretive writing. Prerequisite: JOUR 201.

213 WORKSHOP IN HIGH SCHOOL JOURNALISM (0+6) 2 credits
Practical application of journalistic theory and technique to teaching of high school journalism, supervision of school newspapers, magazines and yearbooks. Maximum of 4 credits. Prerequisite: JOUR 203.

231 PUBLICITY METHODS (2+0) 2 credits
For officers and publicity chairmen, present and prospective, of civic, social, religious, professional, recreational and fraternal organizations in the handling of news of their groups for newspapers and radio stations. Not acceptable toward the requirements for the journalism major.

291 DESKTOP PUBLISHING (0+3) 1 credit *S/U only*
Introduction to computerized pagination using selected programs for word processing, graphics and layout.

All journalism courses numbered 300 or above are open only to juniors seniors and graduates with the advance approval of a faculty adviser.

301-302 IDEAS, VALUES AND CULTURES (3+0) 3 credits each
Ideas, values and cultures as they relate to the concepts of man, society and the cosmos. Includes Western, non-Western and women's primary source material.

303 MEDIA GRAPHICS (2+3) 3 credits
Study and practice in the use of graphics and typography to create effective visual communications.

311 ASSIGNMENT REPORTING (1+6) 3 credits
Writing news and feature stories for publication, primarily in the campus newspaper. Prerequisite: JOUR 203 .

313 PHOTOJOURNALISM (1+6) 3 credits
Techniques and principles of news, feature and public relations photography.

321 WRITING NEWS FOR BROADCAST (1+4) 3 credits
Study and practice of writing news for broadcast. Techniques of writing to picture and sound. History of American broadcast journalism. Prerequisite: JOUR 203.

323 RADIO NEWS AND PRODUCTION (1+4) 3 credits
Practice in writing and producing radio reports and newscasts. Audio production techniques. Prerequisite: JOUR 321.

331 INTRODUCTION TO ADVERTISING (1+6) 3 credits
Process of creating product and service advertising, stressing social responsibility. Prerequisite: JOUR 203.

333 ADVERTISING MEDIA (1+6) 3 credits
Evaluating and selecting print space and broadcast time to meet marketing objectives. Prerequisite: JOUR 331. Corequisite: JOUR 334.

334 ADVERTISING COPYWRITING (1+6) 3 credits
Writing for print and broadcast. Stresses use of marketing research data. Prerequisite: JOUR 331. Corequisite: JOUR 333.

335 CORPORATE COMMUNICATIONS (3+0) 3 credits
Principles of successful advertising and public relations for commercial and non-profit organizations. Planning, media selection, copy writing and graphics. Social responsibilities of advertisers and agents. May not be substituted for JOUR 331, 341.

341 PUBLIC RELATIONS PRINCIPLES (3+0) 3 credits
Principles and techniques of public relations practice in today's society. Prerequisite: JOUR 203 .

343 PUBLIC RELATIONS CASE STUDIES (3+0) 3 credits
Application of the principles and techniques of public relations to the solving of representative problems. Prerequisite: JOUR 341.

401, 601 MEDIA LAW (3+0) 3 credits
Legislation and court decisions affecting the media, with stress on First Amendment, libel and constitutional rulings.

411 NEWS EDITING (2+2) 3 credits
Editing copy, writing headlines and laying out pages. Prerequisite: JOUR 311.

413, 613 HISTORY AND ETHICS OF JOURNALISM (3+0) 3 credits
Journalism from Zenger to today. Ethical questions and problems in the media.

415, 615 COMMUNITY NEWSPAPER MANAGEMENT (2+0) 2 credits each
Principles of journalism peculiar to the country weekly and small city daily, especially in Nevada. Editorial, circulation and advertising management. Prerequisite: JOUR 313.

417, 617 EDITORIAL WRITING (3+0) 3 credits
Opinion writing: editorials and columns. Prerequisite: JOUR 203.

418, 618 MAGAZINE WRITING (1+3) 2 credits
Writing and marketing of articles for magazines Analysis of general interest and specialized magazines. Maximum of 4 credits. Prerequisite: JOUR 203.

419, 619 MAGAZINE EDITING (1+2) 2 credits
Editing of a specialized magazine. Study of the problems involved in editing and production of a variety of magazines. Maximum of 4 credits. Prerequisite: JOUR 203.

421 RADIO NEWS REPORTING (1+6) 3 credits
Practice in writing, interviewing and producing stories and newscasts for radio. Comparison of styles used in various formats. Preparation and broadcasting of radio news. Prerequisite: JOUR 323.

423, 623 TELEVISION NEWS AND PRODUCTION II (1+6) 3 credits
Practice in writing and production of television news and other programs. Advanced video production techniques.

424 ADVANCED NEWS PRODUCING FOR BROADCAST (1+6) 3 credits
Practice in formatting newscasts, including use of graphics, timing, transitions, etc. Organizational and writing skills are stressed. Prerequisite: JOUR 423.

425 PUBLIC AFFAIRS REPORTING AND PRODUCING FOR BROADCAST (1+6) 3 credits
Production of public affairs programs for radio and television. Includes public service programming, community ascertainment, local-angle programs, talk shows and documentaries. Prerequisite: JOUR 423.

426 BROADCAST STATION OPERATION (2+3) 3 credits
Survey of broadcast station personnel, station organization, broadcast sales, operation of broadcast stations, and station relations with agencies, representatives, and other businesses. Prerequisite: JOUR 423.

427, 627 DOCUMENTARY PRODUCTION FOR BROADCAST (1+6) 3 credits
Creation of longer stories for television. Includes production of feature stories, educational pieces and investigative reports. Equal emphasis on writing and production skills. Prerequisite: JOUR 423.

429 DIRECTING FOR TELEVISION (1+6) 3 credits
Television production techniques. Includes the use of television graphics, audio, timing and organizational skills. Prerequisite: JOUR 423.

431 ADVERTISING PHOTOGRAPHY AND GRAPHICS (1+6) 3 credits
Photography for advertisements, packaging and product labels. Prerequisite: JOUR 331.

433 ADVERTISING CASE STUDIES (1+6) 3 credits
Development of an advertising campaign for the approval of a client. Preparation and placing of advertisements. Prerequisite: JOUR 431.

435 RETAIL ADVERTISING (2+3) 3 credits
Creating advertising for retail stores, service groups and professional people. Stresses pre- and post-testing techniques. Prerequisite: JOUR 331.

441 PUBLIC RELATIONS PROBLEMS (3+0) 3 credits
Practical experience in solving public relations problems for nonprofit organizations in the community. Prerequisite: JOUR 341.

450 MEDIA TECHNOLOGIES AND SOCIETY (3+0) 3 credits
How technologies of public communication effect society by extending discourse and changing perceptions.

451, 651 MAGAZINE PUBLISHING (3+0) 3 credits
Creating a new magazine from marketing research through production and sale. Maximum of 6 credits. Prerequisite: JOUR 203.

483, 683 PUBLIC AFFAIRS REPORTING (2+2) 3 credits
Covering the three branches of government: executive, legislative and judicial. Prerequisite: JOUR 203.

487, 687 MEDIA MANAGEMENT (3+0) 3 credits
Training, style, goals and organization of media managers. How they balance product quality and service with commercial achievement.

490, 690 SPECIAL PROBLEMS 1 to 3 credits
Pursuit of a special interest in journalism.

493 INDEPENDENT STUDY 1 to 3 credits
Special projects in journalism.

499 PROFESSIONAL INTERNSHIP (1+6) 3 credits *S/U only*
Supervised on-the-job experience in newspapers, magazines, radio and television stations, advertising and public relations agencies.

701 MEDIA RESEARCH METHODS (3+0) 3 credits
Methods common to mass communication research including surveys, content analysis and experimental design. Use of computers in gathering and analyzing data.

702 QUALITATIVE RESEARCH METHODS (1+6) 3 credits
Principals and practices of Opinion and Attitude Psychographic Research methods for news reporting, advertising, and public relations.

703 MEDIA DYNAMICS IN SOCIETY (3+0) 3 credits
Examination of the structure, functions and performance of the mass media and their dynamic relationship to American society in the context of communication theory and intellectual thought.

705 MEDIA TECHNOLOGIES (3+0) 3 credits
Analysis of technological developments in information dissemination and their impact on public communication and media management.

707 ANALYTIC WRITING (3+0) 3 credits
Systematic gathering of information, including public records and data bases. Methods of analyzing complex information and placing it in context for the intended audience.

771 TECHNICAL WRITING (0+6) 3 credits
Principles and practices for technical writing, stressing research reports, refereed journal papers, technical manuals and news releases on scientific subjects. Planning, production and social responsibilities involved.

773 SEMINAR: ISSUES IN AMERICAN MEDIA (3+0) 3 credits
Historical and contemporary issues on journalism, advertising and public relations.

775 SEMINAR: LEGAL RESTRAINTS ON THE MEDIA (3+0) 3 credits
Analysis of laws and regulations affecting the media.

777 SEMINAR: INTERNATIONAL JOURNALISM (3+0) 3 credits
Comparison of journalistic practices and relationships between media and government in Europe, Asia and the Third World.

779 SEMINAR: LITERARY JOURNALISM (3+0) 3 credits
Includes study of the styles and approaches employed by writers of fiction who emerged from journalism careers. Book-length journalism.

790 SEMINARS (3+0) 3 credits
(a) Persuasive writing, (b) book workshop, (c) finding and shaping ideas for magazines and film, (d) major issues in media, (e) visual presentation strategies, (f) media managment, (g) major issues in broadcast, (h) regulation of broadcast. Maximum of 6 credits.

791 SPECIAL TOPICS 1 to 3 credits
Maximum of 6 credits.

792 SPECIAL PROBLEMS 1 to 3 credits

793 INDEPENDENT STUDY 1 to 3 credits
Investigation into problems in journalism. Prerequisite: advanced approval of graduate adviser.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 PROFESSIONAL RESEARCH PROJECT 4 credits *S/U only*

798 PROJECT DEVELOPMENT 2 credits *S/U only*
Prerequisite or corequisite: JOUR 797.

Inactive Courses
211 JOURNALISM IN THE HIGH SCHOOL (2+0) 2 credits
428,628 ON-THE-SCENE REPORTING FOR RADIO AND TELEVISION (1+2) 2 credits

JUDICIAL STUDIES (J S)

402 INTRODUCTION TO NON-LAWYER JUDICIAL STUDIES (4+0) 4 credits
Introduction for non-lawyer special court judges of fundamental legal principles and procedures with emphasis on criminal trial procedures; covers legal research; communication skills and a mock trial.

403 SEARCH AND SEIZURE (2+0) 2 credits
Comprehensive examination of exclusionary rules derived from the Fourth Amendment, current trends and future developments.

404 EVIDENCE IN SPECIAL COURTS (2+0) 2 credits
Court rulings on evidentiary areas: relevancy; competency and privileges; opinion and expert testimony; examination of witnesses; hearsay and constitutional limitations.

405 ALCOHOL AND DRUGS (2+0) 2 credits
Judicial role in cases involving alcohol and substance abuse including plea bargaining, evaluation of treatment, penalties and referrals.

406 TRAFFIC COURT PROCEEDINGS (2+0) 2 credits
Aspects of traffic court proceedings: calendar; adjudication; arraignments; pleas; addictive behavior; admissibility of technical evidence; sentencing and corrective penalization.

407 SMALL CLAIMS (2+0) 2 credits
Comprehensive examination of the role of the small claims court and the judge through the analysis of administrative, judicial and public relations problems and possible solutions.

408 SENTENCING MISDEMEANANTS (2+0) 2 credits
Surveys the sentencing process and judge's role regarding sentencing, probation, sentence bargaining, alternatives and sanctions in misdemeanor cases.

410 ADVANCED EVIDENCE (2+0) 2 credits
Intensive examination of evidence, including an understanding of legal terminology, admissibility of evidence, the ability to recognize evidentiary issues, and to rule quickly and correctly.

411 DEVELOPING A COURT INFORMATION SYSTEM (2+0) 2 credits
Comprehensive examination of court computer systems, security and accuracy standards, hardware and software options, case flow management, statewide systems, and information agencies with computer access.

412 DOMESTIC VIOLENCE (2+0) 2 credits
Explores psychological issues and law surrounding spousal abuse, child sexual molestation, and physical and emotional abuse of children, and examines child testimony and cross-examination.

415, 615 JUDICIAL WRITING *S/U only*
Examines effective examples of good legal writing; identifies underlying principles of English composition; encourages judges to adopt clear, concise style by writing and rewriting.

510 GENERAL JURISDICATION (6+0) 6 credits *S/U only*
Comprehensive introduction to judicial system, role of judges, recent developments (legal, managerial, technological) in trials and the judiciary as a social institution.

560 CORE COLLEGE (2+0) 2 credits *S/U only*
Foundation of knowledge and skills in the area of juvenile law with emphasis on decision-making, dispositional alternatives and special problems relating to children.

613 CRIMINAL EVIDENCE (2+0) 2 credits *S/U only*
Analyzes how rules of evidence, emphasizing federal rules, are applied to criminal trials. Provides some historical perspective starting with common law.

614 CIVIL LAW (2+0) 2 credits *S/U only*
Examines significant developing areas of civil litigation: professional malpractice, products liability, commercial law, class actions, civil rights and comparative negligence.

616 COURT MANAGEMENT (2+0) 2 credits *S/U only*
Presents and analyzes a working model for trial courts intended to provide practical managerial methods to avoid or lessen court delay.

617 CIVIL EVIDENCE (2+0) 2 credits *S/U only*
Identification and analysis of common evidentiary problems faced by general jurisdiction courts in civil cases.

618 DECISION-MAKING PROCESS (4+0) 4 credits *S/U only*
Identifies the ingredients of the decision-making process and acquaints judges with the psychological, sociological and philosophical aspects of dispute resolutions.

619 GREAT ISSUES IN LAW AS REFLECTED IN LITERATURE (2+0) 2 credits *S/U only*
Explores significant moral and legal issues in American society. Readings from literary sources, judicial opinions and scholarly treatises.

620 CONSTITUTIONAL CRIMINAL PROCEDURE (2+0) 2 credits *S/U only*
Analyzes trends in the criminal justice system with particular attention to Fourth, Fifth, Sixth and Fourteenth Amendment cases.

621 THE JUDGE AND THE TRIAL (2+0) 2 credits *S/U only*
Detailed examination and analysis of the judge's role and responsibility before, during and after trial.

622 MEDICAL EVIDENCE (2+2) 2 credits *S/U only*
Overview of use of medical evidence in the courtroom: nature of scientific evidence, expert testimony, pathology, toxicology, child abuse, and technological innovation.

623 HANDLING CAPITAL CASES (2+0) 2 credits
Techniques for institutiong and maintaining high quality court management of capital cases; addresses the demands and judicial responsibilities unique to capital cases.

624 DRUGS AND THE COURTS (2+0) 2 credits
Examines societal attitudes toward drugs, patterns of abuse, nature of abuse, nature of addition and treatment, management strategies, evaluation and assessment, and identification procedures.

625 DISPUTE RESOLUTION (2+2) 2 credits
Examines strength, weaknesses, and potential uses of alternative dispute resolution methods, including arbitration, mediation, many-trials, and summary jury trials.

661 FAMILY LAW AND DOMESTIC RELATIONS ISSUES (2+0) 2 credits *S/U only*
Examination of current issues and concerns in family law with emphasis on custody and child support decisions.

662 EVIDENTIARY PROBLEMS IN THE JUVENILE AND FAMILY COURT (2+0) 2 credits *S/U* only
Examination of current evidentiary issues and concerns arising in juvenile and family courts.

663 ADVANCED JUVENILE JUSTICE MANAGEMENT INSTITUTE (2+0) 2 credits *S/U only*
Examination of management concerns for juvenile court management including budgeting, personnel recruitment, selection and performance evaluation.

690 TOPICS IN COMPARATIVE JURISPRUDENCE (2 or 3+0) 2 or 3 credits *S/U only*
Historical and current perspectives on various aspects of the legal system including the legal profession, the court system, criminology, social services, and academic research. (a) England, (b) Scotland.

710 HISTORY AND THEORY OF JURISPRUDENCE (3+0) 3 credits
General aspects of law from philosophical, historical and social perspectives: jurisprudence; legal history; courts and the administration of justice; and punishment, culture and society.

715 JUSTICE, LAW AND LITERATURE (3+0) 3 credits
Inquiry into ethical perspectives of judicial and legal experience through study and discussion of literary primary texts, including novels, plays, poems and intellectual prose.

720 COMPARATIVE LAW (3+0) 3 credits
Comprehensive review of Anglo-American, Continental and Socialist legal systems. Historical and current comparative civil and criminal substantive law (torts and contracts) and procedural differences.

730 LAW AND ECONOMICS (3+0) 3 credits
Examines economic implications and objectives of legal institutions and legal rule making: including common law, public regulations of the market and legal procedures.

735 LAW AND THE SOCIAL AND BEHAVIORAL SCIENCES (3+0) 3 credits
Assesses social and historical context of law, major roles and processes in legal institutions; includes major focus on use of scientific research in actual cases.

740 MEDICAL AND LEGAL ISSUES (3+0) 3 credits
Analysis of selected issues, combining scientific/medical and case law perspective. Topics include medical malpractice, informed consent, parents' rights, birth, AIDS, drug addiction.

745 PUBLIC POLICY AND THE COURTS (3+0) 3 credits
Examines the theory and practice of American policymaking, the ediology and structure of this process, and applies this understanding to selected policy areas.

750 CRIMINOLOGY: CAUSATION, ENFORCEMENT, RESPONSIBILITY (3+0) 3 credits
Focuses on major issues in understanding of and policies affecting crime, its control, and the system of criminal justice, including limits of individual responsibility for crime.

755 ECONOMICS OF ENVIRONMENTAL AND NATURAL RESOURCE ISSUES IN THE COURTS (3+0) 3 credits
Introduction to economic concepts applied to natural and environmental resource law. Economic implications of various environmental laws. Scientific interpretation of pollution and pollution impacts.

760 LANGUAGE AND JUDICIAL PROCESS (3+0) 3 credits
Theories of legal language in contemporary criticism, philosophy of actions, sociology of law, psychology of discourse, and structure of English; their uses in judicial practice.

797 THESIS 1 to 6 credits

LIBRARY SCIENCE (L SC)

135 USE OF THE LIBRARY (1+0) 1 credit
Introduction to library search strategy; effective use of WolfPAC and card catalog; finding periodical articles through printed and computer-based indexes and abstracts, resources available through library departments and branch libraries.

303 BIBLIOGRAPHY AND GENERAL REFERENCE (3+0) 3 credits*
Basic reference materials, national and trade bibliography, general reference works (encyclopedias, handbooks, etc.), special bibliographies.

305 HISTORY AND ORGANIZATION OF LIBRARIES (3+0) 3 credits*
Evolution of libraries and description of principal fields of library service, their organization, and special problems.

309 SELECTION AND ACQUISITION OF LIBRARY MATERIALS (3+0) 3 credits*
Theories, principles, and practice of selecting books and other library materials with particular emphasis on public and special libraries.

381 PRACTICE AND HISTORY OF PRINTING (0+6) 3 credits
History of graphic communication in conjunction with actual practice of printing: typographic design, block making, typesetting, press work. (Same as ART 381.)

490 SPECIAL TOPICS IN LIBRARIANSHIP 1 to 3 credits
Exploration of a particular aspect of librarianship, e.g., a special subject area, an administrative or service function, or a technical system or process. Maximum of 9 credits when content differs.

* Contact director of libraries for information.

MANAGERIAL SCIENCES (MGRS)

101 INTRODUCTION TO BUSINESS (3+0) 3 credits
Character of enterprise in the U.S. Organization and administration, production, human resources, information for control of management decision, marketing, finance, business and society. Not open to Business Administration upper-division students.

270 PRINCIPLES OF REAL ESTATE (3+0) 3 credits
Economic, legal, financial, marketing, managerial and operational aspects of real estate.

UPPER-DIVISION COURSES: Business students must have satisfactorily completed the entire lower-division business core (see section on Upper-Division Courses in the College of Business Administration section).

310 MARKETING PRINCIPLES (3+0) 3 credits
Objectives and policies of marketing managers as influenced by marketing institutions, the functions performed and consumer wants and needs in a diverse culture. Prerequisite: completion of lower-division business core.

312 CONSUMER BEHAVIOR (3+0) 3 credits
Nature and determinants of consumer behavior. Attention focused on the influence of socio-psychological factors (such as personality, small groups, demographic variables, social class and culture) on the formation of consumer's attributes, consumption and purchasing behavior. Prerequisite: MGRS 310.

314 MARKET STRUCTURE AND CHANNELS (3+0) 3 credits
Theory, principles and channel implications of wholesale and retail distribution; factors affecting channels; physical distribution. Prerequisite: MGRS 310.

316 BUSINESS MARKETING MANAGEMENT (3+0) 3 credits
Applications of marketing concepts to problems in planning industrial marketing strategy, structuring industrial buyer behavior, managing the marketing mix and negotiating trade relationships from a management perspective. Prerequisite: MGRS 310.

321 BUSINESS COMMUNICATIONS (3+0) 3 credits
Principles and practices for business writing" letters, memos, proposals, research, and legal reports, job applications and resumes. One laboratory experience: oral presentation.

323 ORGANIZATION AND INTERPERSONAL BEHAVIOR (3+0) 3 credits
Analysis of the internal organization structure and of executive roles and functions in the business enterprise and other goal-directed institutions. Theory and design of organizational structure, impact of work-flow plans, technology leadership patterns and control systems upon human behavior in a diverse culture. Prerequisite: completion of lower-division business core.

325 LEGAL ENVIRONMENT (3+0) 3 credits
Legal, ethical, political and international environments in which business operates. Examines changing procedural and substantive rules which regulate business entities and individuals in a diverse culture.

352 OPERATIONS MANAGEMENT (3+0) 3 credits
Quantitative methods and models for decision making. Topics include linear programming, plant layout, technological change, quality control, line balancing, inventory models, and simulation. Prerequisite: lower-division business core.

353 RISK AND INSURANCE (3+0) 3 credits
Theory of risk, introduction to risk management, principles and legal aspects of insurance, survey of property and casualty insurance. Prerequisite: EC 101 or equivalent. Meets Nevada Insurance Division regulations.

362 PRODUCTION MANAGEMENT (3+0) 3 credits
Application to manufacturing and service organizations. Includes capital investment analysis; capacity planning; plant layout; production processes; research and development; cost calculations; production inventory and quality control and simulation. Prerequisite: statistics, MGRS 352.

365 CORPORATE FINANCE (3+0) 3 credits
Business and corporate finance, investments and international finance. Topics include business financial management.

367 HUMAN RESOURCE/PERSONNEL MANAGEMENT (3+0) 3 credits
Management of human resource as a primary function of all managers. Emphasis on personnel processes significant in improving labor utilization and productivity. Review of pertinent legislation dealing with manpower and labor-management relations. Not applicable toward an advanced degree in managerial sciences.

370 INVESTMENTS (3+0) 3 credits
Analysis of investment risks, media and investment portfolios with relation to requirements and policies of individual investors. Prerequisite: MGRS 365.

373 BUSINESS LAW I (3+0) 3 credits
Nature, origin and philosophy of law and procedures. Law of contracts, agency, partnerships and sales. Prerequisite: completion of lower-division business core.

374 BUSINESS LAW II (3+0) 3 credits
Continuation of MGRS 373. Law of corporations, secured transactions, property, negotiable instruments, insurance and bankruptcy. Prerequisite: MGRS 373.

401, 601 LIFE INSURANCE (3+0) 3 credits
Analysis and treatment of personal risks, use of life, health and annuity contracts in realm of estate planning, actuarial concepts, purchase decisions, regulatory problems. Prerequisite: MGRS 353.

402, 602 PROPERTY LIABILITY INSURANCE (3+0) 3 credits
Essentials of risk management, principles of property and liability insurance contracts pertaining to pure risks of the firm. Some emphasis on managerial problems faced by insurance companies within socio-economic and legal constraints. Prerequisite: MGRS 353.

403, 603 RISK MANAGEMENT SEMINAR (3+0) 3 credits
Selected topics covering the management of static business risks. Emphasis on choosing among alternative risk handling techniques. Includes employee benefit programs, risk retention and financing, business continuation uses of life insurance and estate planning for the entrepreneur.

404, 604 FINANCIAL MANAGEMENT THEORY AND PRACTICE (3+0) 3 credits
Application of business financial management to business enterprises including case analysis. Working capital management, valuation, cost of capital, capital budgeting, and financial planning and analysis. Prerequisite: MGRS 365.

415, 615 COMMERCIAL BANK MANAGEMENT (3+0) 3 credits
Administration and operation of commercial banks. Topics include internal organization; loan and investment administration, regulation and supervision; earnings, expense and dividend policies; capital structure and financing policies; new business development. Prerequisite: MGRS 365.

420, 620 INTERNATIONAL FINANCE (3+0) 3 credits
Financing international business operations and investments, financial decision making in the multinational firm, the international monetary system, balance of payments, foreign exchange rates, international financial institutions. Prerequisite: MGRS 370.

422, 622 PROMOTIONAL MANAGEMENT (3+0) 3 credits
Strategic communication problems faced by marketing management; allocation of resources to promotional mix, evaluation of communication effectiveness, and coordination with other marketing strategies. Emphasizes relevancy of consumer motivation and behavior to promotional strategies. Prerequisite: MGRS 310.

424, 624 SALES AND NEGOTIATION MANAGEMENT (3+0) 3 credits
Concepts and techniques used in the analysis, planning, implementation, and control of modern sales and negotiation strategies. Prerequisite: MGRS 310 or BADM 760.

445, 645 PURCHASING MANAGEMENT (3+0) 3 credits
Purchasing and materials management including objective policy setting, cost analysis, negotiation, contracting, decision-making, supply base optimization, sources of supply, computer-based methods, strategic alliances, quality management, value analysis, legal and international aspects.

451, 651 TRANSPORTATION (3+0) 3 credits
Development of various means of transportation and accompanying regulations; rate, traffic, service and coordination problems of our transportation system. Prerequisite: MGRS 373.

452, 652 COMPARATIVE MANAGEMENT (3+0) 3 credits
Analysis of international similarities and differences in managerial functions, processes and effectiveness and consideration of the changes evolving in management systems in various countries. Prerequisite: MGRS 323, 352.

453, 653 ORGANIZATIONAL CHANGE AND DEVELOPMENT (3+0) 3 credits
Analysis of strategies to bring about change in organizational structure; tasks; individual behavior; interpersonal relationships; and relationships of groups. Prerequisite: MGRS 323.

455, 655 LOGISTICS MANAGEMENT (3+0) 3 credits
Physical supply and physical distribution systems, optimum location of storage and transfer sites, material handling and selection of transportation media. Prerequisite: MGRS 310, 351, 352.

457, 657 RESEARCH METHODS FOR LOGISTICS (3+0) 3 credits
Data needs identification, data collection issues under regulated/unregulated regimes, statistical and quantitative methods of analysis, research evaluation and practical issues. Prerequisite: EC 262; MGRS 351, 352.

458, 658 INTERNATIONAL LOGISTICS (3+0) 3 credits
Design and operation of international logistics systems. Export-import issues, multi-national sourcing and distribution strategies, channel management, and comparative transportation systems and policies. Prerequisite: MGRS 351, 455.

459, 659 ANALYSIS AND DESIGN OF LOGISTICAL SYSTEMS (3+0) 3 credits
The modeling process, forecasting, data analysis, inventory analysis, location analysis, vehicle scheduling, use of specially designed software packages. Prerequisite: MGRS 455.

460, 660 MANAGEMENT: THEORY AND PRACTICE (3+0) 3 credits
Analysis of the nature and problems of and approaches to management planning, organizing, decision making and controlling through a study of recent relevant literature and selected cases. Prerequisite: MGRS 323.

461, 661 ADVANCED OPERATIONS MANAGEMENT (3+0) 3 credits
Theory and application to business systems of advanced quantitative decision models such as: linear programming and sensitivity analysis, network models and algorithms, dynamic programming, probabilistic-dynamic programming, integer programming, and computer simulation. Prerequisite: MGRS 352.

462, 662 CHANGING ENVIRONMENTS (3+0) 3 credits
Managing ethically in the changing cultural, economic, political, technological and global environments of business.

467 EMPLOYEE STAFFING AND SELECTION (3+0) 3 credits.
Focus on issues associated with the external and internal staffing process. Emphasis on (a) legal issues, (b) methods of selection, (c) economic impact. Prerequisite: MGRS 323, 367.

468 COMPENSATION MANAGEMENT (3+0) 3 credits
Survey of theories underlying compensation and reward systems in organizations. Emphasis on the analysis and evaluation of jobs, criteria and procedures for determining wage levels. Prerequisite: MGRS 323, 367.

470, 670 INTERNATIONAL MARKETING (3+0) 3 credits
Marketing structure and policies employed in export and import trade. Consideration of legal, cultural and economic factors in marketing abroad. Prerequisite: MGRS 310.

471, 671 MARKETING RESEARCH (3+0) 3 credits
Basic research techniques, survey techniques, sources of marketing information, criteria for evaluation of research studies, and practical experience in making marketing research studies. Prerequisite: MGRS 310; EC 262.

472 RETAIL MANAGEMENT (3+0) 3 credits
Basic concepts, methods, and applications of modern retail practice; topics include trade area analysis, layout design, merchandise management, price, promotion, planning, etc. Prerequisite: MGRS 310, 323, 352, 365.

481, 681 INTERCOLLEGIATE BUSINESS GAMES (2+3) 3 credits
Business decision making in a competitive environment involving policy making; economic, sales and production forecasting; financial analysis; production scheduling; capital budgeting; marketing; research and development planning; pricing; advertising and inventory management. Prerequisite: MGRS 365.

482 INTERNSHIP (1+3 to 6) 2 to 3 credits *S/U only*
An internship with local firms, providing exposure to the real world environment in student's major.

487 ENTREPRENEURSHIP (3+0) 3 credits
How to pursue entrepreneurial opportunities and mechanics of opening a business. Prerequisite: ACC 309 or 313; MGRS 316.

488 STRATEGIC MANAGEMENT AND POLICY (3+0) 3 credits
Emphasis on the application of knowledge from all functional areas of business to organizational problems and the formulation and implementation of organizational strategies. Prerequisite: MGRS 310, 323, 352, 365.

489, 689 MARKETING MANAGEMENT (3+0) 3 credits
Application of marketing principles and methods to case problems in merchandising, distribution channels, brand policy, planning and administering sales programs and the like. Prerequisite: MGRS 310.

490 INDEPENDENT STUDY 1 to 3 credits
Study and research in business administration. Maximum of 6 credits.

491, 691 ADVANCED SEMINAR IN MANAGEMENT (3+0) 3 credits
Advanced study of selected topics in management. Maximum of 6 credits.

492, 692 ADVANCED SEMINAR IN MARKETING (3+0) 3 credits
Advanced study of selected topics in marketing. Maximum of 6 credits.

493, 693 ADVANCED SEMINAR IN FINANCE (3+0) 3 credits
Advanced study of selected topics in finance. Maximum of 6 credits.

494 ADVANCED SEMINAR IN LOGISTICS (3+0) 3 credits
Advanced study of selected topics. Maximum of 6 credits.

Graduate standing is required as a prerequisite for all 700-level courses in the College of Business Administration.

Inactive Courses
301 INSTITUTIONAL MANAGEMENT I (3+0) 3 credits
302 INSTITUTIONAL MANAGEMENT II (3+0) 3 credits
375 LAND RESOURCES: VALUE AND ALLOCATION (3+0) 3 credits
378 REAL ESTATE LAW (3+0) 3 credits
387 WAGE AND SALARY ADMINISTRATION (3+0) 3 credits
427, 627 PROBLEMS IN LABOR RELATIONS AND PERSONNEL ADMINISTRATION (3+0) 3 credits
430, 630 REAL ESTATE EVALUATION (3+0) 3 credits
431 631 REAL ESTATE APPRAISAL PROBLEMS (+0) 3 credits
477 677 SEMINAR IN INSTITUTIONAL MANAGEMENT (3+0) 3 credits
604 PROBLEMS IN BUSINESS FINANCE (3+0) 3 credits

MATHEMATICS (MATH)

Each student is required to present to the mathematics department an ACT or SAT standard mathematics score and a copy of the admission certificate prior to the first registration. Students with previous college mathematics experience should contact the department chair for proper placement before enrolling.

101 INTERMEDIATE ALGEBRA (3+0) 3 credits
Basic properties of the real numbers; standard algebraic techniques, including exponents, factoring, fractions, radicals; problem solving; linear and quadratic equations; the concept of graphing. Prerequisite: one unit of high school algebra and one unit of high school geometry.[1]

120 FUNDAMENTALS OF COLLEGE MATHEMATICS (3+0) 3 credits
Equations and inequalities; relations and functions; linear, quadratic, polynomial, exponential, and logarithmic functions; circles, lines, and parabolas; right-triangle trigonometry; finite probability measures; some statistical concepts. Prerequisite: satisfactory score on qualifying examination or MATH 101.[2]

122 ELEMENTARY SCHOOL MATHEMATICS I (3+0) 3 credits
Mathematics needed by those teaching new-content mathematics courses at the elementary school level with emphasis on the structure of the real number system and its subsystems. Designed for students seeking a teaching certificate in elementary education. Open to others only with approval of departmental chair.[1]

123 ELEMENTARY SCHOOL MATHEMATICS II (3+0) 3 credits
Continuation of MATH 122. Prerequisite: MATH 122.[1]

124 COLLEGE ALGEBRA (3+0) 3 credits
Relations, functions, graphing; equations; linear, quadratic, polynomial systems; matrices and determinants; sequences, mathematical induction, compound interest and amortization, binomial theorem; the complex numbers; logarithms; combinatorics. Prerequisite: satisfactory score on qualifying examination or MATH 101.

128 ALGEBRA AND TRIGONOMETRY (5+0) 5 credits
Equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices, determinants; binomial theorem. Prerequisite: satisfactory score on qualifying examination or MATH 101.[1]

176 ELEMENTS OF CALCULUS I (3+0) 3 credits
Fundamental ideas of analytic geometry and calculus, plane coordinates, graphs, functions, limits, derivatives, integrals, the fundamental theorem of calculus, rates, extrema and applications thereof. Prerequisite: satisfactory score on qualifying examination or MATH 128.[2]

178 CALCULUS FOR SCIENCE I (3+0) 3 credits
Calculus in the plane with emphasis on applications in the sciences, including curve sketching, optimization, related rates, and vectors in the plane. Prerequisite: satisfactory score on qualifying examination or MATH 128.[2]

179 CALCULUS FOR SCIENCE II (3+0) 3 credits
Multivariable calculus, including partial differentiation, multiple integration, calculus of vector-valued functions, optimization of functions of several variables and Lagrange multipliers. Prerequisite: one semester of calculus.

181 CALCULUS I (4+0) 4 credits
Fundamental concepts of analytic geometry and calculus; functions, graphs, limits, derivatives and integrals. Prerequisite: satisfactory score on qualifying examination or MATH 128. A student whose current progress is unsatisfactory in the opinion of the instructor may be required to attend supervised study sessions.[2]

182 CALCULUS II (4+0) 4 credits
Continuation of MATH 181; transcendental functions, methods of integration, conics, vectors. Prerequisite: MATH 181. A student whose current progress is unsatisfactory in the opinion of the instructor may be required to attend supervised study sessions.

200 DIRECTED STUDY 1 to 3 credits
Individual study conducted under the direction of a faculty member. Limited to 6 credits except under special circumstances.

210 MATHEMATICS OF FINANCE (3+0) 3 credits
Interest, annuities, sinking funds, depreciation and amortization. Prerequisite: MATH 101 or 1-1/2 units of high school algebra. Offered through UNR correspondence study only.[1]

281 CALCULUS III (4+0) 4 credits
Continuation of MATH 182; infinite series, three-dimensional calculus. Prerequisite: MATH 182.

285 DIFFERENTIAL EQUATIONS (3+0) 3 credits
Theory and solving techniques for: constant and variable coefficient linear equations, a variety of non-linear equations. Emphasis on those differential equations arising from real-world phenomena. Prerequisite: MATH 281.

301 STUDIES IN THE HISTORY OF MATHEMATICS (3+0) 3 credits
Survey of mathematical developments from ancient times to present. Emphasis on originators, origins and consequences of significant mathematical contributions.

307 SYMBOLIC LOGIC (3+0) 3 credits
(See PHIL 326 for description.)

308 INTRODUCTION TO FOUNDATIONS OF MATHEMATICS (3+0) 3 credits
Primitive terms, concepts, axioms, axiomatic method, proof, dependence, completeness, consistency, validity, models; set theory, cardinality, real

numbers and other structures; formalism, intuitionism, cultural and scientific settings. Prerequisite: MATH 281, for those majoring in the physical sciences. (Same as PHIL 308.)

311 MULTIVARIABLE CALCULUS (3+0) 3 credits
Mappings between Euclidean spaces, their differentials and partial derivatives; the chain rule; extremalization computations; line and surface integrals; the theorems of Gauss, Green and Stokes. Prerequisite: MATH 281, 330.

321 DIFFERENTIAL AND DIFFERENCE EQUATIONS I (3+0) 3 credits
Vector-valued linear differential equations, power series solutions, asymptotic behavior; the Legendre, Euler, and Bessel equations; Sturm-Liouville eigenvalue problems, autonomous systems, stability; finite difference methods; introduction to second order partial differential equation boundary-value problems. Prerequisite: MATH 285.

330 LINEAR ALGEBRA I (3+0) 3 credits
Systems of linear equations; matrix algebra; vector spaces: linear independence, bases, dimension, vector subspace configuration; linear maps, their matrix representations and structure theorems. Prerequisite: MATH 182.

331 GROUPS, RINGS AND FIELDS (3+0) 3 credits
Elementary structure of groups, rings and fields, including homomorphisms, automorphisms, normal subgroups, ideals and Galois theory. Prerequisite: MATH 281.

341 METRIC TOPOLOGY (3+0) 3 credits
Topological structures induced by metrics; topological concepts versus metric concepts; continuity, compactness, local compactness, connectedness; boundedness, total boundedness, completeness, uniform continuity; separation and countability conditions. Prerequisite: MATH 281.

352 PROBABILITY AND STATISTICS (3+0) 3 credits
Probability experiments; sample spaces, discrete and continuous random variables and distributions; mathematical expectation, central limit theorem; hypothesis testing and linear regression. Prerequisite: two semesters of calculus.

371 CONCEPTS OF SCHOOL MATHEMATICS I (3+0) 3 credits
Theoretical development of the ideas underlying school mathematics. Emphasis on sets, algebra and ordering. Designed for students seeking a teaching certificate. Open to others only with the approval of department chair.

372 CONCEPTS OF SCHOOL MATHEMATICS II (3+0) 3 credits
Continuation of MATH 371. Emphasis on geometry mensuration and coordinate systems. Prerequisite: MATH 371.

373 THEORY OF POSITIVE INTEGERS (3+0) 3 credits
Mathematical logic, quantifiers, induction, axiomatic development of the theory of positive integers; fundamental theorem of arithmetic. Emphasis is on problem solving and theorem proving. Prerequisite: MATH 181 or approval of instructor.

381 DISCRETE MATHEMATICS (3+0) 3 credits
Quantifiers and logical operators; sets, functions, binary relations, digraphs, and trees; inductive definitions, counting techniques, recurrence systems analysis of algorithms, searching and sorting algorithms. Prerequisite: C S 183; MATH 181.

400 600 INDEPENDENT STUDY 1 to 3 credits
Individual study conducted under the direction of a faculty member. Limited to 6 credits except under special circumstances.

401, 601 SET THEORY (3+0) 3 credits
Formalism, inference, axiomatic set theory, unicity, pairs, relations, functions ordinals, recursive definition, maximality, well ordering, choice, regularity, equinumerosity, cardinal arithmetic.

410, 610 COMPLEX ANALYSIS (3+0) 3 credits
Complex numbers, analytic and harmonic functions. Cauchy-Reimann equations, complex integration, the Cauchy integral formula, elementary conformal mappings. Laurent series, calculus of residues. Prerequisite: MATH 311.

411, 611 REAL ANALYSIS (3+0) 3 credits
Continuity, monotonicity, differentiability; uniform convergence and continuity and differentiability; Stone-Wierstrass Theorem; multivariable functions, linear transformations, differentiation, inverse and implicit functions, Jacobians and change of variable; Lebsgue measure and integration. Prerequisite: MATH 311, 330, 341.

412, 612 FUNCTIONAL ANALYSIS (3+0) 3 credits
Normed vector spaces, Banach and Hilbert spaces, linear functionals and operators, the Hahn-Banach, closed graph and uniform boundedness theorems with applications, dual spaces, self adjoint operators, compact operators. Prerequisite: MATH 311, 330, 341.

419, 619 TOPICS IN ANALYSIS (1+0 per credit) 1 to 3 credits
Variable content chosen from such topics as differential forms, analytic functions, distribution theory, measure and integration, constructive analysis. Maximum of 6 credits.

420, 620 MATHEMATICAL MODELING (3+0) 3 credits
Formulation, analysis and critique of methods of mathematical modeling; selected applications in physics, biology, economics, political science and other fields. Prerequisite: MATH 281, 352 or 179. Corequisite: MATH 179 or 281.

422, 622 OPTIMAL ANALYSIS (3+0) 3 credits
Analysis of extrema of real-valued functions and functionals with applications. Introduction to calculus of variations and optimal control. Prerequisite: MATH 285, 311.

423, 623 DIFFERENTIAL AND DIFFERENCE EQUATIONS II (3+0) 3 credits
Partial differential equations; first order equations, initial and mixed boundary-value problems for the second order Laplace, heat and wave equations; finite difference approximation. Prerequisite: MATH 285.

429, 629 TOPICS IN APPLIED ANALYSIS (1+0 per credit) 1 to 3 credits
Variable content chosen from such topics as: integral transforms, approximation of functions, nonlinear mathematics, stability theory, matrix exponentials. Maximum of 6 credits.

430, 630 LINEAR ALGEBRA II (3+0) 3 credits
Vector spaces; duality, direct sums; linear maps: eigenvalues, eigenvectors, rational and Jordan forms; bilinear maps, quadratic forms; inner product spaces: symmetric, skewsymmetric, orthogonal maps, spectral theorem. Prerequisite: MATH 330.

435, 635 COMBINATORICS (3+0) 3 credits
Graph theory and enumeration. Searching, arrangement, selection, and network flow problems. Emphasis on algorithms useful for computers. Prerequisite: MATH 330.

439, 639 TOPICS IN ALGEBRA (1+0 per credit) 1 to 3 credits
Variable content chosen from such topics as Galois theory, number theory topological groups, combinatorial analysis, theory of graphs. Maximum of 6 credits.

441, 641 TOPOLOGY (3+0) 3 credits
Concepts of continuity, compactness, local compactness and connectedness in a general topological setting; separation and countability conditions; product and quotient topologies; homotopy, the fundamental group and covering spaces. Prerequisite: MATH 341.

442, 642 DIFFERENTIAL GEOMETRY (3+0) 3 credits
Geometry of curves and surfaces in space; Frenet's formulas; Cartan's frame fields, Gaussian curvature; intrinsic geometry of surface; congruence of surfaces; the Gauss-Bonnet theorem. Prerequisite: MATH 311.

443, 643 DIFFERENTIAL GEOMETRY AND RELATIVITY I 3+0) 3 credits
Manifolds, the tangent bundle, differential forms, exterior differentiation, Lie differentiation, Koszul connections, curvature, torsion, Cartan's structural equations, integration of differential forms. Prerequisite: MATH 311 or equivalent.

444, 644 DIFFERENTIAL GEOMETRY AND RELATIVITY II (3+0) 3 credits
Spacetimes, the Fermi-Walker connection, reference frames, particles and particle flows, electromagnetic fields, stress-energy tensors, matter models, black holes, gravitational waves, cosmological models. Prerequisite: MATH 443.

445, 645 INTRODUCTION TO RELATIVITY THEORY (3+0) 3 credits
Special relativity, redshift, Thomas precession; tensor fields, covariant differentiation, geodesics, curvature; Einstein field equations, a simple

cosmological model, Schwarzschild spacetime, precession, Kruscal spacetime blackholes. Prerequisite: MATH 311 or equivalent.

449, 649 TOPICS IN GEOMETRY AND TOPOLOGY
(1+0 per credit) 1 to 3 credits
Variable content chosen from such topics as differential topology, algebraic topology, convexity, topological vector spaces. Mathematical structures of special relativity. Maximum of 6 credits.

451, 651 PROBABILITY THEORY (3+0) 3 credits
Probability space axioms; random variables, expectation, univariant and multivariant distribution theory, sequences of random variables, Tchebychev inequality, law of large numbers, and central limit theorem. Prerequisite: MATH 281, 352.

452, 652 STATISTICS I (3+0) 3 credits
Hypothesis testing: power, confidence intervals; estimation: choice of estimators, desired properties of estimators; linear regression: Gauss-Markov theorems, design of experiments, ANOVA. Prerequisite: MATH 352.

453, 653 STATISTICS II (3+0) 3 credits
Multivariant normal distributions; non-parametric methods in statistics: test procedures, estimation, rank correlation; sequential analysis; central limit theorem and its applications. Prerequisite: MATH 452.

454, 654 INTRODUCTION TO STOCHASTIC PROCESSES
(3+0) 3 credits
Discrete time stochastic processes: random walks, recurrent events, Markov chains, branching processes; continuous time processes: linear and nonlinear birth-death processes and diffusions; renewal theory. Prerequisite: MATH 451.

469, 669 MATHEMATICAL TOPICS IN THE MANAGEMENT SCIENCES (1+0 per credit) 1 to 3 credits
Variable content chosen from such topics as linear and integer programming nonlinear programming, game theory and optimization problems. Maximum of 6 credits.

474, 674 SETS AND NUMBERS (3+0) 3 credits
Axiomatic theory of sets, relations and functions; natural numbers, integers rationals and reals constructed from sets; least upper-bound principle and its consequences; complex numbers. Prerequisite: MATH 373.

475, 675 EUCLIDEAN AND NON-EUCLIDEAN GEOMETRY
(3+0) 3 credits
Axiom systems, models, independence, consistency; incidence, distance, betweenness, congruence, convexity; inequalities, parallels, perpendiculars, the Klein model; Saccheri quadrilaterals, limit triangles, the non-Euclidean geometry of Bolyai-Lobatchevsky. Prerequisite: MATH 373.

480, 680 COMPUTER APPLICATIONS IN EDUCATION
(1+0 per credit) 1 to 3 credits (See C S 480, 680 for description.)[1]

483, 683 NUMERICAL METHODS I (3+0) 3 credits
Numerical solution of linear systems, including linear programming; iterative solutions of non-linear equations; computation of eigenvalues and eigenvectors, matrix diagonalization. Prerequisite: MATH 330 or equivalent. (Same as C S 483, 683.)

484, 684 NUMERICAL METHODS II (3+0) 3 credits
Numerical differentiation and integration; numerical solution of ordinary differential equations, two point boundary value problems; difference methods for partial differential equations. Prerequisite: MATH 285 or equivalent. (Same as C S 484, 684.)

659 TOPICS IN PROBABILITY AND STATISTICS
(1+0 per credit) 1 to 3 credits
Variable content chosen from among such topics as time series analysis, analysis of variance and design of experiments, and quality control and reliability. Maximum of 9 credits.

701-702 NUMERICAL ANALYSIS AND APPROXIMATION
(3+0) 3 credits each
Norms of vectors and matrices, computation of eigenvalues and eigenvectors, matrix transformations, Weierstrass' approximation theorem, Chebyshev polynomials, best and uniform approximation, splines, approximation in abstract spaces.

703 COMPUTABILITY AND FORMAL LANGUAGES (3+0) 3 credits
(See C S 703 for description.)

713-714 ABSTRACT AND REAL ANALYSIS (3+0) 3 credits each
Metric spaces, abstract measures, measurable functions, integration, product measures, Fubini Theorem, topological measures, Haar measure, differentiation. Radon-Nikodym Theorem, linear spaces, Hahn-Banach Theorem, Riesz Representation.

715-716 COMPLEX FUNCTION THEORY (3+0) 3 credits each
Analytic functions, conformal mappings, Cauchy's theorem, power series, Laurent series, the Riemann mapping theorem, harmonic functions, subharmonic functions, canonical mappings of multiply connected regions, analytical continuation.

731-732 MODERN ALGEBRA (3+0) 3 credits each
Groups, fields, linear dependence, linear transformations, Galois theory.

741-742 TOPOLOGY (3+0) 3 credits each
Topological structures, uniform spaces, metric spaces, compact and locally compact spaces, connectivity, function spaces, topological algebra, elementary homological algebra, singular homology theory, cell complexes, homotopy groups.

751 MATHEMATICAL METHODS IN OPERATIONS RESEARCH I
(3+0) 3 credits
Application of pertinent mathematical theories to deterministic models, including linear, nonlinear, dynamic and integer programming; duality theory; network analysis. Prerequisite: MATH 311, 330.

752 MATHEMATICAL METHODS IN OPERATIONS RESEARCH II
(3+0) 3 credits
Application of pertinent mathematical theories to probabilistic models, including queueing theory; inventory theory; reliability; decision analysis; simulation. Prerequisite: MATH 311, 330, 352.

753 STOCHASTIC MODELS (3+0) 3 credits
Stochastic models of system noise, Brownian motion, parameter estimation and time series. Applications and mathematical characterizations of Gaussian, Poisson, Markov and stationary random processes. Prerequisite: MATH 311, 330, 352.

773 TOPICS IN ALGEBRA (3+0) 3 credits
Variable content chosen from such topics as theory of equations, number theory, and groups and permutations. Prerequisite: MATH 281, 330. Maximum of 9 credits.

774 TOPICS IN GEOMETRY AND ANALYSIS (3+0) 3 credits
Variable content chosen from such topics as plane algebraic curves, theory of surfaces, pseudo-Euclidean spaces. Prerequisite: MATH 281, 330. Maximum of 9 credits.

775 TOPICS IN PROBABILITY AND STATISTICS (3+0) 3 credits
Variable content chosen from among such topics as Markov Chains, multivariate statistics, and Brownian motion. Prerequisite: MATH 281, 330, 352. Maximum of 9 credits.

780 TOPICS IN ADVANCED MATHEMATICS 1 to 3 credits
Variable content chosen from such topics as mathematical methods in applied science, manifold theory, functional analysis, or geometric methods in ODE theory. Maximum of 9 credits.

793 INDEPENDENT STUDY 1 to 3 credits
Individual study conducted under the direction of a faculty member. Limited to 6 credits except under special circumstances.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

Inactive Courses
113 PLANE TRIGONOMETRY (2+0) 2 credits
130 ANALYTIC GEOMETRY (3+0) 3 credits
163 INTRODUCTION TO PROBABILITY (2+0) 2 credits

[1]This course does not satisfy the university core mathematics requirement.

[2]This course satisfies the university core mathematics requirement.

MECHANICAL ENGINEERING (MECH)

150 INTRODUCTION TO MECHANICAL ENGINEERING (2+3) 3 credits
Introduces the design process including initial conceptualization (sketching), detailed drawings (drafting), and prototype fabrication (machine shop). Discussion of descriptive geometry; graph and chart preparation; design projects.

198, 298, 398, 498 COOPERATIVE TRAINING REPORT (1+0) 1 credit each
Preparation of written reports based on cooperative program assignments. Required of all students in cooperative programs during the summer or other semesters when on work assignments with cooperative program employers.

201 COMPUTER PROGRAMMING (2+3) 3 credits
Programming in FORTRAN illustrated by topics in computational mathematics. No previous knowledge of computer programming is assumed. Corequisite: MATH 281 or equivalent.

241 STATICS (3+0) 3 credits
(See C E 241 for description.)

242 DYNAMICS (3+0) 3 credits
Kinematics and kinetics of particles and rigid bodies in two and three dimensions; relative motion; work and energy; impulse and momentum. Prerequisite: MECH 241. Corequisite: MATH 281.

250 INTRODUCTION TO COMPUTER AIDED DESIGN (2+3) 3 credits
Design and analysis of machine components using AUTOCAD and CADKEY on the IBM PC System 2. Introduction to dynamic simulation and graphic display. Prerequisite: MECH 150.

299 DIFFERENTIAL EQUATIONS (3+0) 3 credits
Methods of solving ordinary differential equations with application to physical systems. Prerequisite: MATH 281.

310 SYSTEM ANALYSIS AND DESIGN (4+0) 4 credits
Mathematical modeling and response analysis of linear mechanical, electrical, hydraulic and pneumatic systems. Linearization of non-linear systems Introduction to experimental modeling. Control system analysis. Prerequisite: E E 201; MECH 299 or MATH 285; MECH 367, 402.

343 DYNAMICS OF MACHINERY (2+0) 2 credits
Dynamical behavior of machine elements and mechanisms, inertia forces on linkages, two degrees of freedom vibrations, gyroscopic effects, selected special problems. Prerequisite: MECH 242.

351 MECHANICAL DESIGN (3+3) 4 credits
Design of machine elements, emphasizing analysis. Using computer languages such as FORTRAN and design using interactive computer aided design facilities. Prerequisite: C E 372; MECH 250.

353 MANUFACTURING PROCESSES (2+3) 3 credits
Metal casting, metal forming, rolling, forging, extrusion, drawing, sheet metal forming, powder metallurgy. Forming and shaping of plastics, composite materials, ceramics and glass, material. High Tc superconductor processing.

367 ELEMENTARY FLUID MECHANICS (3+0) 3 credits
Introduction to hydrostatics, conservation laws, dimensional analysis and boundary-layer theory. Corequisite: MECH 242, 299 or MATH 285 or equivalent.

371 THERMODYNAMICS I (3+0) 3 credits
Principles of engineering thermodynamics. A study of the first and second laws, entropy, ideal and real gases and second-law analysis of engineering systems. Prerequisite: completion of physics requirements.

372 THERMODYNAMICS II (3+0) 3 credits
Continuation of M E 371 covering power and refrigeration cycles, gas mixtures, thermodynamics relations, combustion and thermodynamics of high-speed flow. Prerequisite: MECH 371.

377 INTRODUCTION TO SOLAR ENERGY (2+0) 2 credits
History of solar utilization. Characteristics of solar radiation. Design of structures to use solar energy. Principles of conversion of solar energy to other forms of energy. Prerequisite: PHYS 201.

391 INSTRUMENTATION (2+3) 3 credits
Theory, design and use of mechanical and electrical system for static and dynamic measurements Prerequisite: E E 200, 201; MECH 242, 299 or MATH 285; MECH 367.

402, 602 NUMERICAL METHODS IN ENGINEERING (3+0) 3 credits
Numerical methods are introduced and applied to mechanical engineering problems. Requires knowledge of FORTRAN. Prerequisite: MECH 299 or MATH 285.

403, 603 PARTIAL DIFFERENTIAL EQUATIONS IN ENGINEERING (3+0) 3 credits
Techniques of solving and application of partial differential equations are investigated. Fourier Analysis, Bessel, Legendre and Mathieu functions are introduced. Prerequisite: MECH 299 or MATH 285.

410, 610 INTRODUCTION TO SYSTEM CONTROL (3+0) 3 credits
Mathematics of linear systems and their control. Prerequisite: MECH 310.

411, 611 INTRODUCTION TO ROBOTICS (3+0) 3 credits
Included topics are forward and inverse kinematics, motion kinematics, force/torque relations, trajectory planning, dynamics and control of robots. Prerequisite: MECH 242.

430 MATERIALS (3+0) 3 credits
Properties of materials as they affect selection and design. Prerequisite: METE 350.

440, 640 INTERMEDIATE DYNAMICS (3+0) 3 credits
Kinematics and dynamics of rigid bodies in space. General theory of rotating coordinate frames, Euler's angles, Euler's equations of motion, angular momentum, work-energy principles. Prerequisite: MECH 242.

444, 644, SPACE DYNAMICS (3+0) 3 credits
Reference frames, Euler Angles, Orbital mechanics, mechanics of powered flight, satellite dynamics and lunar trajectories. Prerequisite: MECH 201, 242.

445, 645 ADVANCED MECHANICS (3+0) 3 credits
Unsymmetrical bending, shear center, strain energy, complementary energy with applications, continuous elastically supported beams, beam columns, buckling of bars, electric resistance strain gauging. Prerequisite: C E 372.

446, 646 COMPOSITE MATERIALS (3+0) 3 credits
Stress-strain relations of a lamina; micromechanics and macromechanics of laminate; bending, buckling and vibration of laminated composite-material beams, plates and shells. Prerequisite: C E 372.

452 DESIGN SYNTHESIS (3+3) 4 credits
Creation and optimization of mechanical systems using Computer Aided Design (CAD) facilities. Heat transfer, fluid flow and ecomomic aspects are included. Prerequisite: MECH 461.

453, 653 MECHANICAL VIBRATIONS (3+0) 3 credits
Theory of mechanical vibrations with applications to machinery. Includes critical speeds, torsional vibrations, isolation, damping, absorbers, uniform beams, etc. Lectures, experiments, problems. Prerequisite: MECH 310.

461, 661 HEAT TRANSFER (3+0) 3 credits
Basic laws of heat transfer by conduction, convection and radiation are introduced and applied to engineering problems. Analytical, numerical and graphical solutions to problems are studied. Prerequisite: MECH 367 or equivalent, MECH 299 or MATH 285; MECH 371.

463, 663 COOLING ELECTRONIC EQUIPMENT (2+0) 2 credits
Introduction to heat transfer modes, including conduction, convection and radiation. Discussion of thermal problems in electronic packages. Does not satisfy MECH 461 requirement. Prerequisite: MECH 299 or MATH 285.

464 HEAT TRANSFER LABORATORY (0+3) 1 credit
Laboratory covering conduction, convection and radiation areas. Prerequisite: MECH 391. Corequisite: MECH 461.

465, 665 SYSTEM DESIGN (3+0) 3 credits
Engineering systems are simulated, designed and optimized relative to cost, weight, size or other constraints. Time value of money is stressed. Optimization techniques include computer simulations. Design project required. Study of thermal or mechanical systems.

467, 667 INTERMEDIATE FLUID MECHANICS (3+0) 3 credits
Introductory treatment of potential theory, boundary-layer theory and turbulence. Prerequisite: MECH 367 or equivalent.

472, 672 AIR CONDITIONING (3+0) 3 credits
Heating, ventilation and air conditioning (HVAC) requirements to produce thermal comfort. Use of psychrometric chart, the design of duct distribution systems, blower selection criteria and equipment selection. Winter and summer load calculations. Prerequisite: MECH 371.

473, 673 REFRIGERATION (3+0) 3 credits
Analysis of vapor compression cycle, absorption refrigeration and staged cryogenic systems. Desirable properties of refrigerants and brines, piping arrangement and sizing. Heat exchange and sizing criteria. Prerequisite: MECH 372.

474, 674 ACTIVE SOLAR ENGINEERING I (2+3) 3 credits
Nature and availability of solar energy. Technology of collection and use. Design, construction and testing of solar collectors and systems. Prerequisite: MECH 371 .

475, 675 POWER SYSTEMS DESIGN (3+0) 3 credits
Contemporary power systems, including geothermal power, cogeneration, waste burning systems and solar thermal systems. Prerequisite: MECH 371, 461.

476, 676 INTERNAL COMBUSTION ENGINES (3+0) 3 credits
Otto, and Sterling Diesel cycle engines and gas turbines. Thermodynamics review, combusion, ideal cycles, real engine cycles, fuels and fuel metering, exhaust gas analysis, air pollution. Prerequisite: MECH 371.

477, 677 PASSIVE SOLAR ENGINEERING (2+3) 3 credits
The design of buildings which interact with climate and solar energy to maintain comfort conditions. Includes computer modeling. Prerequisite: MECH 371.

480, 680 GAS DYNAMICS I (3+0) 3 credits
Fundamentals of compressible flow; one dimensional flow, shock waves, area change, heat transfer, friction in subsonic and supersonic flow. Prerequisite: MECH 367 .

481, 681 GAS DYNAMICS II (3+0) 3 credits
Continuation of M E 480, applications to ducts, nozzles, diffusers, wind tunnels, flow measurements; oblique shock waves, method of characteristics. Prerequisite: MECH 480.

482, 682 AERODYNAMICS (3+0) 3 credits
Lift and drag characteristics of bodies and aerodynamics characteristics of the complete airplane. Prerequisite: MECH 368 or 461.

484, 684 COMPUTATIONAL FLUID MECHANICS AND HEAT TRANSFER (3+0) 3 credits
Application of computational methods to the numerical simulation of the conservation equations which govern fluid mechanics and heat transfer. Knowledge of FORTRAN is required. Prerequisite: MECH 368 or 461.

491 MECHANICAL ENGINEERING LABORATORY (1+3) 2 credits
Selected experiments in the areas of fluid mechanics, solid mechanics, heat transfer, solar energy, thermodynamics and mechanical vibrations. Prerequisite: MECH 391.

493 SENIOR LABORATORY (0+2) 1 credit
Projects related to courses. Prerequisite: MECH 391, mechanical engineering major.

494 PROJECTS LABORATORY (0+2) 1 credit
Group and/or individual projects related to student's area of concentration. Prerequisite: MECH 391, mechanical engineering major.

499 SPECIAL PROJECTS I, II 1 to 4 credits each
Study and/or experimentation in areas of special interest to mechanical engineers. Maximum of 6 credits. Advance department approval is required.

700 INTRODUCTION TO INTEGRAL METHODS WITH APPLICATIONS (3+0) 3 credits
Green's functions; Poisson's kernals; LaPlace and Fourier transforms and additional topics related to boundary value problems. Prerequisite: MECH 403 or equivalent.

701 ADVANCED MATHEMATICAL METHODS FOR ENGINEERS (3+0) 3 credits
Regular and singular perturbation theory, multiple-scale analysis; asymptotic expansions with application to mechanical systems. Prerequisite: MECH 403 or equivalent.

702 ADVANCED NUMERICAL METHODS (3+0) 3 credits
Multi-dimensional problems using boundary element, finite difference and weighted residual methods.

710 ADVANCED SYSTEM DYNAMICS AND OPTIMAL CONTROL (3+0) 3 credits
State space analysis of deterministic, continuous systems, observability, controllability, Lyapunov functions and stability theorems, the theory of optimal processes and Pontryagin's maximum principle.

711 ADVANCED ROBOTICS (3+0) 3 credits
Included topics are Newton-Eula formulation of equations of motion, inverse dynamics, path planning using the dynamic model, position and trajectory control of robotic manipulators, and compliant motion control.

720 INTRODUCTION TO CONTINUUM MECHANICS (3+0) 3 credits
Introduction to the mechanics of a continuous medium; stress and strain in elastic and inelastic solids; Newtonian and non-Newtonian fluids; variational methods applied to a continuum. Prerequisite: MECH 445, 645.

721 VISCOELASTICITY (3+0) 3 credits
Viscoelastic stress-strain constitutive relations, polymer behavior, elastic-viscoelastic correspondence principle, initial/boundary value problems, wave propagation, thermoviscoelasticity, creep, Prerequisite: MECH 720.

730 ENERGY AND VARIATIONAL METHODS (3+0) 3 credits
Equations of mechanics, energy and variational principles; Galerkin, Ritz and finite-element analysis of plate and shells. Prerequisite: MECH 445, 645 or CE 724.

740 ADVANCED DYNAMICS (3+0) 3 credits
Fundamentals of analytical mechanics. Behavior of dynamical systems, geometric theory. Stability of multi-degree of freedom autonomous and nonautonomous systems. Prerequisite: MECH 440, 640.

741 ADVANCED VIBRATIONS (3+0) 3 credits
Vibration of multi-degree of freedom systems with emphasis on modal analysis. Introduction to vibration of continuous systems, exact and approximate solutions. Prerequisite: MECH 453, 653.

745 MECHANICAL BEHAVIOR OF MATERIALS (3+0) 3 credits
Understanding stress and strain and mechanisms of flow and fracture. Mechanical property tests including multi-axial state of stress and the basic metal working processes. Prerequisite: MECH 430, 720 or equivalent.

746 ADVANCED COMPOSITE MATERIALS (3+0) 3 credits
Anisotropic elasticity, shear deformation effects; laminated plates and shells; energy methods applied to composite structures; joining and fastening; special topics. Prerequisite: MECH 646.

750 ADVANCED MACHINE DESIGN (1+6) 3 credits each
(a) Creative design of machines and systems, including advanced analysis and synthesis, (b) continuation of 750a with emphasis on theory and application of photoelastic strain analysis. Prerequisite: MECH 452.

760 CONDUCTION HEAT TRANSFER (3+0) 3 credits
Formulation of conduction problems in various coordinate systems. Solution by separation of variables, LaPlace transforms, complex combination and approximate methods. Prerequisite: MECH 461. Corequisite MECH 403 or equivalent.

761 CONVECTION HEAT TRANSFER (3+0) 3 credits
Equations of continuity, momentum, energy and mass diffusion. Laminar solutions including the Graetz problem, similarity parameters, external and internal flows. Integral methods. Turbulence. Prerequisite: MECH 461.

762 RADIATION HEAT TRANSFER (3+0) 3 credits
Radiation properties of surfaces, radiation exchange in enclosures, radiative transfer in absorbing, emitting and scattering media, combined radiation with conduction and convection. Prerequisite: MECH 461.

770 STATISTICAL THERMODYNAMICS (3+0) 3 credits
Introduction to the statistical thermodynamics of the pure component and of mixtures. An introduction to the kinetic theory of gases; thermodynamics of irreversible phenomena. Prerequisite: MECH 372, 700.

771 ADVANCED THERMODYNAMICS (3+0) 3 credits
Classical approach to thermodynamic equilibrium, stability of thermodynamic systems, extremum principles, Maxwell relations, phase transitions, chemical thermodynamics, Nernst postulate, and irreversible thermodymamics. Prerequisite: MECH 371 or equivalent.

772 ADVANCED THERMODYNAMIC/FLUID SYSTEM DESIGN (3+0) 3 credits
System design and analysis with emphasis on dynamic behavior. (a) Environmental systems, (b) powers systems. Prerequisite: MECH 372.

780 MECHANICS OF IDEAL FLUIDS (3+0) 3 credits
Vorticity dynamics; planar and three-dimensional potential flows. Introduction to wave theory and hydrodynamic stability. Prerequisite: MECH 368 or equivalent.

781 MECHANICS OF VISCOUS FLUIDS (3+0) 3 credits
Fundamental laws of motion for a viscous fluid, exact solutions of the Navier-Stokes equations; study of laminar, turbulent boundary layers including approximate numerical methods. Prerequisite: MECH 368 or equivalent.

782 TURBULENT FLOW AND TRANSPORT (3+0) 3 credits
Reynolds averaged equations, simple closure techniques for velocity and temperature field prediction in free and bounded flows. Complex closure. Prerequsite: MECH 761 or equivalent.

785 EXPERIMENTAL METHODS IN FLUID/THERMAL SCIENCES (2+3) 3 credits
Lectures and laboratory demonstrations of flow visualization, anemometry, interferometry and related state-of-the-art methods used in the fluid/thermal sciences.

791 SPECIAL TOPICS 1 to 4 credits
Literature search and analytical study of special problems. Maximum of 6 credits.

792 SPECIAL PROBLEMS 1 to 4 credits
Study and experimentation in areas of special interest.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
300 INTRODUCTION TO ENGINEERING MATHEMATICS (2+0) 2 credits

MEDICINE (MED)

402, 602 ADVANCED PROBLEM SOLVING (1+3) 2 credits S/U *only*
Application of biological science knowledge and concepts to simulated clinical problems. Application, demonstration and role modeling of problem-solving techniques in medicine. Maximum of 4 credits.

461, 661 ELECTIVES 2 to 8 credits
Experience in the interdisciplinary medical subspecialities emphasizing (a) administrative internship, (b) physical diagnosis, (c) radiology.

473, 673 PHYSICAL DIAGNOSIS II (1+3) 2 credits *S/U only*
Medical history taking and physical examination with emphasis on abnormal and pathological findings, doctor-patient relationships, medical record keeping and medical problem solving.

601 BIOMEDICAL PROBLEM SOLVING (1+3) 2 credits *S/U only*
Application of biological science knowledge and concepts to simulated clinical problems. Application, demonstration and role modeling of problem-solving techniques in medicine. Maximum of 4 credits.

670 PHYSICAL DIAGNOSIS I (1+3) 2 credits *S/U only*
Knowledge and skills of the physical examination with emphasis on normal findings, doctor-patient relationships, introduction to medical history taking, medical record keeping and medical problem solving.

METALLURGICAL ENGINEERING (METE

101 INDUSTRY ORIENTATION LECTURES (1+0) 1 credit
(See CH E 101 for description.)

151 INTRODUCTION TO MATERIALS (3+0) 3 credits
Basic concepts of material science. Structure and properties of materials. Testing and processing of materials.

203 SURVEY OF EXTRACTION METALLURGY (3+0) 3 credits
Overall view of the art and science of extraction metallurgy includ concentration of ores, the extraction of metals from ores, the refi metals, and environmental implications of these processes.

232 PRINCIPLES OF METALLURGICAL AND CHEMICAL ENGINEERING (3+0) 3 credits
Scientific bases for process engineering stoichiometry, gas behavi bustion and mass and energy balances. Problem solving is empl Field trip. To progress to subsequent courses identified by CH E or a grade of C or higher must be earned in this course. Corequisite: 181. (Same as CH E 232.)

250 ELEMENTS OF MATERIALS SCIENCE (3+0 or 3) 3 or 4 cre Internal structure of materials, the dependence of properties upo structures, and the behavior of materials in service. Prerequisite: C or 201.

322 MINERAL PROCESSING I (3+0) 3 credits
Principles and practices of mineral preparation and concentration

324 MINERAL PROCESSING LABORATORY (0+3) 1 credit
Experiments demonstrating principles of mineral processing.

401, 601 CORROSION OF METALS (3+0) 3 credits
Thermodynamics and kinetic basis for the electrochemical theory o sion. Potential-pH diagrams. Polarization curves. Forms of corro include: general and galvanic corrosion, pitting and stress corrosio ing. Methods of corrosion prevention.

410 EXTRACTIVE METALLURGY I—PYROMETALLURGY (3+0) 3 credits
Quantitative and descriptive treatment of the unit processes us fundamentals of smelting, melting, refining of metals by high temp methods. Prerequisite: CH E 361; METE 232. (Same as CH E 410.)

411 PYROMETALLURGY LABORATORY (0+3) 1 credit
Special methods not ordinarily included in chemical analysis to m quantities that are important in studying and controlling pyrometall operations. Corequisite: METE 410.

416, 616 X-RAY DIFFRACTION (2+3) 3 credits
Generation and properties of X-rays; diffraction techniques, st determination, X-ray fluorescence and microscopy analysis of Prerequisite: METE 350.

420 PHYSICAL PROPERTIES OF CRYSTALS (2+0) 2 credits
Crystal physics, equilibrium properties of crystals, stress and stra sors, thermal expansion, Piezoelectricity, elasticity, transport prope crystal. Prerequisite: METE 350.

421, 621 MINERAL PROCESSING II (3+0) 3 credits
Continuation of METE 322 with emphasis on flotation. Prerequisite: CH

423, 623 SURFACE CHEMISTRY OF MINERALS (3+0) 3 credits
Thermodynamics of surfaces, electrostatic and electrokinetic phen adsorption at interfaces, and properties of monolayers as applied cessing of minerals. Prerequisite: CHEM 354. (Same as CH E 423.)

425, 625 HYDROMETALLURGICAL REACTIONS (3+0) 3 credit Systematic treatment embracing dissolution of minerals, leaching, p tation, and complex formation in aqueous systems. Prerequisite: 354.

430 SOLID STATE KINETICS (3+0) 3 credits
Homogeneous and heterogeneous nucleation rates, diffusional g kinetics, cellular phase separation, precipitation hardening; energ Guinier Preston Zones. Prerequisite: METE 460.

431, 631 EXTRACTIVE METALLURGY II -HYDROMETALLURGY (3+0) 3 credits
Quantitative and descriptive treatment of unit processes used and fundamentals of leaching, precipitation, electrolysis, both liquid and resin ion exchange, and purification of metals by low temperature methods. Prerequisite: METE 232; CH E 361.

433-434, 633-634 ADVANCED METALLURGY 1 to 4 credits each
Advanced studies in mineral dressing or chemical metallurgy (including laboratory investigations.)

450 TECHNIQUES OF PROCESS DESIGN AND ECONOMICS (3+0) 3 credits
(See CH E 450 for description.)

460 PHYSICAL METALLURGY I (2+3) 3 credits
Structure, properties and selection of alloys, vacancies and diffusion, phase diagrams, nucleation and growth, hardening of steels, creep, fracture. Prerequisite: METE 350.

461, 661 PHYSICAL METALLURGY II (2+3) 3 credits
Supplementary and advanced treatment of topics introduced in METE 350.

462, 662 THERMODYNAMICS OF IRREVERSIBLE PROCESSES (3+0) 3 credits
Thermodynamics treatment of irreversible metallurgical, chemical, and electrochemical processes, transport processes, coupling phenomena, etc. Prerequisite: MECH 371 or CH E 361 and CHEM 353. (Same as CH E 462.)

470 PROCESS EQUIPMENT DESIGN (3+0) 3 credits
Design methods for chemical and metallurgical engineering process equipment with emphasis on fluid mechanics, heat transfer and mass transfer Systems. Prerequisite: METE 450.

472 INTRODUCTION TO CERAMICS (3+0) 3 credits
Structures and imperfections, atom mobility, grain boundaries, ceramic phase diagrams, transformation, grain growth and sintering, properties and applications. Prerequisite: MATH 285; METE 350.

482 DESIGN PROJECT (1+6) 3 credits
(See CH E 482 for description.)

484, 684 HEAT TRANSFER (3+0) 3 credits
Chemical engineering heat transfer with applications to design. Fundamentals of thermal transport, steady and unsteady state thermal conduction, convection and radiant heat exchange with applications to thermal recuperators and regenerators, computer methods in design. Corequisite: CH E 373.

493, 693 MASS TRANSFER (3+0) 3 credits
Diffusional processes, mass transfer coefficients, multiphase equilibris; design and specification of gas-liquid, liquid-liquid and solid-liquid operations; single and multistage operations. Prerequisite: CH E 484.

495, 695 SPECIAL PROBLEMS 1 to 3 credits
Individual research problems in metallurgy. Maximum of 6 credits.

700 APPLIED MATHEMATICS IN CHEMICAL AND METALLURGICAL ENGINEERING (3+0) 3 credits
Application of ordinary and partial differential equations, transforms, the calculus of finite differences and numerical methods in chemical and metallurgical engineering problems. Prerequisite: MATH 285 or MECH 300; CH E 493; METE 431.

701-702 ADVANCED METALLURGY 1 to 5 credits each
(a) General metallurgy, (b) metallurgical analysis, (c) mineral dressing, (d) pyrometallurgy, (e) hydrometallurgy, (f) electro-metallurgy, (g) nonferrous metallurgy, (h) ferrous metallurgy, (j) physical metallurgy, (k) metallorgaphy, (m) heat treatment, (n) mechanical metallurgy, (p) history of metallurgy. These courses consist of either lectures, periodic conferences, supervised reading, laboratory or field work. May be repeated more than once to pursue different studies.

703 ADVANCED PHYSICAL METALLURGY (3+0) 3 credits
Advanced treatments of mechanical deformation, dislocation theory, surface structure, solidification, annealing, phase transformations, hardening mechanisms in steel and other selected topics.

711 ADVANCED CORROSION PRINCIPLES (3+0) 3 credits
Advanced electrochemical theory of corrosion mechanism. Experimental technique in study of corrosion. Evaluation of current research progress in various topics in corrosion taken from the literature. Prerequisite: METE 401.

715 X-RAY DIFFRACTION (1+6) 3 credits
Theory of X-ray diffraction and methods used in obtaining and interpreting X-ray diffraction diagrams.

721 ALLOY SELECTION AND FAILURE ANALYSIS (3+0) 3 credits
Fundamentals of alloying element behavior in metals. Alloying for mechanical strength and corrosion resistance. Identification and prevention of various failure modes including fracture, corrosion and wear. Prerequisite: METE 350 or equivalent.

725 PROCESS ENGINEERING OF COMMINUTION (2+3) 3 credits
Crushing and griding theory and its application in simulation and control of comminution circuits. Prerequisite: MATH 320 or MECH 300.

726 PIPELINE TRANSPORT OF SLURRIES (2+1) 3 credits
Principles of the flow of liquid-solid slurries in pipes and rotational viscometers and application to the design of slurry pipelines. Prerequisite: MATH 320 or MECH 300.

728 INTERFACIAL PHENOMENA (3+0) 3 credits
Surface chemical and physical phenomena associated with the boundary between two phases. Prerequisite: MATH 320 or MECH 300; CHEM 354.

731 ADVANCED PROCESS CONTROL (3+0) 3 credits
Selection of topics of interest in Process Control Research including: control applications of process dynamic modeling, dynamic testing and analysis, simulation of dynamic systems.

738 ADVANCED CERAMIC MATERIALS (3+0) 3 credits
Special methods for production, processing. Advanced concepts in phase equilibria, transformation, grain growth and sintering and properties in application of ceramic materials problems. Prerequisite: METE 350.

741 ADVANCED KINETICS AND REACTOR DESIGN (3+0) 3 credits
Complex reaction rates, networks; catalytic processes, gas-solid reactions batch, plug flow, perfectly mixed flow reactor equations; stability analysis, homogeneous, heterogenous models; fluidized bed reactors. Prerequisite: CH E 440.

751 PHYSICS OF METALS (3+0) 3 credits
Theoretical study of the metallic state. Emphasis upon crystal structure, elastic and plastic properties, crystal imperfections and thermal and magnetic properties.

760-761 ADVANCED METALLURGICAL THERMODYNAMICS (3+0) 3 credits each
Applications of thermodynamics to physicochemical hydrodynamic and pyrometallurgical unit processes. Prerequisite: MATH 320 or MECH 300, CH E 361. 437 or 438; METE 431.

762 STATISTICAL THERMODYNAMICS (3+0) 3 credits
Introduction to statistical thermodynamics with applications to metallurgy and chemical engineering. Prerequisite: CH E 361.

764 ADVANCED FLUID DYNAMICS (3+0) 3 credits
Advanced concepts in theoretical and applied fluid and heat dynamics involving steady state, transient and dyclic phenomena in chemical and metallurgical engineering. Prerequisite: MATH 320; CH E 373 or METE 373.

765 ADVANCED MASS TRANSFER (3+0) 3 credits
Multicomponent diffusion, mass transport models, advanced concepts in analysis and design of continuous and multistage separation processes, advanced topics including recent literature. Prerequisite: MATH 320; CH E 493 or METE 493.

773 PRECIOUS METALS HYDROMETALLURGY (3+0) 3 credits
Examination of processes for processing gold and silver ores. Field trip required.

790 MINERAL INDUSTRY SEMINAR 1 to 3 credits
Review and discussion by staff members and graduate students of individual research or important new publications concerning the mineral industry and related sciences. Maximum of 6 credits. Prerequisite: graduate standing or faculty member. (Same as GEOL 790, MINE 790.)

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits.

799 DISSERTATION 1 to 24 credits
For majors in the metallurgical engineering doctoral program only.

Inactive Courses
441 641 METALLURGY OF REACTIVE METALS (2+0) 2 credits
452 652 INTRODUCTION TO THE STRUCTURE AND PROPERTIES OF SOLIDS (3+0) 3 credits
752 MAGNETIC PROPERTIES OF SOLIDS (3+0) 3 credits

MICROBIOLOGY (MICR)

401, 601 MEDICAL MICROBIOLOGY (7+6) 9 credits
Fundamental concepts of immunochemistry, cellular immunology, clinical immunology, medical bacteriology, virology, medical mycology and parasitology as they apply to medicine and infectious diseases.

483, 683 MEDICAL MYCOLOGY (1+6) 3 credits
Application of mycological techniques to clinical specimens in the identification of disease-causing fungi. Prerequisite: BIOL 112 or equivalent.

487, 687 PROBLEMS IN INFECTION AND IMMUNITY (1+0 per credit) 1 to 3 credits
Research and/or seminar-oriented elective in either bacteriology, immunology, mycology or virology.

490 INDEPENDENT STUDY 1 to 4 credits

711 RECOMBINANT DNA TECHNIQUES (0+9) 3 credits
Intensive laboratory experience covering basic principles and techniques of gene cloning. Methods for growing and isolating vectors, gel analysis of restriction fragments and selection of specific recombinant DNA molecules. Prerequisite: B CH 400, 600 or equivalent. Advance approval of department.

780 INTRODUCTORY CELLULAR IMMUNOLOGY (3+0) 3 credits
Basic concepts of cellular immunology including immunoglobulin structure, products of the major histocompatibility complex, lymphocyte activation and differentiation and mechanisms of damage mediated by the immune system.

781 ADVANCED MOLECULAR GENETICS (3+0) 3 credits
Current concepts in gene reguation. Research emphasis on genetic systems in higher eukaryotes. Methods of gene mapping and analysis. Mechanisms of regulation during differentiation and development.

784 MOLECULAR MECHANISMS OP VIRUS REPLICATION (3+0) 3 credits
Current issues in virus DNA, RNA and protein synthesis. Emphasis on mechanisms of control of gene expression utilizing model animal and bacterial virus groups.

785 EXPERIMENTAL IMMUNOCHEMISTRY (1+6) 3 credits
Emphases encompass the qualitative and quantitative methods for measurement of immunoglobulins. Mechanisms of antigen and antibody interaction are considered. Prerequisite: B CH 400, 600 or equivalent.

787 CELLULAR AND MOLECULAR BIOLOGY OF CANCER (3+0) 3 credits
Introduction to the basic biology of cancer; development of, and emphasis on, insights from current research; with perspectives relating this research to human cancer.

Inactive Courses
482, 682 MEDICAL BACTERIOLOGY (2+3) 3 credits
484,684 MEDICAL VIROLOGY (2+3) 3 credits
786 CELLULAR IMMUNOLOGY (1+6) 3 credits

MILITARY SCIENCE (MIL)

101 INTRODUCTION TO MILITARY SCIENCE (2+0) 2 credits
Mission, organization, and function of the Armed Services; the role military in relation to national objectives and security; the evolut weapons and warfare.

102 BASIC LEADERSHIP AND ORGANIZATION (2+0) 2 credits
Fundamentals of good leadership to include different theories; funda tal organization and operation of the Army.

201 MILITARY TOPOGRAPHY AND ORIENTEERING (2+0) 2 cr
Proper use and appreciation of maps, photos, and compasses an development of orienteering skills to include cross-country navig over unfamiliar terrain,

203 BASIC TOPICS IN LEADERSHIP SKILLS (1 or 2+0) 1 or 2 cre
Presentation of basic military leadership skills in such areas as land na tion, first aid, desert survival, winter survival, and marksmanship. M repeated to a maximum of 4 credits provided different subject are studied for each period of enrollment.

204 BASIC SUMMER CAMP 2 credits
Six-week camp designed to substitute for the first two years of R Includes map reading, national security, military history, and various military subjects. Course conducted at a military reservation designat the Army.

205 SMALL UNIT LEADERSHIP TECHNIQUES (2+1) 2 credits
Principles and techniques of leading a squad in combat with empha individual roles of squad members, decision making, control and ma ment. Prerequisite: completion of MIL 101, 102, 201.

301 LEADERSHIP IN SMALL UNIT OPERATIONS (3+0) 3 credit
Introduction to the principles and techniques of combat tactics and agement at the platoon level. Emphasis is placed on considered fact the decision-making process; techniques of command and control of tr introduction to the missions, roles, and contributions of the several bra of the Army. Prerequisite: completion of basic program.

302 ADVANCED LEADERSHIP DEVELOPMENT (3+0) 3 credits
Enhances student understanding of the planning and coordinating st the decision-making process and the principles and techniques of mand, control, and management at all levels. Emphasizes clarity of w and oral expression and the need for deliberate analysis of proble produce logical solutions. Prerequisite: completion of basic progran

303 ADVANCED SUMMER CAMP 2 credits
Advanced cadets spend six weeks at an Army installation to learn pra skills in tactics, field living, leadership, weaponry, technical military e ment, military customs and traditions, physical fitness, confidence b ing, and personnel management. Prerequisite: MIL 301, 302.

304 ADVANCED TOPICS IN LEADERSHIP (1 or 2+0) 1 or 2 credi
Includes student research and presentation of leadership styles, leade characteristics, staff procedures, planning, and organization. Maximu 4 credits provided different subject areas are studied for each peri enrollment.

401 SEMINAR ON THEORY AND DYNAMICS OF THE MILITA TEAM (3+0) 3 credits
Explores core values governing officer behavior; the concepts for mil organizations; the theory of military organizations; and tactical em ment of forces emphasizing company-sized operations. Prerequisite: cor tion of basic program.

402 SEMINAR IN LEADERSHIP AND MANAGEMENT (3+0) 3 cr
Stresses administrative and logical matters which confront the comma at platoon and company levels. Introduction to principles of perso fiscal, and supply management, and the philosophy and purpose of tary law. Prerequisite: completion of basic program.

MINING ENGINEERING (MINE)

A. MINERAL INDUSTRY EMPLOYMENT 0 credits
Work for a mining company at least one summer vacation and prepare an acceptable report on the experience. Required for mining engineering majors.

101 INTRODUCTION TO MINING (1+0) 1 credit
Introduction to techniques, practices and problems in modern mining. Field trip required.

210 MINING METHODS (2+0) 2 credits
Introduction to mining systems with emphasis on methods, equipment and terminology of surface and underground mine operations. Prerequisite: MINE 101 or equivalent.

218 MINING ENGINEERING LABORATORY (0+3) 1 credit
Application of unit operations in underground mining. Field evaluation of blasting patterns, support methods and materials handling. Fulfills MSHA training requirement. Prerequisite: MINE 210.

242 INTRODUCTION TO MINERAL MAP MAKING AND MINE SURVEYING (2+3) 3 credits
Theory and practice of mapping and surveying in the mineral industries. Prerequisite: C S 113; MINE 210.

243 APPLIED MINE SURVEYING (0+6) 2 credits
Surface and underground surveying techniques in exploration and mining operations. A charge is made for field expenses. Prerequisite: MINE 242.

301 COAL MINING (2+0) 2 credits
Geology of coal, its constitution and uses. Underground and surface mining of coal including mining methods and equipment. Prerequisite: MINE 210.

310 MATERIALS HANDLING (2 or 3+0) 2 or 3 credits
Design and evaluation of materials handling systems in surface and underground mines. Hoisting, conveyors, track and rubber-tired haulage, load-haul systems. Prerequisite: M E 241, 242, MINE 210.

324 COMPUTER APPLICATIONS (1+3 or 6) 2 or 3 credits
Use of digital computers in the earth sciences, with emphasis on developing student's ability to use computers in industry or research. Prerequisite: C S 113.

344 MINE ENVIRONMENTAL CONTROL (2+3) 3 credits
Theory, and practice of creating safe, healthy, and efficient working environments underground. Mine ventilation techniques. Prerequisite: M E 367, 371.

361 OPERATIONS RESEARCH METHODS (3+0) 3 credits
Introduction to the theory, of Operations Research and its application in the mining industry. Prerequisite: AGEC 270; MINE 213.

400 MINE MANAGEMENT AND ADMINISTRATION (1+0) 1 credit
Principles of management applied to an operating mine. Including: ethics, health and safety, environmental responsibilities, and communication skills. Senior field trip report required.

406 SENIOR REPORT 1 to 3 credits
Formal, comprehensive report on a subject approved by the student's adviser and department chair.

411, 611 MINE ECONOMICS (2+0) 2 credits
Introduction to management accounting principles, balance sheet and income statement, depreciation, depletion and cash flow. Financial evaluation using present value theory,, equipment evaluation and replacement. Risk and sensitivity analysis. Prerequisite: G E 385; MINE 210, 310; MINE 361 or equivalent.

413, 613 MINERAL RESERVE ESTIMATION (3+0) 3 credits
Principles of sampling and the study of the major methods for mineral reserve estimation including polygonal, inverse distance squared and geostatistical. Grade tonnage curves for normal and log normal distribution. Variograms and kriging of mineral reserves. Prerequisite: C S 113 or equivalent; G E 385.

415, 615 COMPUTER AIDED MINE DESIGN (1+3) 2 credits
Introduction to the use of computer systems to design surface and underground mines. Integrated mine design software packages. Prerequisite: C S 113; MINE 210, 242, 361.

418, 618 MINE FEASIBILITY (1+3) 3 credits
Data, techniques, and layout required for a formal mine feasibility report to be prepared on a given mineral deposit. Prerequisite: MINE 411, 413, 415, 615.

425, 625 MINE POWER AND DRAINAGE (2 or 3+0) 2 or 3 credits
Electrical and compressed air power in the design of underground mining and mine water drainage systems. Prerequisite: E E 201; M E 367, 371.

435, 635 AUTOMATION AND ROBOTICS IN MINING (2+0 or 3) 2 or 3 credits
Sensors and actuator elements related to controlling of process, ground movement, and environmental parameters, robotization and remote manipulation in subsurface openings. Prerequisite: E E 201; M E 299; MATH 217.

445, 645 ROCK EXCAVATION (2+0) 2 credits
Current theory and practice in drilling and blasting. Prerequisite: MINE 448.

446, 646 THEORY OF EXPLOSIVES (2+3) 3 credits
Thermodynamic theory and the blasting action of explosives.

448, 648 ROCK MECHANICS (3+3) 4 credits
Mechanical behavior of rock; response to load changes; deformation, failure, discontinuity slip; rock testing. Engineering applications: slopes, pillars, tunnels; reinforcement design. Prerequisite: C E 372; GEOL 332 or equivalent.

451, 651 MINING LAW (3+0) 3 credits
U.S. and foreign, federal and state laws affecting the mineral industry and pertaining to mineral land acquisition, corporations, ethics, mining, taxation, water, environment, labor, safety and welfare.

454, 654 MINING AND SURFACE ENVIRONMENT (2+0) 2 credits
Effects of mining, milling, and smelting on the surface environment, and their control to allow maximum conservation and minimum waste of natural resources. Field trip.

472, 672 WORLD MINERAL ECONOMICS (3+0) 3 credits
Minerals in World Affairs. Interdependence of nations on minerals and the economic and political problems caused by their unequal geographic distribution and divided political control.

482 ECONOMICS OF THE BASE METALS (3+0) 3 credits
Systematic treatment of current aspects of international production and trade in base metals.

495, 695 SPECIAL PROBLEMS 1 to 3 credits each
Individual research problems in mining engineering. Maximum of 6 credits.

701-702 ADVANCED MINING ENGINEERING 1 to 5 credits each
(a) General mining, (b) excavation, (c) drilling, (d) blasting, (e) equipment, (f) transportation, (g) design, (h) surface mining, (j) underground mining, (k) safety, (m) ventilation, (n) mining economics, (p) mine administration, (r) mining law, (s) mineral economics, (t) history of mining, (u) mineral explorations, (v) rock mechanics, (w) mining conservation, (x) nonmetallic mining. These courses consist of either lectures, periodic conferences, supervised reading, laboratory or fieldwork. May be repeated more than once to pursue different studies.

729 ADVANCED COMPUTER APPLICATIONS 1 to 3 credits
Computer systems, languages, and economics. Major individual earth science project on computer. Prerequisite: C S 113 or MINE 324.

745 ADVANCED ROCK MECHANICS (2+3) 3 credits
Field and laboratory studies of applied rock mechanics. Prerequisite: MINE 448.

749 ADVANCED BLASTING METHODS DESIGN 1 to 3 credits
Modern theories in the use of explosives and the design of blasting systems. Prerequisite: MINE 446.

790 MINERAL INDUSTRY SEMINAR 1 to 3 credits
(Same as METE 790).

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790 MINERAL INDUSTRY SEMINAR 1 to 3 credits
(Same as METE 790).

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

Inactive Courses
102 MINERAL MAP MAKING (1+3) 2 credits
316 STATISTICAL ANALYSIS IN THE EARTH SCIENCES (2+0) 2 credits
405 SENIOR REPORT 1 to 3 credits
449, 649 ROCK MECHANICS II (2+3) 3 credits

MUSIC (MUS)

INDIVIDUAL INSTRUCTION: Special fee of $125.00 per half hour lesson.

100 CONCERT CLASS (0+1) 0 credits *S/U only*
Development of listening skills through attendance at musical events: music department concerts, master classes, approved community events.

101 MUSIC FUNDAMENTALS AND EAR TRAINING (3+0) 3 credits
Notation, terminology, intervals, scales and chords. Designed to furnish a foundation for musicianship.

103 CLASS BRASS INSTRUCTION (1+2) 2 credits
Fundamental instruction in each of the instruments and in class teaching procedures. Simple selections, employing various keys and rhythms.

104 CLASS WOODWIND INSTRUCTION (1+2) 2 credits
Fundamental instruction in each of the instruments and in class teaching procedures. Simple selections, employing various keys and rhythms.

106, 306 PEP BAND (0+3) 1 credit each
A performing group for university events. Maximum of 2 credits each.

111, 311 CONCERT CHOIR (3+0) 1 credit each
Performance of representative choral music of all periods; featured in local concerts and on tour. Maximum of 4 credits each.

113 CLASS VOCAL INSTRUCTION (1+0) 1 credit
Fundamentals of tone production, breath control, and practical techniques involved in reading and interpreting songs. Maximum of 4 credits.

117, 317 MARCHING AND CONCERT BAND (0+3) 1 credit each
Marching techniques and performances; performance of concert literature (after marching season). Prerequisite: previous band experience. Maximum of 6 credits each.

118, 318 SYMPHONIC BAND AND WIND ENSEMBLE (0+3)1 credit each
Performance of representative literature for large bands and chamber winds. Prerequisite: previous band experience and audition. Maximum of 6 credits each.

119, 319 SYMPHONIC CHOIR (0+3) 1 credit each
Presentation of large-scale choral works. Maximum of 6 credits each.

120 SURVEY OF JAZZ (3+0) 3 credits
Chronological study of jazz music and musicians with emphasis on directed listening.

121 MUSIC APPRECIATION (3+0) 3 credits
Historical and cultural background of music. A general course in music appreciation open to all students. Representative works are heard and analyzed.

122 MASTERWORKS OF MUSIC (3+0) 3 credits
Major representative works of the standard repertory with emphasis on their historical and cultural milieu. Concert attendance required.

123 CLASS STRING INSTRUCTION (1+2) 2 credits
Elementary instruction in violin, viola, cello and bass.

124 CLASS PERCUSSION INSTRUCTION (1+2) 2 credits
Elementary instruction in the various percussion instruments.

125, 325 UNIVERSITY ORCHESTRA (0+3) 1 credit each
One or more concerts of representative orchestra literature are given each semester. Maximum of 6 credits each.

131, 331 JAZZ IMPROVISATION (1+1) 1 credit
Performance oriented study of improvisation in the jazz idiom. required. Maximum of 4 credits each.

149 STUDIO INSTRUMENT/VOICE FOR NONMAJORS (1/2+0) 1 credit
Applied music instruction; includes style periods, literature, compo requisite: basic competency on instrument (audition). Maximum of

151, 351, 751 PIANO (1/2 or 1+0) 1 to 4 credits each
Maximum of 16 lower-division credits, 16 upper-division credits ate credits. Prerequisite: audition for MUS 351 or 751.

153 VOICE (1/2 or 1+0) 1 to 3 credits each
MUS 218 is a corequisite for MUS 153 for students enrolling for Maximum of 12 lower-division credits.

155, 355, 755 BRASS INSTRUMENTS (1/2 or 1+0) 1 to 4 credit Maximum of 16 lower-division credits, 16 upper-division credits, ate credits. Prerequisite: audition for MUS 355 or 755.

157, 357, 757 WOODWIND INSTRUMENTS (1/2 or 1+0)1 to 4 cr Maximum of 16 lower-division credits, 16 upper-division credits, ate credits. Prerequisite: audition for MUS 357 or 757.

159, 359, 759 STRINGS (1/2 or 1+0) 1 to 4 credits each
Maximum of 16 lower-division credits, 16 upper-division credits, ate credits. Prerequisite: audition for MUS 359 or 759.

161, 361, 761 PERCUSSION (1/2 or 1+0) 1 to 4 credits each
Maximum of 16 lower-division credits, 16 upper-division credits, ate credits. Prerequisite: audition for MUS 361 or 761.

163, 363, 763 ORGAN (1/2 or 1+0) 1 to 4 credits each
Maximum of 16 lower-division credits, 16 upper-division credits, ate credits. Prerequisite: MUS 282 or equivalent. Prerequisite: aud MUS 363 or 763.

181-182 FUNCTIONAL PIANO I AND II (0+2) 1 credit each
Class instruction for students with limited or no keyboard exper

201 MUSIC HISTORY I (3+0) 3 credits
Survey of Western music: origins through the Baroque period.

202 MUSIC HISTORY II (3+0) 3 credits
Classical and Romantic periods.

203 MUSIC HISTORY III (3+0) 3 credits
Twentieth century.

204 CHAMBER MUSIC FOR NONMAJORS (0+2) 1 credit
Performance of chamber music literature: knowledge of style composers, literature. Prerequisite: sufficient performance com (audition). Maximum of 3 credits.

205, 405, 605 UNIVERSITY CHAMBER MUSIC ENSEMBLE (0+2) 1 credit each
Performance of chamber music literature. Maximum of 6 credits

207-208 THEORY I AND II (3+0) 3 credits each
Counterpoint and harmony (written and keyboard). Prerequisite 208 is 207

209-210 SIGHTSINGING AND DICTATION I and II (0+2) 1 cre (3+0) 3 credits
Solfege and dictation, rhythmic and melodic.

215, 415, 615 BRASS QUINTET (0+2) 1 credit each
Performing ensemble specializing in brass quintet literature. Maxi 6 credits each.

218 VOCAL REPERTORY COACHING (1+0) 1 credit
Performance of art song literature of all styles and periods. Empl performance of complete cycles and on contemporary song lit Open to vocalist and pianist. Maximum of 6 credits.

220, 420, 620 BRASS ENSEMBLE (0+2) 1 credit each
A performance organization specializing in brass ensemble literature from the Renaissance to the present. Maximum of 6 credits each.

221 SPECIAL STUDIES IN MUSIC LITERATURE (2 or 3+0) 2 or 3 credits
Special topics may include: Jazz in America; the Classical Style; the American Musical Theatre. Maximum of 6 credits.

222 ELECTRONIC MUSIC AND SOUND RECORDING TECHNIQUES (1+2) 2 credits
Electronic music, analog and digital. Includes techniques of electro-acoustical recording (tape and computer sequencing).

223 RECORDING TECHNIQUES AND MIDI (1+2) 2 credits
Advanced musical instrument digital interface (MIDI) applications in computer sequencing with analog tape recording; includes computer sequencing, synthesizer programming effects. Prerequisite: MUS 222.

229, 429, 629 TECHNIQUES OF PIANO ACCOMPANIMENT (1+1) 1 credit each
Practical experience in accompanying vocal and instrumental performers. Prerequisite: audition required. Maximum of 4 credits each.

230, 430, 630 UNR CONCERT JAZZ BAND (0+2) 1 credit each
A performing ensemble specializing in jazz and rock literature and performance practices. Maximum of 6 credits each.

270 OPERA THEATRE I (0+2) 1 credit
Beginning music theatre techniques for singers, pianist-coaches, stage directors, including production and performance. Maximum of 4 credits.

281-282 FUNCTIONAL PIANO III AND IV (0+2) 1 credit each
Class instruction for students with minimal keyboard experience or as a continuation of MUS 181-182.

301-302 THEORY III AND IV (3+0) 3 credits each
Continuation of MUS 207-208, including study of diatonic and chromatic harmony. Prerequisite: MUS 207-208 or equivalent.

303 KEYBOARD HARMONY (2+0) 2 credits
Keyboard approach to the study of chord progressions, the realization of figures basses, and harmonization of melodies and basses. Designed for piano and organ majors.

307-308 SIGHTSINGING AND DICTATION III, IV (0+2) 1 credit each
Advanced solfege and dictation, rhythmic and melodic. Prerequisite: MUS 210.

310 ORCHESTRATION (3+0) 3 credits
Arranging music for full orchestra, band and chorus. Transposition, voicing transcriptions from piano score. Prerequisite: MUS 301-302.

321 EXPLORING WORLD MUSIC (3+0) 3 credits
Music and human culture focusing on non-Western traditions. Representative societies explored. Field study, music-making projects, performance analysis required. Prerequisite: MUS 121 or 203.

322 INSTRUMENTAL CONDUCTING (2+0) 2 credits
Technique of the baton and score reading. Practical leadership experience may be gained by directing the band, orchestra or ensembles.

323 MUSIC METHODS FOR ELEMENTARY MUSIC SPECIALIST (3+0) 3 credits
Methods, materials and special approaches for teaching elementary classroom instrumental and vocal music, grades K-6. Prerequisite: MUS 208.

324 FUNDAMENTALS AND METHODS FOR ELEMENTARY TEACHERS (3+0) 3 credits
Basic music fundamentals for classroom teachers; methods of teaching songs, using instruments, creative activities, listening, movement and rhythmic response.

337 STAGE BAND ARRANGING (2+2) 2 credits
Analysis of the jazz harmonic idiom as applied to the instrumentation of the modern dance orchestra in which arrangements are written and played. Prerequisite: MUS 207-208.

350 KEYBOARD LITERATURE (2+0) 2 credits
Literature for harpsichord, organ and piano with particular reference to the historical and musical characteristics of the works. Recordings and student performances are utilized. Prerequisite: functional keyboard reading ability.

352 CHORAL CONDUCTING AND METHODS (3+0) 3 credits
Rehearsal problems and techniques for standard choral literature. Materials, planning and organization of choral groups. Prerequisite: MUS 322.

353, 753 VOICE (1/2 or 1+0) 1 to 4 credits
Maximum of 16 upper-division credits, 4 graduate credits. Prerequisite: audition required.

354 INSTRUMENTAL MUSIC METHODS (3+0) 3 credits
Organization of bands, orchestra, instrumental ensembles in the public schools; materials, techniques and problems. Prerequisite: MUS 207-208, and participation in University Band, University Singers or University Community Symphony.

401 ADVANCED STAGE BAND ARRANGING (2+0) 2 credits
Analysis of materials and techniques developed in MUS 337. Writing and performance of arrangements on professional level are required. Prerequisite: MUS 337 or equivalent.

403 COUNTERPOINT (.5 or 1+0) 1 or 2 credits
Individual instruction in creative application of strict and free counterpoint based upon models of the 18th and 20th centuries. Prerequisite: MUS 208. Maximum of 8 credits.

406, 606 PERFORMANCE PRACTICE (2+0) 2 credits
Performance practices of various eras and effect on presentation of representative works during the present and in their own time. Maximum of 6 credits. Prerequisite: MUS 201-202.

407, 607 SYMPHONIC LITERATURE (2+0) 2 credits
Detailed study and analysis of the development of the symphony. Prerequisite: MUS 201-202.

408 FORM AND ANALYSIS (3+0) 3 credits
Analysis of song forms, variations, rondo and sonata forms. Prerequisite: MUS 301-302 .

409, 609 COMPOSITION (.5 or 1+0) 1 or 2 credits
Original writing in traditional forms for a variety of media with preparation for public performance. Prerequisite: MUS 302. Maximum of 8 undergraduate credits; 4 graduate credits.

414, 614 CHORAL LITERATURE (2+0) 2 credits
History and analysis of representative choral works from 1600 to the present. Prerequisite: MUS 201-202.

418 INTERMEDIATE VOCAL REPERTORY COACHING (1+0) 1 credit
Performance of art song literature of all styles and periods. Emphasis on performance of complete cycles and on contemporary song literature. Open to vocalists and pianists. Prerequisite: MUS 218. Maximum of 6 credits.

422, 622 MUSIC OF TODAY (2+0) 2 credits
Recent trends in music and their relationship with the past. Analysis of special harmonic, melodic and structural features of 20th century music. Prerequisite: MUS 201-202.

423, 623 CHAMBER MUSIC LITERATURE (2+0) 2 credits
Music written for small groups in Baroque, Classical, 19th and 20th century periods. Prerequisite: MUS 201-202.

424, 624 AMERICAN MUSIC (2+0) 2 credits
Detailed examination of the music of the U.S. from the Revolutionary War to the present. Prerequisite: MUS 201-202.

426, 626 VOCAL LITERATURE (2+0) 2 credits
Solo and chamber vocal music from the Renaissance to the present. Prerequisite: MUS 201-202.

427 MARCHING BAND PROBLEMS (2 + 0) 2 credits
Organization, development and rehearsal techniques used in the marching band, including pageantry and precision drill. Prerequisite: prior experience and approval of instructor.

428, 628 OPERA LITERATURE (2+0) 2 credits
Detailed consideration of selected operas of the various nationalities and periods in music history. Prerequisite: MUS 201-202.

447, 647 DIRECTORS' WORKSHOP (1+0) 1 credit
Scheduled during Tahoe Music Camp; designed to use band, choral and orchestral groups for demonstration.. Special attention to new repertoire, program planning and supervised conducting. Individual conferences are scheduled with guest and resident music camp faculty. Maximum of 3 credits.

448, 648 ADVANCED BAND ADMINISTRATION AND RELATED PROBLEMS (2+0) 2 credits
Organizing the program, administering the physical plant and equipment, establishing favorable teacher-pupil relations, directing the musical program and reviewing recent developments in the field. Prerequisite: teaching experience or exceptional background in the area.

449, 649 CHORUS PROBLEMS (2+0) 2 credits
Demonstration and lecture on aspects of vocal technique and organization involved in directing high school and college choruses.

450, 650 PIANO MATERIALS AND METHODS (2+0) 2 credits
Mechanics of piano teaching; technical and pedagogical literature, typical problems and solutions, the historical development of piano pedagogy.

470 OPERA THEATRE II 1 to 3 credits
More advanced music theatre techniques, including major roles for singers in UNR Opera Theater productions and one-act opera projects for directors and pianist-coaches. Maximum of 8 credits.

483, 683 PIANO SEMINAR (0+2) 1 credit
Special problems in performance, literature and pedagogy. Maximum of 4 credits.

484, 684 WORKSHOP/CONFERENCE IN MUSIC (0+2 per credit) 1 to 3 credits
Topics in music and music education. Maximum of 12 credits each

485, 685 INTERNSHIP IN MUSIC EDUCATION (0+2 per credit) 1 to 3 credits
Application of course content included in MUS 323, 352 or 354 in the schools or community agencies under the supervision of school or agency personnel and university staff members. Prerequisite: MUS 323, 352 or 354. Maximum of 12 credits each.

495, 695 INDEPENDENT STUDY 1 to 3 credits
Maximum of 6 credits.

498 SEMINAR IN MUSIC (2+0) 2 credits
Synthesizes formal training in performance, theory and the history of music Prerequisite: MUS 201, 308; piano proficiency.

499 SENIOR RECITAL 0 credits *S/U only*
(a) Applied music. Full recital. (b) Music education. One-half recital.

618 VOCAL REPERTORY COACHING (1+0) 1 credit
Performance of art song literature of all styles and periods. Emphasis on performance of complete cycles and on contemporary song literature. Open to vocalists and pianists. Maximum of 12 credits each.

621 ADVANCED INSTRUMENTAL PERFORMANCE (0+3) 1 credit
Offered for (a) marching and concert band, (b) symphonic band and wind ensemble, (c) university orchestra, or (d) jazz improvisation. Prerequisite: prior college orchestra or band experience and superior ability as a performer. Maximum of 12 credits each.

627 ADVANCED CHORAL PERFORMANCE (0+3) 1 credit
Study and performance of representative choral music of all periods, including major choral works. Appearance in concerts locally and on tour required, as well as work beyond ensemble participation, such as that of assistant conductor, section leader or soloist. Offered for (a) concert choir, or (b) symphonic choir. Maximum of 12 credits.

705 ADVANCED OPERA PERFORMANCE 1 or 2 credits
Performance of major roles in University Opera productions. Maximum of 12 credits.

709 CONTEMPORARY THEORY AND PRACTICE (3+0) 3 credits
Advanced harmonic practice and contemporary analytical procedures concentrating on music since 1900. Prerequisite: MUS 301-302.

721 ADVANCED CHORAL CONDUCTING (2+0) 2 credits
Skills required for effective direction of choral groups. Prerequisite: MUS 322 or equivalent. Maximum of 4 credits.

722 ADVANCED INSTRUMENTAL CONDUCTING (2+0) 2 credits
Advanced techniques of instrumental conducting. The techniques of interpretation and study of band and orchestra scores. Prerequisite: MUS 322 or equivalent. Maximum of 4 credits.

730 INTRODUCTION TO GRADUATE STUDY (3+0) 3 credits
Bibliography and research methods in music.

731 ADVANCED MUSIC HISTORY (3+0) 3 credits
Intensive study of western music from the Medieval, Renaissance and Baroque periods. Prerequisite: MUS 201, 203.

732 ADVANCED MUSIC HISTORY (3+0) 3 credits
Intensive study of western music from the Classical, Romantic and Modern periods. Prerequisite: MUS 201-202.

740 MUSIC EDUCATION RESEARCH MATERIALS AND TECHNIQUES (3+0) 3 credits
Introduction to music education research literature, techniques, interpretation of research findings, research design in descriptive, experimental and philosophical studies; use of computer searches.

741 NEW DEVELOPMENTS IN MUSIC EDUCATION (3+0) 3 credits
Significant new directions in elementary and secondary music curricula; impact of Orff, Kodaly, Suzuki and other arts; education approaches.

749 SECONDARY INSTRUMENT OR VOICE (1/2+0) 1 credit
Individual instruction. Offered in (a) piano, (b) voice, (c) brass, (d) woodwind, (e) string, (f) percussion, (g) organ. Maximum of 12 credits.

790 SEMINAR IN MUSIC 1 to 3 credits
Special problems in music history or theory with their professional implications. Maximum of 6 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 3 credits
For master of music (Plan B) students.

797 THESIS 1 to 6 credits
(a) Research, master of arts, (b) performance, master of music. With approval of the student's committee a professional paper may meet 2 of the 6 performance credits.

Inactive Courses
303 KEYBOARD HARMONY (2+0) 2 credits
348 ADVANCED INSTRUMENTAL TECHNIQUES (2+0) 2 credits
446 PRECISION DRILL WORKSHOP (1+3) 1 credit
700-701 ADVANCED COMPOSITION (2+0) 2 credits each
702 THE AESTHETICS AND PHILOSOPHY OF MUSIC (2+0) 2 credits
715 STUDIES IN ELIZABETHAN AND TUDOR MUSIC (2+0) 2 credits
724 PHILOSOPHY OF MUSIC EDUCATION (2+0) 2 credits

NURSING (NURS)

300 SPECIAL TOPICS 1 to 10 credits
Topics may be chosen from one or more of the following: (a) adult nursing, (b) maternal-child nursing, (c) psychiatric/mental health nursing, (d) issues in nursing, (e) foundations of nursing, (f) levels of health care needs. Maximum of 10 credits.

301 HEALTH ASSESSMENT (2+3) 3 credits
Theory of and practice in nursing assessment skills required to provide health care. Corequisite: NURS 303, 317, 318.

303 NURSING INTERVENTIONS (1+3) 2 credits
Focus is on individuals who require human care nursing interventions for basic human needs. Includes practice of psychomotor skills. Corequisite: NURS 301, 317, 318. For nursing majors only.

311 FOUNDATIONS OF PROFESSIONAL PRACTICE (3+0) 3 credits
Concepts, theories, and processes forming the basis of professional nursing practice. Prerequisite: licensed in Nevada as a registered nurse.

317 INTRODUCTION TO HUMAN CARE NURSING (3+0) 3 credits
Introduction to the art and science of nursing. Focus is on nursing theories, historical and ethical issues, and utilization of nursing process. Prerequisite: admission to major. Corequisite: NURS 301, 303, 318.

318 NURSING PRACTICE (0+15) 5 credits
Application of the nursing process to care of individuals in restorative and acute health care settings. Prerequisite: admission to major. Corequisite: NURS 301, 303, 317.

319 PHARMACOLOGY (3+0) 3 credits
Introduction to common pharmacotherapies, actions, interactions, indications, contraindications and adverse affects. Corequisite: NURS 301, 303, 317, 318. For nursing majors only.

322 HERITAGE OF NURSING (3+0) 3 credits
Social, political, economic, cultural and historical factors influencing nursing as a discipline. Intended for nursing and non-nursing majors.

327 CARE OF FAMILIES THROUGOUT LIFECYCLES: THEORY (4+0) 4 credits
Focus on theory related to human care nursing of families. Emphasis on experiences of childbearing/childrearing families throughout lifecycles.

328 CARE OF FAMILIES THROUGHOUT LIFECYCLES: PRACTICE (0+18) 6 credits
Nursing process is utilized in care of families throughout lifecycles. Emphasis is on human care of childbearing/childrearing families in a variety of settings. Prerequisite: NURS 301, 303, 490.

337 PATHOPHYSIOLOGY (3+0) 3 credits
Emphasis on altered physiological processes across the lifespan. Etiological factors, clinical manifestations and management of altered processes are discussed. Prerequisite: BIOL 251, 262, 263.

391 INDEPENDENT STUDY 1 to 6 credits
Opportunity for students to master areas of knowledge through independent organization and assimilation of materials under guidance of faculty advisers.

417 CLIENTS AT RISK FOR ALTERATIONS IN HEALTH: THEORY (4+0) 4 credits
Theories of nursing, behavioral and natural sciences, and humanities related to disease prevention, promotion, maintenance and restoration of health for individuals, families, groups, and communities. Prerequisite: NURS 327, 328, 337. Corequisite: NURS 418.

418 CLIENTS AT RISK FOR ALTERATIONS IN HEALTH: PRACTICE (0+18) 6 credits
Focus on health promotion, disease prevention, maintenance and restoration of health for individuals, families, groups and communities. A holistic approach is applied in care. Prerequisite: NURS 327, 328, 337. Corequisite: NURS 417.

419 ESSENTIALS OF RESEARCH IN NURSING (3+0) 3 credits
Research process and its relationship with nursing theory and practice. Emphasis on evaluation and utilization of nursing research.

427 CLIENTS WITH COMPLEX ALTERATION IN HEALTH:THEORY (3+0) 3 credits
Focus on theories of human care nursing for individuals, families, groups and communities experienced complex alterations in health. Prerequisite: NURS 417, 418, 419. Corequisite: NURS 428, 441, 450.

428 CLIENTS WITH COMPLEX ALTERATIONS IN HEALTH: PRACTICE (0+6) 6 credits
Focus on the application of creative problem with individuals, families, groups and communities experiencing complex alterations in health in a variety of settings. Prerequisite: NURS 417, 418, 419. Corequisite: NURS 427, 441, 450.

430, 630 AGING AND HEALTH (3+0) 3 credits
Increases awareness of health issues in aging. Issues include definitions of health, high-risk elderly, and future aging.

441 NURSING MANAGEMENT/LEADERSHIP (3+0) 3 credits
Introduction to select theories of leadership, decision making, motivation and management. Focus on leadership styles conducive to caring/supportive nursing practice environments. Prerequisite: NURS 417, 418, 419. Corequisite: NURS 427, 428, 450.

445 NURSING RESEARCH PRACTICUM (1+3 per credit) 2 or 3 credits
Practicum in ongoing research projects. Emphasis on data collection methods, analysis, interpretation, and report writing.

450 LEADERSHIP PRACTICUM (0+6) 2 credits
Beginning leadership and management skills under the direct supervision of professional nurse managers in various health care settings. Corequisite: NURS 427, 428, 441. Prerequisite: NURS 427, 428, 441.

490, 690 SPECIAL PROBLEMS AND PRACTICES IN NURSING 1 to 10 credits
Individual or group study in areas relevant to nursing theory and/or practice. Maximum of 10 credits.

491 INDEPENDENT STUDY 1 to 6 credits
(See NURS 391 for description.)

701 ROLE OF THE NURSE ADMINISTRATOR (3+0) 3 credits
Functions of the nurse administrator in any health care organization are analyzed and appraised for predicted application.

703 ROLE OF THE NURSE EDUCATOR (3+0) 3 credits
Learning theories, principles of curriculum development and evaluation, teaching methods and modern technology are within the teaching role of the nurse. Prerequisite: NURS 706.

704 PRACTICUM IN NURSING EDUCATION (0+9) 3 credits
Application of teaching/learning principles and synthesis of the nurse educator role in vocational or technical nursing education, hospital inservice or patient education programs. Prerequisite or corequisite: NURS 703.

706 THEORETICAL FOUNDATIONS OF NURSING (3+0) 3 credits
Analysis of conceptual nursing frameworks with focus on issues related to theory development in nursing.

708 NURSING THEORIES AND FAMILY HEALTH PATTERNS (3+0) 3 credits
Analysis of functional and dysfunctional family health patterns in relation to nursing practice. Synthesis of nursing and family theories with emphasis on nursing interventions. Prerequisite: NURS 706.

720 RESEARCH IN NURSING (2+3) 3 credits
Introduction to process of scientific inquiry and literature of nursing research. Includes development of research proposal. Prerequisite: NURS 706.

721 CLINICAL PHENOMENA I (3+0) 3 credits
Analysis of models of health focusing on human responses to illness/transitions throughout the life span. Prerequisite or corequisite: NURS 708.

722 ADVANCED NURSING PRACTICE I: ADULT HEALTH (0+9) 3 credits
Clinical practicum focusing on patterns of human responses to illness/transitions in adults. Emphasis on explanatory decisions related to adult health problems. Prerequisite: NURS 721. Prerequisite or corequisite: advanced physiology cognate.

723 ADVANCED NURSING PRACTICE I: PSYCHIATRIC/MENTAL HEALTH (0+9) 3 credits
Clinical practicum focusing on patterns of human responses to stress throughout the life span. Emphasis on explanatory decisions related to psychosocial problems. Prerequisite NURS 721. Prerequisite or corequisite: advanced social/behavioral cognate.

724 ADVANCED NURSING PRACTICE I: CHILDREARING FAMILY (0+9) 3 credits
Clinical practicum focusing on patterns of human responses to illness or transitions in childrearing families. Emphasis on explanatory decisions related to childbearing or childrearing. Prerequisite: NURS 721. Prerequisite or corequisite: advanced physiology cognate.

730 THEORETICAL FOUNDATIONS FOR CHANGE (3+0) 3 credits
Exploration and analysis of current health issues affecting advanced nursing practice. Emphasis on the nurse as a change agent within health care organizations.

731 CLINICAL PHENOMENA II (3+0) 3 credits
Continuation of analysis of human responses to illness/transitions throughout the life span in specialty areas of clinical nursing practice. Prerequisite: NURS 722 or 723 or 724.

732 ADVANCED NURSING PRACTICE II: ADULT HEALTH (0+9) 3 credits
Clinical practicum with continued focus on patterns of human responses to illness/transitions in adults. Emphasis on analysis of managerial decisions related to adult health problems. Prerequisite: NURS 722. Prerequisite or corequisite: NURS 731.

733 ADVANCED NURSING PRACTICE II: PSYCHIATRIC/MENTAL HEALTH (0+9) 3 credits
Clinical practicum with continued focus on patterns of human responses to stress throughout the life span. Emphasis on analysis of managerial decisions related to psychosocial problems. Prerequisite: NURS 723. Prerequisite or corequisite: NURS 731.

734 ADVANCED NURSING PRACTICE II: CHILDREARING FAMILY (0+9) 3 credits
Clinical practicum, continued focus on patterns of human responses to illness/transitions in childrearing families . Emphasis on analysis of managerial decisions related to childbearing/childrearing. Prerequisite: NURS 724. Prerequisite or corequisite: NURS 731.

735 ADVANCED NURSING PRACTICE II: NURSING ADMINISTRATION (0+9) 3 credits
Application and testing of organizational and administrative theory within a selected health care setting. Prerequisite: NURS 722 or 723 or 724.

742 ADVANCED NURSING PRACTICE III: ADULT HEALTH (0+9) 3 credits
Synthesis of clinical specialist role in adult health. Analysis of managerial decisions; emphasis on planning, implementation, evaluation of nursing interventions. Includes clinical conference. Prerequisite: NURS 732.

743 ADVANCED NURSING PRACTICE III: PSYCHIATRIC/MENTAL HEALTH (0+9) 3 credits
Synthesis of clinical specialist role in psychiatric/mental health. Analysis of managerial decisions; emphasis on planning, implementation, evaluation of nursing interventions. Includes clinical conference. Prerequisite: NURS 733.

744 ADVANCED NURSING PRACTICE III: CHILDREARING FAMILY (0+9) 3 credits
Synthesis of clinical specialist role with childrearing family. Analysis on managerial decisions; emphasis on planning, implementation, evaluation of nursing interventions. Includes clinical conference. Prerequisite: NURS 734.

745 ADVANCED NURSING PRACTICE III: NURSING ADMINISTRATION (0+9) 3 credits
Synthesis of the nurse administrator role. Analysis of managerial decisions; emphasis on planning, implementation, evaluation of administrative interventions. Includes clinical conference. Prerequisite: NURS 735.

791 SPECIAL TOPICS 1 to 3 credits
Guided literature review and analysis.

793 INDEPENDENT STUDY 1 to 6 credits
Independent research or project in an area of special interest.

794 COLLOQUIA 3 credits
Discussion of advanced selected topics by students and faculty.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 3 credits
Required of all students who wish to complete a master of science degree in nursing under Plan B.

797 THESIS 1 to 6 credits
Required of all students who wish to complete a master of science degree in nursing under Plan A.

Inactive Courses
715 CLINICAL PHYSIOLOGY (2+3) 3 credits
716 ADVANCED AMBULATORY PHARMACY (3+0) 3 credits
749 HEALTH AND HEALTH CARE IN RURAL CULTURES (3+0) 3
750 ADVANCED HEALTH ASSESSMENT AND PROMOTION (2+9) 5 credits
751 MANAGEMENT OF ACUTE EMERGENT ILLNESS (2+9) 5 c
752 MANAGEMENT OF CHRONIC ILLNESS (2+9) 5 credits
753 CLINICAL PRACTICUM IN FAMILY HEALTH (0+27) 5 cred

NUTRITION (NUTR)

121 HUMAN NUTRITION (3+0) 3 credits
Principles of nutrition and their application to well balanced diet laboratory sessions are included each semester.

220 FOOD SERVICE SYSTEMS MANAGEMENT (3+0) 3 credits
Organization and operation of food services; management principle service personnel; labor laws; regulatory agencies; food cost control; keeping.

221 QUANTITY FOOD PURCHASING (3+0) 3 credits
Food purchasing for food service systems, understanding of cost f marketing factors, food laws, quality standards and basic manufac processes.

223 PRINCIPLES OF NUTRITION (3+0) 3 credits
Nutrient functions and bases for nutrient requirement at the cellula Prerequisite: CHEM 101, 142.

270 FIELD EXPERIENCE 1 to 3 credits S/U only
Work with one or more community agencies or firms that utilize nu subject matter as they work with clientele. Maximum of 3 credits.

326 PRINCIPLES OF FOOD SCIENCE (2+3) 3 credits
Concentration on the selection of foods and the chemical and pl properties of food that affect their preparation and acceptability. Pre site CHEM 101, 142.

400, 600 SPECIAL PROBLEMS 1 to 5 credits
Individual study or research in nutrition. Maximum of 10 credits.

419, 619 PRINCIPLES OF HUMAN NUTRITION AND METABO (3+0) 3 credits
Major dietary nutrients and follows their digestion, absorption, metal regulation and role in human disease states. Prerequisite: CHEM 101, 1(

421, 621 READINGS IN FOODS AND NUTRITIONS (2+0) 2 cre
Intensive investigation of current research in foods and nutrition th critical evaluation of recent studies. Prerequisite: 15 credits of phys behavioral science. Maximum of 4 credits.

422, 622 NUTRITION IN THE LIFE CYCLE (1+0) 1 credit
Relationship between nutrient needs, development and feeding pra throughout life cycle: (a) pregnancy and lactation, (b) infancy, (c) hood, (d) adolescence, (e) adults 20-40 years, (f) middle and late Prerequisite: introductory nutrition course. Maximum 1 credit per t

426, 626 DIET THERAPY (3+0) 3 credits
Modification of the normal diet for the prevention and treatment c eases. Prerequisite: NUTR 223 plus approved biochemistry or 15 cre life science.

427, 627 NUTRITIONAL ASSESSMENT AND PHYSICAL PERFORMANCE (2+2) 3 credits
Current concepts including dietary evaluation, anthropometric, cl and biochemical techniques; evaluation of weight control techni examination of relationship between nutrition and physical perform Prerequisite: NUTR 121 or 223.

440, 640 ADVANCED NUTRITION (3+0) 3 credits
Examination of physiologic/biochemical functions of major nutr Prerequisite: CHEM 101, 102, 142; NUTR 419.

470, 670 COMMUNITY NUTRITION (2+3) 3 credits
Programs, policy, nutrition assessment, planning and evaluation i community setting. Prerequisite: NUTR 223.

480, 680 NUTRITION RESEARCH AND CONTEMPORARY ISSUES (1+6) 3 credits
Develop and work through a research problem in nutrition. Discuss contemporary research issues including ethics, research design and grantsmanship. Nutrition majors only.

481 ADVANCED NUTRITION RESEARCH (0+9) 3 credits
Work with faculty on a nutrition research project. Prerequisite: NUTR 480; nutrition majors only.

491, 691 INDEPENDENT STUDY IN CLINICAL NUTRITION 1 to 4 credits
(See FCM 491, 691 for description.)

700 INDEPENDENT STUDY 1 to 3 credits
(Same as FCM 700.)

725 NUTRITION AND HEALTH (3+0) 3 credits
Nutrition in various disease states. Focuses on research studies and methodology in the current literature.

726 SEMINAR IN NUTRITION (1+0) 1 credit
An examination of current nutrition issues and research foci. Maximum of 3 credits.

727 NUTRITION PRACTICUM (0+3 per credit) 1 to 3 credits
Selected clinical nutrition experiences with faculty guidance and supervision. Prerequisite: NUTR 725.

729 COLLOQUIUM (1+0) 1 credit
Presentation and analysis of original research. Maximum of 4 credits.

733 VITAMINS (2+0) 2 credits
Metabolism of vitamins, including absorption, transport, storage, interaction and excretion; historical perspectives, dietary requirements, effects of excesses and dietary deficiencies, and role in health and disease. Prerequisite: CHEM 101, 102, 142; NUTR 323.

734 MINERALS (2+0) 2 credits
Metabolism of minerals, including absorption, transport, storage, interaction and excretion; historical perspectives, dietary requirements, effects of excesses and deficiencies, and role in health and disease. Prequisite: CHEM 101, 102, 142; NUTR 323.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

OBSTETRICS AND GYNECOLOGY (OBGY)

451, 651 CLERKSHIP (1+21) 8 credits
Hospital and ambulatory clinical experiences with preceptorial supervision and daily conferences to develop knowledge (practical, theoretical, basic science), technical and interpersonal skills basic to practicing obstetrics and gynecology.

461, 661 ELECTIVES 2 to 8 credits
Elective experiences in the major subspecialities of obstetrics and gynecology including: (a) advanced gynecology, (b) obstetrics/gynecology pathology, (c) clinical obstetrics, (d) gynecological oncology, (e) obstetrics/gynecology radiology, (f) office obstetrics/gynecology, (g) surgical anatomy, (h) societal perceptions, (j) bioethical issues, (k) history of obstetrics/gynecology, (m) nutrition in pregnancy, (n) nutrients in prenatal care, (p) obstetrical/gynecological literature. Prerequisite: third- or fourth-year medical students. Maximum of 8 credits in any one subtopic. Maximum total credits for any combination of subtopics is 16.

490 690 INDEPENDENT STUDY 1 to 4 credits
Individualized in-depth study of a specific area of obstetrics and gynecology.

PATHOLOGY AND LABORATORY MEDICINE (PATH)

462, 662 PRECEPTORSHIP (0+8) 3 or 4 credits
Observe and participate in forensic autopsies, including microscopic study and field investigations, carried out by medical examiner/coroners.

472, 672 MEDICAL PHOTOGRAPHY AND PHOTOMICROGRAPHY (2+3) 3 credits
Application of sophisticated macroscopic and microscopic photographic techniques and methods to depict normal and abnormal gross and microscopic features. Primarily for medical students.

490, 690 INDEPENDENT STUDY 1 to 4 credits
Research in subject of interest to pathology with approval of departmental committee. Medical students only. Maximum of 8 credits.

601 GENERAL HUMAN PATHOLOGY (3+3) 4 credits
Basic pathology including reactions to disease, i.e., inflammation, repair, neoplasia, circulatory disturbances, cytogenetics, and forensic principles, demonstrated by gross and microscopic laboratory exercises. Prerequisite: ANAT 601; PHSY 601.

602 SYSTEMIC HUMAN PATHOLOGY (4+6) 6 credits
General pathophysiological principles applied to diseases of organ systems. Laboratory consists of seminars, autopsies, CPCs and in-depth study of gross and microscopic appearances of diseased organs. Prerequisite: PATH 601.

603 LABORATORY MEDICINE I (1+3) 2 credits
Theory and practical applications for ordering and interpreting laboratory tests. Special emphasis on clinical chemistry and hematology, including coagulation and blood banking. Involves certain simple laboratory tests.

604 LABORATORY MEDICINE II (2+0) 2 credits
Theory and practical applications for ordering and interpreting laboratory tests. Special emphasis on clinical chemistry and endocrinology testing, clinical microscopy, and urinalysis. Involves certain simple laboratory tests.

PEDIATRICS (PEDI)

451, 651 CLERKSHIP (1+21) 8 credits
Hospital and ambulatory clinical experience with preceptorial supervision to develop knowledge (practical, theoretical, basic science), technical and interpersonal skills basic to practicing pediatrics.

461, 661 ELECTIVES 2 to 8 credits each
Elective experiences in the major pediatrics subspeciality areas including: (a) adolescent medicine, (b) behavioral pediatrics, (c) neonatal-perinatal medicine, (f) allergy and immunology, (g) cardiology, (h) neonatal medicine, (j) endocrinology, (k) perinatology, (m) pediatric hematology/onocology, (n) PICU/pulmonary, (p) pediatric pulmonology. Prerequisite: third- or fourth-year medical students. Maximum of 8 credits in any one subtopic. Maximum total credits for any combination of subtopics is 16.

490, 690 INDEPENDENT STUDY 1 to 3 credits

491, 691 CARE OF THE HANDICAPPED CHILD (3+25) 2 credits
Participation in the care of children with handicapping conditions for one week in July at Camp Galilee in Glenbrook, Nevada. For any student enrolled in the School of Medicine.

PHARMACOLOGY (PHAR)

401, 601 MEDICAL PHARMACOLOGY I (9+0) 9 credits
Principles, mechanisms of action, therapeutic indications, contra-indications, side-effects and toxic manifestations of pharmacological agents. Prerequisite: B CH 401; PHYS 402 or equivalent.

492, 692 PROBLEMS IN CLINICAL PHARMACOLOGY AND THERAPEUTICS (1+0 per credit) 1 to 4 credits
Discussion and literature search of therapeutic problems in specific case histories; indications and contraindications of drug therapy in relation to basic pharmacologic properties; expected beneficial results, possible side effects, adverse reactions, and drug interactions.

495, 695 SEMINAR (1+0) 1 credit
Presentation on special topics in pharmacology. Maximum of 2 credits.

497, 697 SELECTED TOPICS (1 to 3+0) 1 to 4 credits
Emphasizes current literature of pharmacologic interest. Maximum of 8 credits. Prerequisite: background course in pharmacology.

499, 699 DIRECTED RESEARCH (0+3 per credit) 1 to 4 credits
Guided research in any of the areas of mutual interest to the student and faculty. Maximum of 8 credits.

793 INDEPENDENT STUDY 1 to 6 credits
Prerequisite: major in pharmacology or cell and molecular biology.

PHILOSOPHY (PHIL)

110 INTRODUCTION TO PHILOSOPHY (3+0) 3 credits
Basic problems in different areas of philosophy such as ethics, political theory, metaphysics and epistemology.

112 WORLD RELIGIONS (3+0) 3 credits
Main moral and religious doctrines of Hinduism, Buddhism, Confusianism, Taoism, Islam, Judaism and Christianity.

114 INTRODUCTION TO SYMBOLIC LOGIC (3+0) 3 credits
Principles of correct reasoning, using modern symbolic techniques of the propositional calculus and simple quantification theory.

125 INTRODUCTION TO ETHICAL THEORY (3+0) 3 credits
Representative classical ethical theories, e.g., Aristotle, Hume, Kant, utilitarianism, emotive ethics.

130 INTRODUCTION TO METAPHYSICS (3+0) 3 credits
Selected problems concerning human nature and reality, e.g., the mind-body problem, freedom and determinism, the existence of God, space and time.

200 CRITICAL THINKING AND REASONING (3+0) 3 credits
Nonsymbolic introduction to logical thinking in everyday life, law, politics, science, advertising; common fallacies; the uses of language, including techniques of persuasion.

202 INTRODUCTION TO THE PHILOSOPHY OF THE ARTS (3+0) 3 credits
Topics include aesthetic standards, artistic creativity and the nature of art and its role in society.

203 INTRODUCTION TO EXISTENTIALISM (3+0) 3 credits
Readings from Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger. An examination of the existentialist concepts "being" and "nonbeing," "estrangement," "dread," "anxiety" and "freedom."

207 INTRODUCTION TO SOCIAL AND POLITICAL PHILOSOPHY (3+0) 3 credits
Theories concerning the nature of society and political structure. Readings from classical and contemporary philosophers.

211 ANCIENT PHILOSOPHY (3+0) 3 credits
Major figures in history of philosophy from the pre-Socratics through the early medieval thinkers.

212 MEDIEVAL PHILOSOPHY (3+0) 3 credits
Major figures in philosophy from the early Church fathers to Ockham.

213 MODERN PHILOSOPHY (3+0) 3 credits
Philosophy from the Renaissance through the 18th century. Readings from Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume and Kant.

224 INTRODUCTION TO PHILOSOPHY OF SCIENCE (3+0) 3 credits
Philosophical problems and implications of scientific inquiry, such as the nature of laws, theories, explanations, scientific revolutions, limits of knowledge, space and time.

301-302 IDEAS, VALUES AND CULTURES I AND II (3+0) 3 credits each
Ideas, values and cultures as they relate to concepts of man, society and the cosmos. Includes Western, non-Western and women's primary source material.

308 INTRODUCTION TO FOUNDATIONS OF MATHEMATICS (3+0) 3 credits
(See MATH 308 for description.)

314 19TH CENTURY PHILOSOPHY (3+0) 3 credits
Readings from Hegel, Schopenhauer, Marx, Nietzsche, Bentham, Mill, Bradley and others. Prerequisite: 3 credits in philosophy.

315 20TH CENTURY PHILOSOPHY (3+0) 3 credits
Significant movements in 20th century philosophy such as phenomenology, pragmatism, logical positivism, British analytic philosophy, and the later Wittgenstein and his followers. Prerequisite: 3 credits in philosophy.

316 AMERICAN PHILOSOPHY (3+0) 3 credits
Development of philosophical thought in America with particular emphasis on pragmatism. Prerequisite: 3 credits in philosophy.

323 PHILOSOPHY OF RELIGION (3+0) 3 credits
Nature and validity of religious experience. Topics include various conceptions of the nature of God, His existence, the problems of immortality and evil and the possibility of religious knowledge. Prerequisite: 3 credits in philosophy.

325 PHILOSOPHY OF HISTORY (3+0) 3 credits
Discussion of historical methods, the idea of progress and meaning in history. Prerequisite: 3 credits in philosophy.

326 SYMBOLIC LOGIC (3+0) 3 credits
Developments in modern logic, including characteristics of deductive systems, analysis of propositions and techniques of deduction. Prerequisite: PHIL 114. (Same as MATH 307.)

401, 601 ETHICS (3+0) 3 credits
Detailed discussion of major ethical theories. Prerequisite: 6 credits in philosophy.

402,602 AESTHETICS (3+0) 3 credits
Investigation of modern trends in aesthetics. Prerequisite: 6 credits in philosophy.

403, 603 THEORY OF KNOWLEDGE (3+0) 3 credits
Examination of the nature of knowledge emphasizing the problem of our knowledge of the external world. Prerequisite: 6 credits in philosophy.

404, 604 METAPHYSICS (3+0) 3 credits
Theories concerning the nature of reality. Prerequisite: 6 credits in philosophy.

405 605 PHILOSOPHY OF MIND (3+0) 3 credits
Various theories concerning the relation between mind and body. Other topics may include an analysis of thinking, intending and a discussion of the possibility of private languages, etc. Prerequisite: 6 credits in philosophy.

406, 606 PHILOSOPHY OF LANGUAGE (3+0) 3 credits
Examination of selected problems in the philosophy of language such as meaning, reference, truth and analyticity. Prerequisite: 6 credits in philosophy.

407, 607 SOCIAL AND POLITICAL PHILOSOPHY (3+0) 3 credits
Detailed discussion of theories of society and the nature of political obligation. Prerequisite: 6 credits in philosophy.

410, 610 PLATO (3+0) 3 credits
Development of Plato's thought, focusing upon the dialogues of his middle and late period. Prerequisite: 6 credits in philosophy.

411, 611 ARISTOTLE (3+0) 3 credits
Detailed study of selected major works in Aristotle. Prerequisite: 6 credits in philosophy.

413, 613 BRITISH EMPIRICISTS (3+0) 3 credits
Detailed study of the major writings of Locke, Berkeley and Hume. Prerequisite: 6 credits in philosophy.

414, 614 CONTINENTAL RATIONALISTS (3+0) 3 credits
Detailed study of the major writings of Descartes, Spinoza and Leibniz. Prerequisite: 6 credits in philosophy.

415, 615 KANT (3+0) 3 credits
Intensive study of the *Critique of Pure Reason* and related works. Prerequisite: 6 credits in philosophy.

465, 665 PHILOSOPHY AND METHOD OF THE PHYSICAL SCIENCES (3+0) 3 credits
Interdepartmental course examining the basic presuppositions and procedures in the physical sciences.

480, 680 SCIENCE, TECHNOLOGY AND SOCIETY (3+0) 3 credits
(See HIST 480, 680 for description.)

481, 681 PROBLEMS IN THE HISTORY AND PHILOSOPHY OF SCIENCE (3+0) 3 credits
(See HIST 481, 681 for description.)

494, 694 SELECTED TOPIC IN PHILOSOPHY (3+0) 3 credits
Major topic or issue in philosophy. May be repeated to a maximum of 9 credits when content differs. Prerequisite: 6 credits in philosophy.

499, 699 INDIVIDUAL RESEARCH 1 to 6 credits
Pursuit by the advanced student of special interests in philosophy. Maximum of 12 credits.

708 SEMINAR IN PHILOSOPHICAL PSYCHOLOGY (3+0) 3 credits
(See PSY 708 for description.)

711 SEMINAR IN MAJOR FIGURES IN THE HISTORY OF PHILOSOPHY (3+0) 3 credits
Maximum of 9 credits when content differs.

712 SEMINAR IN MAJOR MOVEMENTS IN THE HISTORY OF PHILOSOPHY (3+0) 3 credits
Maximum of 9 credits when content differs.

713 SEMINAR IN PHILOSOPHICAL PROBLEMS (3+0) 3 credits
Intensive analysis of major topic or issue in philosophy. Maximum of 9 credits when content differs.

737 TEACHING METHODS IN PHILOSOPHY (1+0) 1 credit
Effective procedures of teaching philosophy on the college or university level. Maximum of 4 credits.

793 INDEPENDENT STUDY 1 to 6 credits Maximum of 6 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits
Maximum of 6 credits.

Inactive Courses
321 PHILOSOPHY OF EDUCATION (3+0) 3 credits
794 COLLOQUIA (3+0) 3 credits

PHYSICS (PHYS)

Stated course prerequisites must be observed unless an equivalent preparation is approved by the department.

100 INTRODUCTORY PHYSICS (3+0) 3 credits
Concise treatment of mechanics, electricity, magnetism, heat, light, sound, relativity, and quantum mechanics. Knowledge of basic algebra and geometry is essential.

106 ENVIRONMENTAL SCIENCE (3+0) 3 credits
Introduction for the nonspecialist to the principles which control the behavior of atmosphere and oceans, circulation of atmosphere and oceans; weather and climate; weather prediction and its economic implications; clouds and precipitation; pollution of the atmosphere; application to urban problems.

109 PLANETARY ASTRONOMY (3+0) 3 credits
Descriptive introduction to current concepts of the solar system. Modern observational techniques and their results. Supplementary use of telescopes and planetarium facilities. Elementary algebra is occasionally used.

110 STELLAR ASTRONOMY (3+0) 3 credits
Descriptive introduction to stellar and galactic systems. The life cycle of stars. Theories of the universe and its formation. Supplementary use of telescopes and planetarium facilities. Elementary algebra is occasionally used.

117 METEOROLOGY (3+0) 3 credits
Description of the behavior of the atmosphere with special emphasis on the physical processes involved in the weather.

151-152 GENERAL PHYSICS (3+0) 3 credits each
General physics primarily for students in arts and science, medicine, and agriculture. Lectures, experimental demonstrations and problem work. Prerequisite: elementary algebra, geometry, knowledge of trigonometry.

153-154 GENERAL PHYSICS LABORATORY (0+2) 1 credit each
To accompany PHYS 151-152. Experimental work, largely quantitative in character, designed to illustrate fundamental physical principles and to develop skill and accuracy in methods of physical measurement. Prerequisite: Elementary algebra, geometry, knowledge of trigonometry.

201 PHYSICS FOR SCIENTISTS AND ENGINEERS I (3+0) 3 credits
Discussions of vectors, rectilinear and plane motion, particle dynamics, work and energy, momentum, rotational mechanics, oscillations, gravitation, fluids, elastic waves and sound. Prerequisite: MATH 181 or 182.

202 PHYSICS FOR SCIENTISTS AND ENGINEERS II (3+0) 3 credits
Discussions of electric charge, field, potential, current, dielectrics, circuit elements, magnetic fields and materials, electromagnetic oscillations, light, reflection, optical systems, interference, diffraction, and polarization. Prerequisite: PHYS 201.

203 PHYSICS FOR SCIENTISTS AND ENGINEERS III (3+0) 3 credits
Discussions of thermodynamic laws, kinetic theory, relativity, wave aspects of particles, quantum mechanics, statistical mechanics, band theory, semiconductors, radioactivity, nuclear physics, elementary particles. Prerequisite: PHYS 202; MATH 181, 182.

204 PHYSICS FOR SCIENTISTS AND ENGINEERS LABORATORY I (0+2) 1 credit
Laboratory experiments on vectors, motion, particle, dynamics, work and energy, momentum, rotational mechanics, oscillatory motions, wave motion and sound. Prerequisite: MATH 181 or 182.

205 PHYSICS FOR SCIENTISTS AND ENGINEERS LABORATORY II (0+2) 1 credit
Laboratory experiments on electric charge, field, potential circuit elements, magnetic fields, light, reflection, refraction, interference, diffraction and polarization. Prerequisite: PHYS 201.

206 PHYSICS FOR SCIENTISTS AND ENGINEERS LABORATORY III (0+3) 1 credit
Laboratory experiments on thermodynamic laws, kinetic theory, wave aspects of particles, quantum mechanics, solid state physics, semiconductors, radioactivity, nuclear physics and elementary particles. Prerequisite: PHYS 202; MATH 181, 182.

293 DIRECTED STUDY 1 to 3 credits
Individual study conducted under the direction of a faculty member. Maximum of 6 credits. Prerequisite: PHYS 151 or 201.

351 MECHANICS (3+0) 3 credits
Newtonian mechanics. Mathematical formulation of dynamics of a particle and systems of particles including applications to atomic physics. Prerequisite: general physics and calculus. Differential equations desirable.

352 MECHANICS (3+0) 3 credits
Continuation of PHYS 351. Mechanics of continuous media using Fourier series. Introduction to generalized coordinates including methods of Lagrange and Hamilton. Prerequisite: PHYS 351.

355 PHYSICAL ELECTRONICS (2+3) 3 credits
Physical principles of electronic instrumentation used in physics. Emphasis on modern scientific instrumentation, components, circuits, active elements, systems. Prerequisite: general physics and calculus. Differential equations concurrently.

361-362 LIGHT AND PHYSICAL OPTICS (3+0) 3 credits each
Topics in physical optics including interference, diffraction and polarization, with applications. Nature of light. Survey of geometrical optics and optical instruments. Prerequisite: general physics and calculus.

363-364 OPTICS AND SPECTROSCOPY LABORATORY (0+3) 1 credit each
Basic optical measurements. Theory and use of spectrometers, spectrographs and interferometers. Excitation and recording of emission spectra. Corequisite: PHYS 361-362.

400 ENERGY: PRINCIPLES, SOURCES AND PROBLEMS (3+0) 3 credits
Production and consumption of energy and its effect on society. Prerequisite: MATH 120.

411, 611 INTRODUCTION TO ATMOSPHERIC PHYSICS (3+0) 3 credits
Atmospheric scattering of light; visibility; optical phenomena. Elements of radiative heat transfer and of cloud physics. Description of the upper atmosphere. Prerequisite: PHYS 203 or 152, 154; MATH 281,285.

412, 612 INTRODUCTION TO AIR POLLUTION (3+0) 3 credits
Aerosol and gas phase classification and measurement; regulatory requirements and control technology Application to smog, acid deposition, the ozone layer. Local and long range transport. Prerequisite: PHYS 151,152, 203 or equivalent.

421, 621 MODERN PHYSICS I (3+0) 3 credits
Introduction to relativity and quantum mechanics. Prerequisite: PHYS 203 or equivalent, differential equations. Advanced calculus desirable.

422, 622 MODERN PHYSICS II (3+0) 3 credits
Applications of relativity and quantum mechanics to atomic and nuclear structure. Prerequisite: PHYS 421.

423, 623 ADVANCED LABORATORY TECHNIQUES I (0+3) 1 credit
Application of contemporary devices for the acquisition and interpretation of data obtaind from physical systems encountered in atomic, nuclear, solid state and particle physics. Prerequisite: PHYS 203, 206.

424, 624 ADVANCED LABORATORY TECHNIQUES II (0+3) 1 credit
Continuation of PHYS 423, 623. Prerequisite: PHYS 203, 206.

425, 625 THERMAL PHYSICS (3+0) 3 credits
Statistical basis of thermodynamics. Applications to fundamental processes; entropy, distribution functions, classical and quantum gases, phase transformations, low temperature phenomena. Prerequisite: MATH 281; PHYS 203.

466, 666 INTRODUCTION TO MICROCOMPUTER INTERFACING (2+3) 3 credits
Introductory theory combined with laboratory work involving digital electronics, microcomputer programming, analog to digital conversion and data acquisition with microcomputers. Prerequisite: PHYS 355.

473-474, 673-674 ELECTRICITY AND MAGNETISM (3+0) 3 credits each
Electrostatics, magnetic fields, and electromagnetism. Maxwell's equations, theory of metallic conduction, motion of charged particles, radiation. Prerequisite: general physics, differential equations.

483-484, 683-684 SPECIAL TOPICS IN PHYSICS (1 to 3+0) 1 to 3 credits each
Topics of current interest which are not incorporated in regular offerings. Prerequisite: PHYS 201, 202 or 203.

493, 693 SPECIAL PROBLEMS 1 to 3 credits each
Laboratory or research work not specifically given in courses listed above. Maximum of 6 credits.

497 SENIOR THESIS (3+0) 3 credits
Cross-disciplinary capstone course for majors integrating physics subdisciplines, other sciences, mathematics and English in a theoretical or experimental directed research problem, submitted in written form. Prerequisite: three years of college physics.

701 MATHEMATICAL PHYSICS (3+0) 3 credits
Designed to acquaint the student with some of the specific mathematical preliminaries to advanced study of theoretical physics. Prerequisite: graduate standing in physics.

702 CLASSICAL MECHANICS (3+0) 3 credits
Newtonian mechanics from an advanced point of view. Variational principles, Lagrange's and Hamilton's equations, central forces, rigid body motion, canonical transformations, Hamilton-Jacobi theory, small oscillations. Prerequisite: graduate standing in physics, PHYS 701.

704 COMPUTATIONAL TECHNIQUES IN PHYSICAL SCIENCE (3+0) 3 credits
Quantitative solutions of selected problems in classical, modern and atmospheric physics to develop skills in problem formulation, computer application and graphical output. Prerequisite: Fortran programming skill.

706 COMPUTING AND STATISTICAL SIMULATION (2+0) 2 c
Computer simulation of random processes obeying specified prob distributions and time series frequency and relationships; theoretic vations, coding structure and correct use of the computer. Prerec Acquaintance with computers and Fortran coding skill.

707 SOLID STATE PHYSICS (3+0) 3 credits
Solid state properties related to the crystal lattice and the beha electrons in the lattice: band structure, electrontransport, phonons, diffraction, magnetism. Prerequisite: undergraduate solid state ph

708 NUCLEAR PHYSICS (3+0) 3 credits
Nuclear properties including forces, moments and decay modes. Scal reactions and nuclear models. Prerequisite: graduate standing in phys

712 ELECTROMAGNETIC THEORY (3+0) 3 credits
Relativistic formulation of electrodynamics. Motion of charges in e magnetic fields. Radiation theory, cavities, wave guides. Wave scat diffraction, refraction, and dispersion. Multipole fields. Prerequisite: 701, 702.

721 QUANTUM THEORY I (3+0) 3 credits
Development of quantum theory. Schroedinger equation, operato pectation values. Matrix formalism of Heisenberg, eigenvalue pro wave packets, conjugate variables and uncertainty principle. Solu wave equation for square potentials, harmonic oscillator and hyd like atoms. Prerequisite: graduate standing in physics.

722 QUANTUM THEORY II (3+0) 3 credits
Perturbation theory, both time-independent and time-dependent I eracy, interaction of matter with radiation, selection rules. Scattering Born approximation and other approximation methods. Dirac notati an introduction to spin. Prerequisite: PHYS 721.

725 LASER PHYSICS (3+0) 3 credits
Laser operation, pumping mechanisms, resonators, optical coh photon statistics, non-linear optics, laser applications. Prerequisite: 721, 722 or equivalent.

732 STATISTICAL MECHANICS (3+0) 3 credits
Ensembles, fluctuations and statistical basis of laws of thermodyn Distribution functions with application to cooperative phenomena, tion functions and quantum statistics. Prerequisite: graduate stand physics.

740 FLUID DYNAMICS (3+0) 3 credits
Navier-Stokes equations; viscous and inviscid fluids; vorticity; bou layer theory. Theoretical and numerical techniques; application to pressible flow in the atmosphere. Prerequisite or corequisite: PHYS

741 ATMOSPHERIC MOTIONS I (3+0) 3 credits
General circulation, meteorological analysis, hurricane, tropical an tropical cyclones. Prerequisite or corequisite: PHYS 701, 740.

742 ATMOSPHERIC MOTIONS II (3+0) 3 credits
Principles of fluid dynamics applied to the atmosphere. Analysis of spheric models used in numerical computations for several sc motion. Prerequisite: PHYS 741.

743 CLOUD AND AEROSOL PHYSICS (3+0) 3 credits
Aerosol nucleation, growth and coagulation, cloud droplet and ice nucleation and growth; cloud thermodynamics and chemistry; pre tion and electrification processes; measurement and modeling tech Prerequisite: PHYS 701.

745 ATMOSPHERIC TURBULENCE (3+0) 3 credits
Mechanical and statistical theory of turbulence. Application to conv eddy diffusion, temperature, and wind profiles and related topics. uisite: PHYS 742.

748 MEASUREMENT IN THE ATMOSPHERE (3+3) 4 credits
Measurement of physically meaningful parameters in a heterog turbulent medium. Direct and remote sensing, data reduction, the instrument design. Prerequisite: an upper-division electronics course 355 or equivalent) and a working knowledge of computer program Prerequisite or corequisite: PHYS 742, 743.

749 PHYSICAL METEOROLOGY (3+0) 3 credits
Introduction to radiative computations and diagrams as related to the atmosphere. Interaction of electromagnetic radiation with atmospheric particulates and molecules. Prerequisite: graduate standing in physics.

750 WEATHER MODIFICATION (3+0) 3 credits
Physics of precipitation growth and mechanisms of modification of fogs, orographic and cumulus clouds. Aerosol production, chemical composition, delivery and dispersion. Evaluation techniques. Prerequisite: PHYS 743.

761 ATOMIC AND MOLECULAR PHYSICS (3+0) 3 credits
Spectra of isolated atoms and atoms in external fields. Coupling of angular momenta. Symmetries and spectra of simple molecules. Atomic interaction with electrons and photons. Prerequisite: PHYS 721, 722.

762 PHYSICS OF FUNDAMENTAL INTERACTIONS (3+0) 3 credits
Elementary particles, symmetries, and conservation laws. Strong and weak interactions, Applications to nuclear level structure. Prerequisite: PHYS 761. Recommended: PHYS 712.

771 ADVANCED TOPICS (1 to 3+0) 1 to 3 credits
Consists of lectures dealing with various aspects of one of the fields listed. (a) dynamics, (b) fluid mechanics, (c) plasma physics, (d) quantum theory, (e) nuclear physics, (f) atomic and molecular physics, (g) electron and ion physics, (h) low-temperature physics, (j) solid and/or liquid state, (k) cosmic rays, (m) relativity, (n) elementary particles, (p) astrophysics, (r) atmospheric physics, (s) geophysics, (t) meteorology of wind and solar energy, (u) air pollution, (v) remote sensing of the atmosphere, (w) cloud electrification, (x) atmospheric aerosol technology. Maximum of 12 credits in different fields. Prerequisite: PHYS 701-702 or 712 or 721-722 or 704, 740.

790 SEMINAR (1+0) 1 credit
Recent developments in theoretical and experimental physics. Maximum of 6 credits.

792 SPECIAL PROBLEMS 1 to 6 credits
Special study of advanced topics not specifically in courses or seminars. Maximum of 6 credits. Prerequisite: graduate standing in physics.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
108 INTRODUCTION TO SPACE SCIENCE (3+0) 3 credits
311 ENVIRONMENTAL PHYSICS: THE OCEANS AND ATMOSPHERE (3+0) 3 credits
391 INTRODUCTION TO ASTROPHYSICS (3+0) 3 credits
451-452, 651-652 ACOUSTICS (2+0) 2 credits each
465, 665 PHILOSOPHY AND METHOD OF THE PHYSICAL SCIENCES (3+0) 3 credits
711 ELECTROMAGNETIC THEORY I (3+0) 3 credits
744 UPPER ATMOSPHERE (3+0) 3 credits

PHYSIOLOGY (PHSY)

426, 626 BIOMEDICAL INSTRUMENTATION (2+2) 3 credits
Principles of modern electronic design including microcomputer applications, transducer technology, digital design, interface design, biomedical information systems. (Same as E E 426, 626.)

490, 690 INDEPENDENT STUDY 1 to 4 credits

499, 699 DIRECTED RESEARCH 1 to 4 credits
Guided research in any of the areas of mutual interest to the student and faculty. Maximum of 8 credits.

601 MEDICAL PHYSIOLOGY I (4+3) 5 credits
Principles of axonology, muscle physiology, synaptology, autonomic nervous function, and cardiovascular physiology. Prerequisite: B CH 601; ANAT 601.

602 MEDICAL PHYSIOLOGY II (5+3) 6 credits
Principles of pulmonary, renal, gastrointestinal, neural, and endocrine function. Prerequisite: PHSY 601.

701 ADVANCED MAMMALIAN SYSTEMS AND ORGANS PHYSIOLOGY I (4+3) 5 credits
Principles of axonology, muscle physiology, synaptology, autonomic nervous function, and cardiovascular physiology. Prerequisite: MATH 181 or equivalent.

702 ADVANCED MAMMALIAN SYSTEMS AND ORGANS PHYSIOLOGY II (5+3) 6 credits
Principles of pulmonary, renal, gastrointestinal, neural and endocrine function. Prerequisite: PHSY 701.

793 INDEPENDENT STUDY 1 to 6 credits

POLITICAL SCIENCE (P SC)

P SC 101 or 103 is a prerequisite for all other political science courses except P SC 100.

100 CONSTITUTION OF NEVADA (1+0) 1 credit
Nevada Constitution, including the historical development of Nevada from territory to statehood. Satisfies Nevada Constitution requirement. Not open to students who have obtained credit for P SC 103, 308, or HIST 102, 111, 217. (Offered through correspondence division only.)

101 AMERICAN POLITICS: PROCESS AND BEHAVIOR (3+0) 3 credits
American government and the discipline of political science; surveys participation, pursuit and use of power, and contemporary political issues. Satisfies the U.S. Constitution requirement. Credit not allowed in both P SC 101, 103.

103 PRINCIPLES OF AMERICAN CONSTITUTIONAL GOVERNMENT (3+0) 3 credits
Constitutions of the U.S. and Nevada with additional attention to various principles and current problems of government. Satisfies U.S. and Nevada Constitution requirements. Credit not allowed in both P SC 101, 103.

104 GREAT ISSUES OF POLITICS (3+0) 3 credits
Selected writings in political thought with special attention to issues such as equality, justice, and authority.

210 AMERICAN PUBLIC POLICY (3+0) 3 credits
Analysis of the interplay of forces involved in policy-making at all levels of American government. The impact of policy on individuals and institutions.

211 COMPARATIVE GOVERNMENT AND POLITICS (3+0) 3 credits
Analysis of similarities and differences in the governing processes of different societies .

231 WORLD POLITICS (3+0) 3 credits
International relations stressing the principles of a systematic approach to world politics.

300 CONGRESSIONAL INTERNSHIP (6+0) 6 credits *S/U only*
Selected students serve in senator's or congressman's office in Washington. Prerequisite: 9 political science credits, including P SC 304 or examination.

301 LEGISLATIVE INTERNSHIP 3 or 6 credits *S/U only*
Lecture plus field research on scientific methods in behavior and mental processes. Prerequisite: PSY 101, 210.

304 THE LEGISLATIVE PROCESS (3+0) 3 credits
Analysis of legislative process in the political process—nation, state and community. Emphasis on legislative behavior and legislative decision-making.

305 THE AMERICAN PRESIDENCY (3+0) 3 credits
Constitutional position of the President and development of the presidential powers; recruitment and party leadership; functional requirements of executive leadership; presidential participation in legislation and adjudication.

308 AMERICAN STATE AND LOCAL GOVERNMENTS (3+0) 3 credits
Organization, working principles, and functional processes of state and local governments in the United States. (Satisfies the legislative requirements for the Nevada Constitution.)

309 THE JUDICIAL PROCESS (3+0) 3 credits
Administration of justice in American courts, emphasizing the nature and function of law, court organization, participants in the system, trial processes, impact of court rulings.

320 POLICY ANALYSIS (3+0) 3 credits
Survey of analytic techniques and processes used for assessing the impact of public policies.

323-324 HISTORY OF POLITICAL THOUGHT (3+0) 3 credits each
Analytical and critical survey of political theories from the classical period to the present.

336 MANAGING INTERNATIONAL INTERDEPENDENCE (3+0) 3 credit
Strategies and institutions for managing problems and opportunities of global and regional interdependency: United Nations system, international economic institutions; European community; North American integration. Prerequisite: EC 458 or P SC 231.

341 ELEMENTS OF PUBLIC ADMINISTRATION (3+0) 3 credits
Introduction to administrative theory, politics and responsibilities; bureaucracy; and public financial and personnel administration.

353 ETHNIC POLITICS IN THE UNITED STATES (3+0) 3 credits
Changing roles and special problems of ethnic groups in American politics and in comparative perspective with emphasis on the American Indian, Mexican-American and Afro-American communities. Maximum of 6 credits.

354 POLITICS AND WOMEN (3+0) 3 credits
Women's political movements, differential political socialization processes, and the economic and legal status of women.

400, 600 THE SUPREME COURT AND PUBLIC POLICY (3+0) 3 credits
Major decisions of recent terms of the Supreme Court; their impact upon federal-state relations, the executive and legislative branches and contemporary social issues. (Satisfies the legislative requirement for the U.S. Constitution.)

406, 606 URBAN POLITICS (3+0) 3 credits
Analysis of policy alternatives and governmental systems in urban areas. The role of officials, planners, interest groups and citizens in influencing the direction of policy.

407, 607 AMERICAN POLITICAL PARTIES AND ELECTORAL BEHAVIOR (3+0) 3 credits
Analysis of the nature, structure and functions of American political parties and electoral participation. Special emphasis on theories of elections, voting habits and patterns and campaigns in American politics.

409, 609 CONSTITUTIONAL LAW (3+0) 3 credits
Role of the Supreme Court in the political system, emphasizing constitutional development and judicial analysis of social and political issues; includes a study of administrative law. (Satisfies the legislative requirement for the U.S. Constitution.)

410, 610 POLITICAL TERRORISM AND VIOLENT POLITICAL MOVEMENTS (3+0) 3 credits
Groups and movements that use terrorism, guerrilla warfare and other violent techniques to challenge political regimes; causes and consequences of political violence within nations. Prerequisite: P SC 211 or 231.

411, 611 GOVERNMENT AND POLITICS IN WESTERN EUROPE (3+0) 3 credits
Political systems of the major Western European states and the social situations from which they have arisen.

414, 614 GOVERNMENT AND POLITICS IN EAST ASIA (3+0) 3 credits
Political evolution of Japan, Taiwan, South Korea; their histories, political cultures, institutions; democratization; the role of the state in economic development

415, 615 GOVERNMENT AND POLITICS IN LATIN AMERICA (3+0) 3 credits
Comparison of the structure and dynamics of Latin American politics and government.

416, 616 GOVERNMENT AND POLITICS IN THE SOVIET UNIO AND EASTERN EUROPE (3+0) 3 credits
States compared as to political culture, structures, forces, control and o problems.

417, 617 GOVERNMENT AND POLITICS IN CHINA (3+0) 3 credit
Contemporary China as a Communist nation; its ideology, history, poli planned economy; causes, nature, evolution and reform of a Communist s

418, 618 PROBLEMS IN DEVELOPED POLITICAL SYSTEMS (3+0) 3 credits
Aspects of political life common to such areas as Europe and N America. Maximum of 6 credits.

420, 620 JURISPRUDENCE (3+0) 3 credits
Problems of legal theory from the analytical, philosophical and sociolog points of view. Particular attention to modern theories of law. (Sam C J 420, 620.)

421, 621 POLITICAL ECONOMY (3+0) 3 credits
Examination of governmental policies as they are influenced by polit theories and economic doctrines.

423, 623 CONTEMPORARY POLITICAL THEORY (3+0) 3 credits
Recent developments in political theory such as communitarianism, fe nism, reinterpretations of liberalism.

426, 626 AMERICAN POLITICAL THOUGHT (3+0) 3 credits
American political thought from the colonial period to the present, incl ing, among others, Puritanism, Republicanism, Jacksonian Democr Transcendentalism, Pragmatism and Social Darwinism.

430, 630 INTERNATIONAL LAW (3+0) 3 credits
Contemporary significance; sources in custom and treaties; historical velopment in various areas of international relations.

431, 631 HOLOCAUST AND GENOCIDE (3+0) 3 credits
Antisemitism, Nazism, and the effort to eliminate European Jev multicultural and multicisciplinary contexts. Prerequisite: W T 202.

432, 632 AMERICAN FOREIGN POLICY (3+0) 3 credits
Environmental influences on U.S. policy; post-World War II proble interests, principles, objectives, policies and commitments of current pol Prerequisite: P SC 231.

433, 633 CONDUCT OF AMERICAN FOREIGN AFFAIRS (3+0) 3 cre Organization and administrative machinery involved in the conduc American foreign affairs. Prerequisite: P SC 231.

434, 634 SOVIET FOREIGN POLICY (3+0) 3 credits
International role of the Soviet Union in comparative perspective, emp sizing defense policies; links with other Communist parties and sta decision-making in crises. Prerequisite: P SC 231.

435, 635 INTERNATIONAL POLITICAL ECONOMY: NORTH-SOU RELATIONS (3+0) 3 credits
Theories of Third World development emphasizing the role of the st selected political-economic issues of concern for the Third World. Pre uisite: P SC 231 or 336.

436, 636 INTERNATIONAL HUMAN RIGHTS (3+0) 3 credits
Violation and protection of human rights in international law and poli major issues since 1945 in various countries and regions. Prerequisite: 202, 203.

437, 637 INTERNATIONAL CONFLICT (3+0) 3 credits
Classical and contemporary literature on the causes of war among nati and the conditions of international peace. Prerequisite: P SC 231.

438, 638 THE MIDDLE EAST IN WORLD AFFAIRS (3+0) 3 credits
Political life in the Middle East with particular emphasis on the Arab-Isr conflict, the politics of oil and problems of development and instabil Prerequisite: P SC 211 or 231.

439, 639 PROBLEMS OF WORLD POLITICS (3+0) 3 credits
Analysis of selected contemporary problems of world politics. Prere site: P SC 231. Maximum of 6 credits.

441, 641 PUBLIC FINANCIAL ADMINISTRATION (3+0) 3 credits
Analysis of current practices of budget implementation with emphasis on control systems, debt and cash management, and specific behaviors of budget officials. Prerequisite: P SC 341.

442, 642 PUBLIC PERSONNEL ADMINISTRATION (3+0) 3 credits
Methods of recruiting, examining, training and other techniques utilized in the management of employees in government service.

443, 643 THE POLITICS OF ADMINISTRATION (3+0) 3 credits
Process of translating legislative and executive decision into administrative action; effect of structure upon policy; manipulating and following public opinion; formal and informal decision-making.

444, 644 COMPARATIVE PUBLIC ADMINISTRATION (3+0) 3 credits
Examination of basic administrative concepts in different cultural settings, in both technologically advanced countries and the developing nations.

445, 645 THEORIES OF PUBLIC ADMINISTRATION (3+0) 3 credits
Development and application of theories of public administration, especially their relevance to complex organizations, decision-making, group behavior and politics.

446, 646 ADMINISTRATIVE LAW (3+0) 3 credits
Legal setting of public administrative, adjudicative and rule-making authority. Remedies for abuse of administrative authority. Prerequisite: P SC 341.

447, 647 INTERGOVERNMENTAL RELATIONS (3+0) 3 credits
Analysis of the interactions between federal, state and local governments. Theoretical foundations of federalism, issues of public policy and administration.

450, 650 PUBLIC SERVICE INTERNSHIP 1 to 6 credits
Students serve in federal, state or local government offices or in nongovernmental public service organizations. Prerequisite: P SC 341 recommended. *S/U only for 450; regular grading for 650.*

451, 651 PUBLIC OPINION AND POLITICAL PSYCHOLOGY (3+0) 3 credits
Analysis of the psychological aspects of politics in relation to public opinion, propaganda, personality and political socialization.

452, 652 CITIZEN PARTICIPATION, PRESSURE GROUPS AND POLITICAL MOVEMENTS (3+0) 3 credits
Examination of non-violent ways citizens directly and indirectly influence government beyond voting; interest group activity, protest behavior and direct involvement in government. Prerequisite: P SC 210.

453, 653 ENVIRONMENTAL LAW (3+0) 3 credits
(See C E 411, 611 for description.)

455, 655 ENERGY AND RESOURCE POLICY (3+0) 3 credits
Politics shaping American energy and resource policies examined within international, federal and partisan contexts. Special attention given to Western regional and public lands controversies. Prerequisite: P SC 210.

456, 656 PROBLEMS IN AMERICAN PUBLIC POLICY (3+0) 3 credits
Analysis of selected contemporary problems in American public policy. Maximum of 6 credits.

457, 657 ENVIRONMENTAL POLICY (3+0) 3 credits
Evaluation of policies in environmental areas. (Same as ENV 457.)

458, 658 LAND AND WATER RESOURCE POLICY (3+0) 3 credits
Issues surrounding the allocation and use of land and water resources in the United States. Emphasis on issues affecting Western states.

459, 659 GLOBAL ENVIRONMENTAL POLICY (3+0) 3 credits
Analysis of such transitional ecological problems as ozone depletion and global warming; emphasizes diplomacy, regimes and political processes. Prerequisite: P SC 210 or 231.

460 POLITICS AND LITERATURE IN THE 20TH CENTURY (3+0) 3 credits
Literature as political expreslsion in Western and non-Western contexts. Prerequisite: W T 203.

497, 697 INDEPENDENT STUDY 1 to 3 credits
Maximum of 6 credits.

701 SEMINAR IN AMERICAN POLITICS (3+0) 3 credits
Exploration of selected approaches to American politics. Emphasis on analysis of problems. Maximum of 9 credits.

711 SEMINAR IN COMPARATIVE POLITICS (3+0) 3 credits
Maximum of 9 credits.

723 SEMINAR IN POLITICAL THEORY (3+0) 3 credits
Maximum of 9 credits.

731 SEMINAR IN INTERNATIONAL RELATIONS (3+0) 3 credits
Maximum of 9 credits.

732 SEMINAR IN INTERNATIONAL POLITICAL ECONOMY (3+0) 3 credits
Liberal, realist, socialist and rational choice perspectives; legal and institutional mechanisms for cooperation and conflict resolution.

733 SEMINAR IN INTERNATIONAL SECURITY (3+0) 3 credits
Political and military issues relating to national and global security, war and peace.

741 SEMINAR IN PUBLIC ADMINISTRATION (3+0) 3 credits
Examination of the conceptual foundations of public administration.

742 TOPICS IN PUBLIC ADMINISTRATION (3+0) 3 credits
Analysis of selected aspects of public administration. Maximum of 9 credits.

744 GOVERNMENT BUDGETING (3+0) 3 credits
Examination of the process and theories of budget formulation.

750 SEMINAR IN PUBLIC POLICY (3+0) 3 credits
Examination of underlying theories of policy development and the politics of the policy process.

754 POLICY ADMINISTRATION AND IMPLEMENTATION (3+0) 3 credits
Concepts, methods and issues of administration and oversight of public policies.

755 PROGRAM DESIGN AND EVALUATION (3+0) 3 credits
Concepts, problems, issues and techniques involved with formulating and assessing governmental programs. Prerequisite: P SC 782.

780 RESEARCH IN POLITICAL SCIENCE (2+2) 3 credits
Concepts and methods of political science research: includes legal research, information retrieval, interviews and surveys and development of quantitative data. Prerequisite: PSY 210 or SOC 210 or equivalent.

781 POLITICAL SCIENCE AS A DISCIPLINE (3+0) 3 credits
Examination of conceptual foundations of political science.

782 ADVANCED RESEARCH METHODS IN POLITICAL SCIENCE (2+2) 3 credits
Techniques and methodologies currently employed in political science, including statistical measures, survey research and the relating of research to theory. Prerequisite: PSY 210 or SOC 210 or equivalent.

785 LEADERSHIP IN PUBLIC ORGANIZATIONS (3+0) 3 credits
Theories of leadership and their application to public management and the political process. Prerequisite: P SC 642, 741, 750, 780.

791 SPECIAL TOPICS 1 to 3 credits Maximum of 6 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 1 to 3 credits *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
401-402 POLITICAL SCIENCE SYMPOSIUM (3+0) 3 credits each
412 612 GOVERNMENT AND POLITICS IN AFRICA (3+0) 3 credits
419 619 PROBLEMS OF DEVELOPING POLITICAL SYSTEMS (3+0) 3 credits

PSYCHIATRY AND BEHAVIORAL SCIENCES (PCHY)

402, 602 HUMAN BEHAVIOR II (4+0) 4 credits
Substance abuse, human sexuality, and basic principles of psychopathology and psychotherapy as applied to behavioral problems in medicine.

451, 651 CLERKSHIP (1+21) 8 credits
Hospital and ambulatory clinical experience with preceptorial supervision to develop knowledge (practical, theoretical, basic science), technical and interpersonal skills basic to practicing psychiatry.

461, 661 ELECTIVES 2 to 8 credits each
Elective experiences in the major subspeciality areas of psychiatry and behavioral sciences including: (a) addictive disorders, (b) drug and alcohol abuse, (c) medical hypnosis, (f) sports medicine, (g) marital therapy, (h) clinical research in psychiatry and medicine. Prerequisite: third- or fourth-year medical students. Maximum of 8 credits in any one subtopic. Maximum total credits for any combination of subtopics is 16.

468, 668 INDIVIDUAL STUDY IN BEHAVIORAL SCIENCE 1 to 3 credits
Library research in selected topics in behavioral science and discussions with faculty. Maximum of 6 credits.

469, 669 DIRECTED RESEARCH IN BEHAVIORAL SCIENCE 1 to 3 credits
Guided research in any area of mutual interest to the student and faculty. Maximum of 6 credits.

490, 690 INDEPENDENT STUDY 1 to 4 credits

601 HUMAN BEHAVIOR I (3+0) 3 credits
Human development, stress, communication and interpersonal and family dynamics as applied to behavioral problems in medicine.

660 INTRODUCTION TO CLINICAL MEDICINE (2+3) 3 credits
Interpersonal skills necessary to establish and maintain constructive student-physician-patient relationships, principles and skills of medical interviewing and history taking, personal responsibility toward the patient and their family, professional treatment of patient information.

PSYCHOLOGY (PSY)

101 INTRODUCTION TO PSYCHOLOGY AS A SOCIAL SCIENCE (3+0) 3 credits
Presents psychology as a science concerned with the actions of organisms in a social and cultural context.

102 PSYCHOLOGY OF PERSONAL AND SOCIAL ADJUSTMENT (3+0) 3 credits
Deals with personality adjustment in normal persons. Adjustment techniques and reactions to frustration and conflict in the context of various social groups are considered. Prerequisite: PSY 101.

103 INTRODUCTION TO PSYCHOLOGY AS A NATURAL SCIENCE (2+2) 3 credits
Measurement of actions of individual biological organisms acting in and upon an environment.

205 ELEMENTARY ANALYSIS OF BEHAVIOR (2+2) 3 credits
Survey of principles of reinforcement theory in the analysis of behavior. Principles of learning demonstrated in the laboratory. Prerequisite: PSY 101.

210 STATISTICAL METHODS (3+2) 4 credits
Practice with statistical methods especially useful in the presentation and interpretation of psychological, sociological and educational data, including elementary computer programming. Prerequisite: PSY 101 or SOC 101; a standard score of 18 or better in the mathematics portion of the ACT or a grade of C or better in MATH 101. (Same as SOC 210.)

232 INFANCY (3+0) 3 credits
Psychological aspects of development in infancy (ages 0-2). Examination of biological, behavioral, social, cognitive, affective and cultural factors. Theory and research in infant development. Prerequisite: PSY 101.

233 CHILD PSYCHOLOGY (3+0) 3 credits
Psychological aspects in the development of children through preadolesce Examination of behavioral, social, cognitive, affective and cultural fact Theory and research on developmental stages. Prerequisite: PSY 101.

234 PSYCHOLOGY OF ADOLESCENCE (3+0) 3 credits
Psychological and social psychological growth and development dur adolescence in contemporary Western society. Covers puberty to ea adulthood. Prerequisite: PSY 101.

261 SOCIAL PSYCHOLOGY I: THE PERSON AND SOCIAL INFLUENCE (3+0) 3 credits
Nature of the person and of interpersonal relationships, their format and maintenance and their institutional, ideological and societal conte empirical examination of beliefs, attitudes, influence. Prerequisite: PSY or SOC 101. (Same as SOC 261.)

275 UNDERGRADUATE RESEARCH (1 to 3+0) 3 credits
Independent or collaborative empirical research. Maximum of 6 cred Prerequisite: PSY 101.

299 SPECIAL TOPICS (1 to 5+0) 1 to 5 credits
Suitable topic under the supervision of a staff member. Maximum o credits. Prerequisite: PSY 101.

301 EXPERIMENTAL PSYCHOLOGY (3+6) 5 credits
Lecture, plus field research on scientific methods in behavior and men processes. Prerequisite: PSY 101, 210.

321 EDUCATIONAL PSYCHOLOGY (3+0) 3 credits
Educational applications of psychology to learning, discipline, and soci emotional and intellectual behavior. Educational and psychological te and measurements. Prerequisite: PSY 101.

333 ENVIRONMENTAL PSYCHOLOGY (3+0) 3 credits
Investigation of human environment interactions: perception of and b havior in environment, both natural and built and including the city a special habitat. Prerequisite: PSY 101.

362 SOCIAL PSYCHOLOGY II: GROUP STRUCTURE AND PROCES (3+0) 3 credits
(See SOC 362 for description.)

375 UNDERGRADUATE RESEARCH (1 to 3+0) 1 to 3 credits
Independent or collaborative empirical research. Maximum of 6 credit Prerequisite: PSY 101.

391 INDUSTRIAL AND PERSONNEL PSYCHOLOGY (3+0) 3 credits
Application of psychological principles to personnel problems of gover ment, business and industry. Topics include selection, management an supervision, morale and productivity. Prerequisite: PSY 101.

392 RESEARCH METHODS (3+0) 3 credits
(See SOC 392 for description.)

403, 603 PHYSIOLOGICAL PSYCHOLOGY (2+2) 3 credits
Physiological mechanisms associated with reflex action, emotions, moto skills, thinking and language. Effects of drugs, internal secretions an neural lesions on behavior. Prerequisite: PSY 101.

405, 605 PERCEPTION (3+0) 3 credits
Basic principles by which man perceives his environment. Topics can includ the perception of form, color, space and depth. Prerequisite: PSY 101.

406, 606 APPLIED BEHAVIOR ANALYSIS (3+0) 3 credits
Application of behavioral principles and techniques in the home, school hospital and institution. Emphasis on motivational and learning proce dures for use with problem behaviors in children and adults. Prerequisite PSY 101 or 203-204 .

408, 608 HISTORY OF PSYCHOLOGY (3+0) 3 credits
Historical background of psychology from the Greek period to the present Development of psychology as a science and advances during this century Prerequisite: PSY 101.

410, 610 PHILOSOPHICAL CRITICISMS OF PSYCHOLOGICAL RESEARCH (3+0) 3 credits
Review of criticisms of psychological research by philosophers in the tradition of ordinary language analysis. Prerequisite: PSY 101.

411, 611 THINKING AND PROBLEM SOLVING (3+0) 3 credits
Experimental and applied concepts. Thinking and hypothesis testing, schema, and information processing. Examples from both traditional areas of experimental psychology and related areas in cognitive psychology.

412, 612 INTRODUCTION TO PSYCHOLOGICAL ASSESSMENT (3+0) 3 credits
Theoretical and psychometric bases of psychological assessment. Survey of standard test, interview and observational techniques for evaluating behavioral cognitive and personality characteristics of individuals. Prerequisite: PSY 101.

413 ANIMAL INTELLIGENCE (3+0) 3 credits
Recent experimental studies of topics such as tool use and tool making, mirror image recognition, imitation, problem solving, concept formation, and communication. Prerequisite: ANTH 101, BIOL 191 or PSY 101.

421, 621 CONDITIONING AND LEARNING (3+0) 3 credits
Factors and conditions which enhance or retard learning. Survey of learning theories and basic principles of classical conditioning, instrumental conditioning and discrimination learning. Prerequisite: PSY 101.

422, 622 SOCIAL PSYCHOLOGICAL THEORIES (3+0) 3 credits
(See SOC 422 for description.)

427, 627 COMPUTER APPLICATIONS IN SOCIAL AND BEHAVIORAL SCIENCES (3+0) 3 credits
(See SOC 427, 627 for description.)

423, 623 LANGUAGE DEVELOPMENT (3+0) 3 credits
Cognitive, motivational and social aspects of first language emergence are examined with emphasis on first six years. Prerequisite: PSY 233 or equivalent.

431, 631 COGNITIVE PSYCHOLOGY (3+0) 3 credits
Current developments in cognitive psychology with major emphasis on research in human learning, memory, information processing, problem solving, concept formation and thinking. Prerequisite: PSY 101.

433, 633 PSYCHOLOGICAL ASPECTS OF RACIAL DIFFERENCES (3+0) 3 credits
Multicultural view of existence in the U.S. from the perspective of ethnic minorities. Psychological implications and consequences of racial identity, socio-cultural factors and racism. Prerequisite: PSY 101.

435, 635 PERSONALITY (3+0) 3 credits
Survey of major theories of personality. Personality development, structure and dynamics. Examination of major areas of research on personality. Prerequisite: PSY 101.

440 FIELD EXPERIENCE IN BEHAVIOR ANALYSIS (0+3 per credit) 1 to 3 credits
Supervised experience in the application of behavioral principles and methods to behavior change. Maximum 6 credits.

441, 641 ABNORMAL PSYCHOLOGY (3+0) 3 credits
Psychology of abnormal behavior—primarily neuroses and psychoses—stressing symptomatology, etiology, dynamics and problems in diagnosis. Prerequisite: PSY 101. PSY 641 not open to psychology majors.

444, 644 PSYCHOLOGY OF EXCEPTIONAL CHILDREN (3+0) 3 credits
Devoted to the study of children who are mentally deficient or mentally superior and children with sensory deficiencies or orthopedic handicaps. Prerequisite: PSY 101.

446, 646 PSYCHOLOGICAL ASPECTS OF AGING (3+0) 3 credits
Introduction to theories and research on the aging process. Practical applications.

447, 647 GEROPSYCHOLOGY FIELD EXPERIENCE (0+9) 3 credits
Supervised experience in community agencies with a focus on psychological approaches to working with older people. Prerequisite: PSY 446, 646. Maximum of 6 credits.

448, 648 GEROPSYCHOLOGY: INDEPENDENT STUDY 1 to 3 credits
Directed research projects. Maximum of 6 credits. Prerequisite: PSY 446, 646.

451, 651 BASIC PRINCIPLES OF PSYCHOTHERAPY (3+0) 3 credits
Basic psychological principles and theoretical approaches of individual psychotherapy. Prerequisite: PSY 101.

463, 663 SOCIAL PSYCHOLOGY III: SOCIAL PSYCHOLOGY OF EDUCATION (3+0) 3 credits
Effects on learning of such social psychological factors as family, social class, school social structure, classroom structure and allocation of the teacher role are considered. Prerequisite: PSY 101 or SOC 101, PSY 261 or SOC 261 or PSY 362 or SOC 362. PSY 663 not open to psychology majors. (Same as SOC 463.)

472, 672 EXPERIMENTAL ANALYSIS OF BEHAVIOR (3+0) 3 credits
Review of current research in the experimental analysis of behavior. Prerequisite: PSY 101.

473, 673 RADICAL BEHAVIORISM (3+0) 3 credits
Survey of Skinner's work. Emphasis on the role of private events in a natural science, the analysis of verbal behavior and the conduct of psychological research. Prerequisite: PSY 101.

475 HONORS THESIS (3+0) 3 credits
Research investigation conducted and written in thesis form. Prerequisite: admission to departmental honors program in psychology.

480, 680 MOTIVATION (3+0) 3 credits
Basic principles of motivation. Examination of major themes and contemporary research in the field. Application of motivational psychology to special areas, including educational and business. Prerequisite: PSY 101.

481, 681 PRINCIPLES OF ANIMAL BEHAVIOR (3+0) 3 credits
Review of field and laboratory studies on the determinants and mechanisms of animal behavior to establish relations between behavior of similar and different species. Prerequisite: PSY 101, BIOL 191. (Same as BIOL 481, 681.)

482, 682 ANIMAL BEHAVIOR LABORATORY (0+3) 1 credit
Observational study of behavior, in both laboratory and field, of various animal species. Emphasis on elements of ethogram preparation and between species comparisons. Prerequisite: previous or concurrent registration in PSY 481 or 681 or BIOL 481 or 681. (Same as BIOL 482.)

483, 683 ANIMAL COMMUNICATION (3+0) 3 credits
Review of field and laboratory studies on animal communication and human nonverbal communication. Prerequisite: PSY 101; BIOL 111.

499, 699 SPECIAL TOPICS (1 to 3+0) 1 to 3 credits
Study in a suitable topic under supervision of a faculty member. Maximum of 9 credits. Prerequisite: PSY 101.

634 CULTURAL DIVERSITY (3+0) 3 credits
Psychological implications and consequences of cultural diversity with respect to applied psychological practice and research. Emphasis on racial, cultural, sexual orientation and gender differences.

Prerequisite for following 700-level courses: admission to graduate standing in the Department of Psychology.

706 INTERMEDIATE STATISTICS I (3+0) 3 credits
Theory and application of statistical inference with special emphasis on probability, parametric and nonparametric techniques including simple and complex analysis of variance, multiple comparison techniques and trend analysis. Prerequisite: PSY 210 or equivalent. (Same as SOC 706.)

707 INTERMEDIATE STATISTICS II (3+0) 3 credits
Theory and application of statistical inference with special emphasis on multivariate models, including multiple and partial regression, factor analysis, path analysis and discriminant function analysis. Prerequisite: PSY 706. (Same as SOC 707.)

708 SEMINAR IN PHILOSOPHICAL PSYCHOLOGY (3+0) 3 credits
Selected topics in recent philosophical psychology. Prerequisite: PSY 408. (Same as PHIL 708.)

710 EXPERIMENTAL DESIGN (3+0) 3 credits
Theory and application of principles used in the construction of experimental designs primarily as derived from the analysis of variance. Prerequisite: PSY 706, 707.

713 BEHAVIORAL AND SYSTEMS ASSESSMENT (3+0) 3 credits
Theory and methods of the behavioral assessment of individuals and systems. Director observation, environmental assessment, functional analysis, task analysis, needs assessment, program monitoring and evaluation.

714 THEORY AND APPLICATION OF CLINICAL PSYCHOLOGY: ADULT I (3+0) 3 credits
Supervised theoretical and experiental application of adult psychotherapy and assessment approaches in clincial psychology. Prerequisite: admitted to clinical psychology program.

715 THEORY AND APPLICATION OF CLINICAL PSYCHOLOGY: ADULT II (3+0) 3 credits
Supervised theoretical and experiential application of advanced adult and couple approaches in psychothaapy and assessment. Prerequisite: admitted to the clinical psychology program.

716 THEORY AND APPLICATION OF CLINICAL PSYCHOLOGY: CHILD I (3+0) 3 credits
Supervised theoretical and experiential application of child-family approaches in psychotherapy, assessment and community psychology. Prerequisire: admitted to the clinical psychology program.

717 THEORY AND APPLICATION OF CLINICAL PSYCHOLOGY: CHILD II (3+0) 3 credits
Supervised theoretical and experiential application of advanced child-family approaches in psychotherapy, assessment and community psychology. Prerequisite: admitted to the clinical psychology program.

718 RESEARCH METHODS IN SOCIAL PSYCHOLOGY (3+0) 3 credits
Theory construction and application of research methods in social psychology. (Same as SOC 718.)

720 SEMINAR IN SENSATION AND PERCEPTION (3+0) 3 credits
Experiments and problems in sensation and perception. Prerequisite: PSY 405 or equivalent.

721 ADVANCED PSYCHOPHYSIOLOGY (3+0) 3 credits
Current developments and animal physiological research relating to general principles of sensation, perception and behavior. Prerequisite: PSY 403 or equivalent.

723 APPLIED RESEARCH METHODOLOGY I (3+0) 3 credits
Theory and philosophy of research designs in applied psychology, covering single-case designs in the applied environment, theory construction and philosophy of science issues.

724 APPLIED RESEARCH METHODOLOGY II (3+0) 3 credits
Theory and philosophy of research designs in applied psychology, covering group designs, quasi-experimental designs, psychometric theory, classical test construction, reliability, validity, and meta-analysis.

725 SOCIALIZATION (3+0) 3 credits
(See SOC 725 for description.)

726 INTERPERSONAL TRANSACTIONS (3+0) 3 credits
(See SOC 726 for description.)

727 GROUP BEHAVIOR (3+0) 3 credits
(See SOC 727 for description.)

728 COLLECTIVE BEHAVIOR AND MASS SOCIETY (3+0) 3 credits
(See SOC 728 for description.)

730 SEMINAR IN MOTIVATION AND LEARNING (3+0) 3 credits
Contemporary, theory and research in the areas of motivation, emotion, and learning. Prerequisite: PSY 421 or 480 or equivalent.

731-732 THEORIES OF LEARNING (3+0) 3 credits each
Examination of research on learning and theories which attempt to explain the processes of learning. Prerequisite: PSY 421 or equivalent.

733 PSYCHOBIOLOGY OF LANGUAGE (3+0) 3 credits
Critical review and discussion of the literature concerning the relationship of cognitive and communicative behavior to linguistic behavior with particular emphasis on research with animals.

736 ADVANCED STUDIES IN DEVELOPMENTAL PSYCHOLOGY (3+0) 3 credits
Principles, theories, and research in human development with emphasis on the normal individual. Includes supervised research in special problems. Prerequisite: PSY 233 or 234 or 444 or equivalent.

737 SURVEY RESEARCH METHODS (3+0) 3 credits
(See SOC 737 for description.)

738 METHODS AND INNOVATIONS IN ASSESSMENT (3+0) 3 credits
Theory of assessment of persons and situation. Survey of newer assessment techniques and instruments. Methods of constructing tests and other assessment devices. Prerequisite: graduate standing in behavioral sciences. (Same as SOC 738.)

741 NONPATHOLOGICAL PROBLEMS OF BEHAVIOR AND PERSONALITY (3+0) 3 credits
Emphasis on the concerns of normal individuals such as competence, aggression, achievement and anxiety; recent trends in research and contributions of major and micropersonality theorists.

742 AGING AND MENTAL HEALTH (3+0) 3 credits
Research, assessment, and treatment. Includes depression, dementias, grief, wellness, creativity, and wisdom. Prerequisite: graduate standing in behavioral or health sciences.

744-745 SEMINAR IN PERSONALITY (3+0) 3 credits each
Contemporary theory and research on personality. Recent trends and issues.

747 BEHAVIOR ANALYSIS OF LANGUAGE AND COGNITION (3+0) 3 credits
Theoretical and empirical analysis of verbal phenomena such as reference and understanding and its application to human reasoning.

748 COMMUNITY PSYCHOLOGY (3+0) 3 credits
Mental health problems of population, including psychological epidemiology and mental health needs of communities. Mental health consultation and education. Crisis intervention. Prerequisite: graduate standing in behavioral or health sciences.

749 SEMINAR IN COMMUNITY PSYCHOLOGY (3+0) 3 credits
Advanced study of community psychology. Emphasis on community intervention approaches, systems analysis and community change. Prerequisite: graduate standing in behavioral or health sciences.

750-751 SEMINAR IN CLINICAL PSYCHOLOGY (3+0) 3 credits each
Consideration of contemporary theory, research and practices in the field of clinical psychology.

752 GRADUATE RESEARCH 1 to 5 credits
Research projects in psychology carried out under supervision. Maximum of 6 credits.

753 RESEARCH PRACTICUM (1 to 3+0) 1 to 3 credits
Research apprenticeship in ongoing research projects. Familiarization with aims and methods of psychological research.

755 INDIVIDUAL READING 1 to 5 credits
Supervised reading with regular conferences between student and instructor. Maximum of 9 credits.

756 INTRODUCTION TO CLINICAL ASSESSMENT 3+3) 4 credits
Case conceptualization, treatment planning, evaluation, and research. Interviewing, observation, self-report, intelligence and personality assessment, and functional analysis. Prerequisite: admitted to the clinical psychology program.

757 INTRODUCTION TO CLINICAL INTERVENTION (3+3) 4 credits
Theory and practice of clinical intervention with adults and children. Therapeutic systems. Emphasis on integration of theoretical, empirical, and practical knowledge. Prerequisite: admitted to the clinical psychology program.

758 PROBLEMS AND INTERVENTION WITH ADULTS (3+0) 3 credits
Classification and etiology of symptoms, syndromes, and practical knowledge regarding their prevention and treatment. Prerequisite: admitted to the clinical psychology program.

759 PROBLEMS AND INTERVENTION WITH CHILDREN (3+0) 3 credits
Classification and etiology of symptoms, syndromes, and behavior problems in children. Theoretical, empirical and practical knowledge regarding their prevention and treatment. Prerequisite: admitted to the clinical psychology program.

760 SPECIAL TOPICS IN BEHAVIOR ANALYSIS (3+0) 3 credits
Consideration of selected topics concerning current research problems and conceptual issues in behavior analysis.

761-762 CONTEMPORARY ISSUES IN PSYCHOLOGY (3+0) 3 credits each
Consideration in depth of selected topics of contemporary interest. Maximum of 6 credits each.

763 SPECIAL TOPICS IN EXPERIMENTAL PSYCHOLOGY (3+0) 3 credits
Consideration of selected current research problems and conceptual issues in experimental psychology. Maximum of 9 credits.

764 SPECIAL TOPICS IN SOCIAL PSYCHOLOGY (3+0) 3 credits
Consideration of selected current research problems and conceptual issues in social psychology. Maximum of 9 credits. (Same as SOC 764.)

765 BEHAVIOR ANALYSIS IN ORGANIZATIONS (3+0) 3 credits
Application of behavioral principles and methods to the analysis and modification of the behavior of individuals in organizations and institutions.

766 BEHAVIOR ANALYSIS PRACTICUM I (3+0) 3 credits
Supervised practice in the application of behavioral principles and methods in organizational and institutional settings.

767 BEHAVIOR MANAGEMENT AND CONSULTATION (3+0) 3 credits
Theory and application of behavioral analytic techniques with special populations. Behavioral consultation and the development, management, and evaluation of behavioral programs.

768 BEHAVIOR ANALYSIS PRACTICUM II (3+0) 3 credits
Supervised practice in the application of behavioral analytic techniques for special populations. Practice in behavioral consultation and the development and evaluation of behavioral programs.

770 ADVANCED CLINICAL ASSESSMENT (3+0) 3 credits
Theory and practice in the assessment of clinical populations and the use of advanced assessment techniques. Prerequisite: PSY 756 and admitted to the clinical psychology program.

771 INTRODUCTION TO CLINICAL PSYCHOLOGY (3+0) 3 credits
Nature and history of clinical psychology, models of psychological intervention, diagnostic issues, evaluation of psychotherapy, ethical and professional standards, current professional issues. Prerequisite: admitted to the clinical psychology program.

772 RURAL MENTAL HEALTH (3+0) 3 credits
Special characteristics of rural mental health and the clinical psychologist's function as consultant in rural communities.

773 CLINICAL PSYCHOLOGY HALF-TIME EXTERNSHIP 1 to 5 credits *S/U only*
Includes half-time third-year externship as required by the clinical psychology program. Prerequisite: clinical psychology major.

774 CLINICAL PSYCHOLOGY FULL-TIME INTERNSHIP 1 to 5 credits *S/U only*
Includes full-time internship as required by the clinical psychology program. Prerequisite: clinical psychology major.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
203-204 ADVANCED GENERAL PSYCHOLOGY (3+0) 3 credits each
325 PARAPSYCHOLOGY (3+0) 3 credits

RANGE, WILDLIFE AND FORESTRY (RWF)

A number of courses require field trips and laboratory exercises that involve additional student expenses. Many courses are offered on an alternate-year basis. Consult with the department prior to registration.

100 PRINCIPLES OF ENVIRONMENTAL AND RESOURCE SCIENCES (3+0) 3 credits
General introduction to issues and topics related to natural resources, hycrology, conservation biology, and environmental sciences.

222 SOILS (3+3) 4 credits
Physical, chemical and biological properties of soils, soil genesis and classification, plant-soil-water relations. Prerequisite: CHEM 101, 102.

304 HYDROLOGY FOR NATURAL RESOURCE MANAGEMENT (3+0) 3 credits
Principles and methods of managing range and forest land in terms of water quantity, quality and timing. One or two field trips required. Prerequisite: MATH 128 or equivalent.

306 BIOCLIMATOLOGY (3+0) 3 credits
Elements of climatology and microclimatology in relation to living organisms. Effects of man's actions on bioclimates. Prerequisite: MATH 124 or equivalent.

316, 416 INTERNSHIP (1 to 3+0) 1 to 3 credits *S/U only*
Coordinated work study programs in industry or government under the direction of a faculty adviser. Written progress reports are prepared periodically and at the conclusion of the internship.

327 SOIL FERTILITY AND MANAGEMENT (3+0) 3 credits
Soil as medium for plant growth, essential elements, fertilizers and their use, ammendments, salinity, soil fertility evaluation, cropping systems and soil management. Prerequisite: CHEM 142.

341 PRINCIPLES OF RANGE MANAGEMENT (2+3) 3 credits
Conservation, management and multiple use of range resources. Prerequisite: BIOL 111 or equivalent. Field trips required.

345 RANGE AND FOREST PLANTS (3+6) 5 credits
Identification, distribution, and management of the major range plants and forest trees occurring in the western U.S.

347 PLANT ECOLOGY (3+3) 4 credits
(See BIOL 347 for description.)

351 REMOTE SENSING OF NATURAL RESOURCES (2+3) 3 credits
Measurements and interpretation of aerial photography and other remotely sensed- data. Conventional and digital mapping techniques for land measurements. Prerequisite: MATH 128; RWF 100.

390 RANGE AND FOREST ENTOMOLOGY (2+3) 3 credits
Recognition of causal agents and damage produced by insects and diseases to range and forest species. Includes concepts of prevention and control of these pests in relation to resource management. Prerequisite: BIOL 111, 314.

401, 601 LOGGING SYSTEMS (2+3) 3 credits
Analysis and development of timber harvest plans for different forest types and silvicultural treatments with consideration of the transportation system, logging methods and costs, silvicultural and watershed protection principles, and taxation and legal requirements. Mandatory field trip. Prerequisite: RWF 100.

402, 602 FOREST MANAGEMENT (4+0) 4 credits
Organization of forest properties for sustained production of wood products; determination of rotation, regulation of cut and growing stock, management plans and forest valuation. Prerequisite: MATH 128; RWF 100.

404, 604 INTRODUCTION TO AEROSPACE REMOTE SENSING (3+2) 3 credits
(See G E 404 for description.)

405, 605 SILVICULTURE AND REGIONAL SILVICULTURE (4+3) 5 credits
Theory and methods of controlling establishment, composition, growth and quality of forest stands. Application of silvicultural practices to important species and forest types of the U.S. Mandatory field trips. Prerequisite: RWF 100, 345.

406, 606 FOREST TREE PHYSIOLOGY AND GENETICS (4+0) 4 credits
Photosynthesis, respiration, water relations, nutrition, shoot and root development, reproduction and genetics of forest trees. Application of physiological and genetic principles in predicting effects of silvicultural practices on tree growth and in tree improvement. Prerequisite: BIOL 111.

407, 607 QUANTITATIVE RANGE AND FOREST TECHNIQUES (4+3) 5 credits
Range methods and forest mensuration techniques commonly used in quantifying natural resources. Statistical analyses and interpretation are stressed. Prerequisite: AGEC 270; MATH 128; RWF 345.

411, 611 ENVIRONMENTAL LAW (3+0) 3 credits
(See C E 411, 611 for description.)

414, 614 HYDROLOGIC FLUID DYNAMICS (3+0) 3 credits
(See GEOL 414, 614 for description.)

421, 621 CONSEVATION BIOLOGY (3+0) 3 credits
Theory and application of scientific principles to the preservation of biological diversity and the sustainable use of natural resources. Local and global issues are addressed. Prerequisite: BIOL 111, 112. (Same as BIOL 421, 621.)

422, 622 SOIL PHYSICS (2+3) 3 credits
Soil physical properties as related to water and solute flow; texture, structure, specific surface, soil-water interaction, colloidal behavior. Prerequisite: CHEM 202; MATH 216; PHYS 151 or equivalent.

424, 624 AVIAN ECOLOGY AND MANAGEMENT (2+3) 3 credits
Life history patterns of selected bird species and application of life history information to conservation. Laboratory consists of two Saturday plus Sunday field trips. Prerequisite: BIOL 376, 377 or equivalent.

425, 625 CONSERVATION OF LARGE MAMMALS AND THEIR ECOSYSTEMS (3+0) 3 credits
Presentation of key scientific concepts and examination of factors required for conservation of marine and terrestrial mammals including primates, ungulates, carnivores, and cetaceans. Prerequisite: BIOL 314; 378.

427, 627 WILDLIFE HABITAT MANAGEMENT (2+3) 3 credits
Cultural practices, including mechanical, chemical and biological techniques to manipulate terrestrial environments, meeting specific habitat objectives. Field trips required. Prerequisite: BIOL 314, RWF 302.

432, 632 ENVIRONMENTAL TOXICOLOGY (3+0) 3 credits
Chemistry and toxicology of toxicants in the environment, particularly pesticides. Other topics include metals, food additives and hazardous wastes. Prerequisite: CHEM 101, 102, 142.

435, 635 CONSERVATION OF NATURAL RESOURCES (3+0) 3 credits
(See GEOG 435 for description.)

458, 658 LAND AND WATER RESOURCE POLICY (3+0) 3 credits
Issues surrounding the allocation and use of land and water sources in the U.S. Emphasis on issues affecting Western states.

460, 660 RANGELAND RESOURCE MANAGEMENT 3 credits
Capstone field course involving evaluation of actual rangeland management case studies. Prerequisite: BIOL 314; RWF 341, 345.

467, 667 REGIONAL AND GLOBAL ISSUES IN ENVIRONMENTAL SCIENCES (3+0) 3 credits
Scientific principles underlying large-scale environmental problems linking the atmosphere, biosphere and geosphere. Empirical and modeling techniques for studying global issues. Analysis of specific issues. Prerequisite: BIOL 314; CHEM 102. (Same as ENV 467, 667.)

471, 671 PLANT PATHOLOGY (3+3) 4 credits
Nature cause and control of plant diseases. Prerequisite: BIOL 111.

480 INDEPENDENT STUDY 1 to 3 credits
Intensive study of topics in (a) natural resource management, (b) conse tion biology, (c) environmental chemistry, and (d) hydrology/hydrogeol Maximum of 6 credits.

482, 682 SMALL WATERSHED HYDROLOGY (4+3) 5 credits
The role of land conditions in dealing with problems of applied hydrol with emphasis on the small watershed, limited data and land managen situations. Prerequisite: AGRO 222; GEOL 101; MATH 128.

483, 683 HYDROLOGY OF IRRIGATED AGRICULTURE (3+0) 3 cre
Water supply and diversion for irrigation. Production functions and evi transpiration modeling. Shallow groundwater management and safe posal of drainage effluent. Prerequisite: MATH 128; AGRO 222.

485, 685 SPECIAL TOPICS (1 to 3+0) 1 to 3 credits
Presentation and review of recent research, innovations and developm related to natural resource management, hydrology, conservation biol and environmental chemistry.

490, 690 ENVIRONMENTAL ISSUES IN PUBLIC LAND MANAGEMENT (3+0) 3 credits
Critical presentations and discussions of selected topics.

493, 693 RANGE AND FOREST ECOLOGY (2+3) 3 credits
Ecologic and economic interpretations of major range and forest com nities. The application of autecological synecological principles to ra and forest ecosystems. Ecosystem influences and modeling. Field t required. Prerequisite: BIOL 314 or equivalent.

494, 694 RANGE AND FOREST ADMINISTRATION AND POLIC (3+0) 3 credits
Public administration applied to forest and rangeland resource man ment. Development history of resource agencies and policies. Adminis tive procedures, policy formation, decision-making, and public partic tion principles as related to the present and future political environme natural resource protection, development and management.

497, 697 FOREST AND RANGE SOILS (3+0) 3 credits
Soil types associated with forests and range. Biological, physical chemical soil properties, productivity relations and management impl tions. Field trips required. Prerequisite: AGRO 222.

701 ADVANCED RESOURCE MANAGEMENT 1 to 3 credits
Advanced course work in (a) natural resource management, (b) conse tion biology, (c) environmental chemistry, and (d) hydrology/hydrogeol Maximum of 6 credits.

702 SOIL CHEMISTRY (2+3) 3 credits
Soil chemical properties; soil solution, chemical equilibria, liquid/s interaction, exchange, adsorption, molecular retention, transport and t element chemistry. Prerequisite: CHEM 202; MATH 182; PHYS 15 equivalent.

714 WILDLIFE ECOLOGY AND BEHAVIOR (3+0) 3 credits
Seminar or lectures on topics and problems in current literature deal with predators and herbivores, group living, mating systems and distri tional patterns. Prerequisite: BIOL 378.

715 PRESENTATION OF SCIENTIFIC INFORMATION (2+0) 2 cre
Development of skills to improve visual and verbal presentation of search results to lay and scientific audiences.

725 PLANT PHYSIOLOGICAL ECOLOGY (3+0) 3 credits
Microenvironment and energy balance of plants. Acquisition of wa carbon and nutrients. Application of mechanistic, physiological proces to ecological relationships between plants and their environment. Prer uisite: BIOL 320 or 486; BIOL 347 or RWF 493; B CH 412 or BIOL 355.

726 RESEARCH METHODS IN PLANT PHYSIOLOGICAL ECOLO (2+1) 3 credits
Theory and technical criteria for techniques and instrumentation to m sure: plant micro-climate; carbon, water, and nutrient balances of pla above-ground and below-ground vegetation characteristics. Corequis RWF 725.

735 SURFACE WATER CONTAMINANT TRANSPORT I
(3+0) 3 credits
Development and application of equations for predictiong the transport and fate of both conservative and non-conservative substances in freshwater environments. Prerequisite or corequisite: MATH 320 or equivalent; C E 497, 498 recommended.

740 SURFACE WATER CONTAMINANT TRANSPORT II
(2+3) 3 credits
Utilization of advanced modeling topics including dynamic water quality simulation (estuaries) and uncertainty analysis. Project oriented application of state-of-the-art models to riverine systems. Prerequisite: RWF 735.

741 IRRIGATION WATER MANAGEMENT (3+0) 3 credits
Evapotranspiration modeling and irrigation scheduling for optimal crop yield and water conservation. Effect of irrigation management on drainage quantity and quality. Drainage water disposal. Prerequisite: RWF 483, 683 or equivalent.

745 RANGELAND GRAZING (3+0) 3 credits
Co-evolutionary development of plant communities and native ungulate grazing. Development of modern livestock grazing strategies. Prerequisite: RWF 341.

746 ADVANCED ANALYSIS METHODS IN NATURAL RESOURCES
(2+3) 3 credits
Applied use and interpretation of multivariate and modeling techniques for natural resources and biological studies. Prerequisite: MATH 178, 183 or E E 131, AGEC 270 or MATH 352, 313, 320, 330 recommended.

760 RANGE ECOSYSTEM ANALYSIS (1+3) 2 credits
Procedure for the investigation of range ecosystems, plant biomass, animal biomass, nutrition, vegetation-soil relationships, stratification, and vegetation sampling, mineral cycling, processes, systems and modeling. Prerequisite: course in statistics.

782 HYDROLOGY/HYDROGEOLOGY SEMINAR (0+3) 1 credit
Preparation of written reports and/or oral presentations. Guest lecturers. Maximum of 3 credits. (Same as GEOL 782.)

790 SEMINAR (1+0) 1 credit
Presentations of potential research projects and research results by graduate students and faculty. Maximum of 2 credits.

793 INDIVIDUAL STUDY 1 to 3 credits
Intensive study of a special problem in (a) natural resource management, (b) conservation biology, (c) environmental chemistry, and (d) hydrology/hydrogeology. Maximum of 6 credits in each topic.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 1 to 2 credits *S/U only*
Required of all graduate students who wish to complete the master of science degree under Plan B.

797 THESIS 1 to 6 credits
Thesis may be written in area of natural resources management, hydrology/hydrogeology, conservation biology, or environmental chemistry.

799 DISSERTATION 1 to 24 credits

799 DISSERTATION 1 to 24 credits

Inactive Courses
291 RANGE AND FOREST FIRE SCIENCE (1+3) 2 credits
323 FISHERY MANAGEMENT (2+3) 3 credits
348 RANGE IMPROVEMENT (2+3) 3 credits
361 RECREATION RESOURCE MANAGEMENT (3+0) 3 credits
403 603 ADVANCED FOREST MENSURATION (2+3) 3 credits

RECREATION, PHYSICAL EDUCATION AND DANCE (RPED)

Special fees apply to many activity courses which are in addition to regular registration fee. Consult with the department prior to registration.

100-199 RECREATION-PHYSICAL EDUCATION ACTIVITY CLASSES
A maximum of three credits from 100-199 may be taken during any one semester or summer session except for special programs listed in the class schedule. When beginning, intermediate or advanced classes are scheduled in an activity, the student should consult the department to determine in which level to enroll. A student may enroll in the same class four times for credit.

200-797 RECREATION-PHYSICAL EDUCATION THEORY CLASSES

100-199 ACTIVITY CLASSES (0+2) 1 credit *S/U only*

AQUATICS
101 Diving
102 Lifeguard Training
103 Sailing
104 Scuba
105 Swimming, Beginning [1]
106 Swimming, Intermediate
107 Swimming, Advanced
108 Swimming, Synchronized

DANCE [2]
110 Modern Dance, Beginning [1]
111 Modern Dance, Intermediate
112 Modern Dance, Advanced
115 Dance, Social
116 Dance Styles: Afro-Haitian, Tap or Musical Comedy
117 Dance, Improvisation
118 Dance, Repertory
119 Dance, Jazz
120 Ballet, Beginning [1]
121 Ballet, Intermediate
122 Ballet, Advanced

GAMES (COURT)
125 Gymnastics
126 Basketball
127 Team Handball
128 Badminton
129 Softball
130 Handball, Beginning [1]
131 Handball, Inter.-Adv.
132 Racquetball, Beginning [1]
133 Racquetball, Inter.-Adv.
134 Squash
135 Tennis, Beginning [1]
136 Tennis, Intermediate
137 Tennis, Advanced
138 Volleyball, Beginning [1]
139 Volleyball, Inter.-Adv.

MOUNTAIN SPORTS
140 Angling and Casting
141 Backpacking
142 Bike Touring
143 Mountaineering
144 Orienteering
145 Rock Climbing, Beginning
146 Rock Climbing, Inter.-Adv.
147 Skiing, Alpine
148 Ski Touring

MARTIAL ARTS
152 Karate, Beginning [1]
153 Karate, Inter.-Adv.
154 Judo, Beginning [1]
155 Judo, Inter.-Adv.

[1] Maximum of 2 credits.
[2] Additional dance courses: RPED 219, 261, 262, 360, 461, 661.

MISCELLANEOUS ACTIVITIES
156 Archery
157 Bicycling
158 Bowling, Beginning[1]
159 Bowling, Inter.-Adv.
160 Golf, Beginning[1]
161 Golf, Intermediate
162 Golf, Advanced
163 Horsemanship (0+3)
165 Skating, Ice
166 Skating, Roller
168 Soccer
169 Yoga

CONDITIONING
174 Conditioning, Rhythmic Aerobic, Beginning
175 Conditioning, Rhythmic Aerobic, Intermediate
176 Conditioning, Rhythmic Aerobic, Advanced
177 Fitness Assessment and Exercise Prescription
178 Conditioning, Water Exercise
179 Conditioning, Intercollegiate Athletics
180 General Physical Fitness
181 Conditioning, ROTC
182 Jogging
183 Weight Lifting

INTERCOLLEGIATE COMPETITIVE ACTIVITIES
184 Intercollegiate Baseball
185 Intercollegiate Basketball
186 Intercollegiate Boxing
187 Intercollegiate Cross Country
188 Intercollegiate Football
190 Intercollegiate Golf
193 Intercollegiate Skiing
194 Intercollegiate Softball
195 Intercollegiate Swimming
196 Intercollegiate Tennis
197 Intercollegiate Track and Field
198 Intercollegiate Volleyball

201 INTRODUCTION TO RECREATION AND PHYSICAL EDUCATION (2+2) 3 credits
Background, aims, objectives and current trends in RPED; skill and proficiency tests required for all RPED majors and minors.

202 THEORY OF MOVEMENT (2+0) 2 credits
Analysis of movement; comparison of movement patterns, purposes and organizations within sports and dance.

Courses numbered 204 through 257 are designed for majors in RPED.

204 METHODS OF PLANNING AND EVALUATION IN ACTIVITIES (1+2) 2 credits
Techniques of assessment and pre-teaching activities that involve developing an instructional guide that incorporates concepts, objectives, and plans for teaching a subject, unit, or lesson.

216 METHODS OF TEACHING CROSS COUNTRY SKIING (1+2) 2 credits
Designed for experienced cross country skiers who wish to become competent cross country ski instructors.

217 METHODS OF TEACHING WATER SAFETY (1+2) 2 credits
Water safety instructor course. American Red Cross Certificate awarded upon completion. Prerequisite: Life saving certificate.

218 METHODS OF TEACHING SKIING (1+2) 2 credits
Instruction in American, Austrian and French ski systems. Progressions, finished technical forms of ski maneuvers, mechanics and correction of errors.

219 DANCE IN ELEMENTARY EDUCATION (1+2) 2 credits
Methods of teaching a comprehensive elementary school dance program including movement exploration, creative dance-making, dance and rhythmic skills and simple folk dances.

234 METHODS OF TEACHING INDIVIDUAL SPORTS (1+3) 2 credits
Generalist approach to planning strategies, teaching methodology and leadership of individual sports.

235 METHODS OF TEACHING TEAM SPORTS (1+3) 2 credits
Generalist approach to planning strategies, teaching methodolo
leadership.

240 RECREATION AND PLAYGROUND LEADERSHIP (1+2) 2
Application of leadership techniques to community recreation an
ground programs. Instruction and practical experience in specific
ation leadership skills.

250 BASIC AND EMERGENCY WATER SAFETY, INCLUDING (0+2) 1 credit

253 METHODS OF TEACHING DANCE AND RHYTHMS (1+2) 2 credits

256 METHODS OF TEACHING OUTDOOR AND RECREATIO GAMES (0+2) 1 credit

257 METHODS OF TEACHING PHYSICAL FITNESS AND RHYTHMATIC EXERCISE (0+2) 1 credit

261 INTRODUCTION TO DANCE COMPOSITION (1+2) 2 cred
Basic elements of choreography. Guided experiences in movement
opment, design and form. Prerequisite: one semester of dance.

262 DANCE PRODUCTION (2+2) 3 credits
Theory of and practical experience in producing a dance presen
Prerequisite: one semester of dance or equivalent.

263 AESTHETICS AND CRITICISM IN DANCE (3+0) 3 credits
Readings and discussion of the changing perceptions, forms and tre
dance.

264 HISTORY OF DANCE I: PRIMITIVE-19TH CENTURY (3+0) 3 credits
Dance in primal cultures through the Romantic era.

265 HISTORY OF DANCE II: 20TH CENTURY (3+0) 3 credits
Survey of principal influences on and directions of dance in the 1900's
modern ballet to music video.

270 ADVANCED FIRST AID AND EMERGENCY CARE (1+2) 2 c
American Red Cross certificate awarded upon completion.

271 INSTRUCTOR'S FIRST AID (2+0) 2 credits
Regular Red Cross course. Those completing the course may be desig
first-aid instructors. Prerequisite: RPED 270 or First Aid Certificate.

290 FIELD EXPERIENCES IN RECREATION OR PHYSICAL EDUCATION (0+3) 1 credit
Directed field work experience in teaching and/or directing ph
education activities for school or recreation groups. Maximum of 3 cr

299 INDEPENDENT STUDY IN RECREATION OR PHYSICAL EDUCATION (1 or 2+0) 1 or 2 credits
Individual study and/or research in areas of recreation or physical ed
tion not covered in other undergraduate courses. Maximum of 4 cre

301 ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION AND ATHLETICS (3+0) 3 credits
Principles and methods of organizing and administering physical ed
tion and athletics in secondary schools. Prerequisite: RPED 201.

302 ORGANIZATION AND ADMINISTRATION OF INTRAMU AND RECREATION PROGRAMS (1+3) 2 credits
Theory of and active participation in the organization and administra
of intramural and recreation sports programs.

321 ORGANIZATION AND JUDGING OF GYMNASTIC MEETS (0+2) 1 credit
Prerequisite: competitive or teaching experience in gymnastics.

322 ORGANIZATION AND JUDGING OF TRACK AND FIELD ME (0+2) 1 credit
Prerequisite: RPED 326.

[1] Maximum of 2 credits.

323 THEORY OF BASEBALL (2+0) 2 credits
Theories, strategies and techniques of teaching and coaching.

324 THEORY OF BASKETBALL (2+0) 2 credits
Theories, strategies and techniques of teaching and coaching.

325 THEORY OF FOOTBALL (2+0) 2 credits
Theories, strategies and techniques of teaching and coaching.

326 THEORY OF TRACK AND FIELD (2+0) 2 credits
Theories, strategies and techniques of teaching and coaching.

327 THEORY OF SOFTBALL AND VOLLEYBALL (2+0) 2 credits
Theories, strategies and techniques of teaching and coaching.

330 OFFICIATING MAJOR SPORTS (2+0) 2 credits
Interpretations of rules, methods of officiating and characteristics of officials. Coeducational class: men's major sports in the fall semester, women's major sports in the spring semester. Maximum of 4 credits; one fall semester and one spring semester.

331 PSYCHOLOGY OF COACHING (3+0) 3 credits
Role of psychology in coaching athletic activities. Prerequisites: RPED 201, 323 or 324 or 325 or 326.

340 CAMPING AND OUTDOOR RECREATION (1+2) 2 credits
Practices and principles of camping in relation to school curriculum. Campcraft skills, techniques of group work, program planning and camp counseling.

341 PLANNING CONCEPTS FOR RECREATION FACILITIES (3+0) 3 credits
Developing and operating leisure service buildings, parks, and equipment.

342 COMMUNITY RECREATION (2+0) 2 credits
Operation of a recreation department and its relationship to other community agencies.

343 RECREATION FOR LATER LIFE (3+0) 3 credits
Practices and principles of recreation for the aged. Planning and directing activities.

350 TEACHING PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (2+2) 3 credits
Curriculum planning, lesson plans, and teaching methods for the classroom teacher with lab teaching experience.

351 PHYSICAL EDUCATION ACTIVITIES FOR PRIMARY GRADES K-3 (2+2) 3 credits
Intensive study of movement activities and teaching methods in the K-3 curriculum. Practical experience teaching in lab and public schools.

352 PHYSICAL EDUCATION ACTIVITIES FOR INTERMEDIATE GRADES 4-8 (2+2) 3 credits
Teaching lifetime fitness activities, fitness concepts and basic skills for lifetime sports participation. Practical experience in lab and public schools.

354 PERSONAL HEALTH AND LIFE STYLES (3+0) 3 credits
(See CHS 354 for description.)

360 COMPARATIVE DANCE STYLES (2+2) 3 credits
In-depth study of selected dance forms; includes repertory and performance. Prerequisite: intermediate/advanced dance technique.

363 CONCERT CHOREOGRAPHY (0+3 per credit) 1 or 2 credits
Directed student choreographic projects for public performance; by audition only. Maximum of 6 credits.

364 DANCE PEDAGOGY (2+1) 2 credits
Foundations of ballet and modern dance techniques and teachings. Prerequisite: advanced technique level.

365 ART OF PERFORMANCE (1+2) 2 credits
Elements of the act of presentation: preparation, intent, focal skills, and metaphor.

370 ATHLETIC INJURIES (1+2) 2 credits
Prevention and treatment of common athletic injuries, including practical application.

371 METHODS OF TEACHING HEALTH (3+0) 3 credits
Emphasis on current health issues relevant for physical education majors to teach grades K through 12. Prerequisite: RPED 201.

372 METHODS OF TEACHING PHYSICAL EDUCATION (3+0) 3 credits
Preparation for student teaching.

373 FIELD EXPERIENCE IN RECREATIONAL CRAFTS (1+3) 2 credits
Crafts as applied to recreation. Major students assigned in crafts area of Reno Recreation Department under the supervision of staff member.

396 PRACTICAL EXPERIENCE IN ACTIVITY CLASSES (0+2) 1 credit
Students assist in advanced work in physical education activities classes. Maximum of 3 credits.

401, 601 INTRODUCTION TO RESEARCH IN MOVEMENT BASED DISCIPLINES(3+0) 3 credits
Terminology, statistics, methodology, design and writing in psychomotor related programs.

402, 602 HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION (2+0) 2 credits
Historical analysis of physical education. Philosophical bases and principles as guidelines for the profession. Prerequisite: RPED 201, 4 credits above 300 in RPED.

403 KINESIOLOGY (3+0) 3 credits
Mechanical and anatomical analysis of motion as a basis for the teaching of RPED activities. Designed for those majoring in health science fields. Prerequisite: BIOL 223, 224.

405, 605 MOTOR LEARNING (3+0) 3 credits
Motor-perceptual system processes, with special attention to skill acquisition and skill levels as categories of human learning.

406, 606 PHYSIOLOGY OF EXERCISE (3+0) 3 credits
Physiological bases for planning RPED programs. Observations of respiratory, circulatory, nervous and metabolic adjustments to physical exercise. Designed for those majoring in health science fields. Prerequisite: BIOL 223, 224.

407, 607 THERAPEUTIC ASPECTS OF MOVEMENT (3+0) 3 credits
Therapeutic exercises and muscular activities adapted to individuals with physical handicaps, tensions or low muscular activity levels.

408, 608 PHYSICAL FITNESS ASSESSMENT AND PRERSCRIPTION (2+2) 3 credits
Theory and practice of determining fitness levels and developing appropriate exercise programs.

420 COACHING CLINIC (2+0) 2 credits *S/U only*
Lectures and demonstrations in techniques of coaching major sports for men. A maximum of 4 credits is acceptable toward the satisfaction of any department, college or university requirement.

421 621 LIFETIME SPORTS PROGRAM (2+2) 3 credits
Analyses, development and maintenance of skills. Purchase and maintenance of equipment.

422 WOMEN'S COACHING WORKSHOP (1+2) 2 credits
Instruction and participation in techniques of coaching women's sports. Maximum of 4 credits.

440, 640 RECREATION ADMINISTRATION (3+0) 3 credits
Comprehensive study of recreation administration including community organization, promotion, budgets, public relations and leadership. Prerequisite: RPED 201, 240; 2 credits above 300.

450, 650 MOVEMENT EDUCATION FOR ELEMENTARY SCHOOL CHILDREN (1+2) 2 credits
Problem-solving approach to the teaching of motor skills to children. Prerequisite: 12 credits in RPED or elementary school teaching certificate.

451, 651 ADAPTED PHYSICAL EDUCATION (3+0) 3 credits
Understanding the role of physical education in providing special education service to the handicapped. Basic information regarding growth and development of handicapped.

452, 652 SOCIAL PSYCHOLOGY OF SPORTS AND RECREATION (2+0) 2 credits
Nature of the person and interpersonal relationships in sport and recreation environments. Topics include power, status, motivation, attitude, behavior and leadership.

461, 661 CHOREOGRAPHY WORKSHOP (1+2) 2 credits
Intermediate and advanced study of dance composition; philosophy, principles, conventional forms and choreographic resources. Prerequisite: RPED 261. Maximum of 4 credits.

462 PHYSICAL EDUCATION WORKSHOP 1 or 2 credits
Recent trends, changes and techniques in physical education, recreation and dance activities. Maximum of 4 credits.

470 ADVANCED ATHLETIC INJURIES (2+0) 2 credits
Therapeutic modalities, rehabilitation techniques and injury assessment procedures. Prerequisite: RPED 370.

492, 692 RECREATION INTERNSHIP 4 to 10 credits
Practical work experience in recreation agencies. Prerequisite: 20 credits in recreation and recreation major or minor. Maximum of 10 credits.

493 INDEPENDENT STUDY IN DANCE (1 or 2+0) 1 or 2 credits
Individual study and/or research in areas of dance not covered in other undergraduate courses. Maximum of 4 credits.

494 ATHLETIC TRAINING PRACTICUM (0+3) 1 credit
Developing secondary and professional clinical skills in athletic training. Maximum of 4 credits.

495, 695 FIELD STUDIES IN RECREATION 1 to 6 credits
Directed field work in observing recreation programs and facilities. Maximum of 6 credits.

496, 696 FIELD STUDIES IN PHYSICAL EDUCATION 1 to 6 credits
Directed field work in observing physical education programs and facilities. Maximum of 6 credits.

497, 697 SPECIAL PROBLEMS IN PHYSICAL EDUCATION (2+0) 2 credits
Maximum of 4 credits. Prerequisite: 12 credits in RPED.

498 INDEPENDENT STUDY IN PHYSICAL EDUCATION (1 or 2+0) 1 or 2 credits
Individual study and/or research in areas of physical education not covered in other undergraduate courses. Maximum of 4 credits.

499 INDEPENDENT STUDY IN RECREATION (1 or 2+0) 1 or 2 credits
Individual study and/or research in areas of recreation not covered in other undergraduate courses. Maximum of 4 credits.

701 ADVANCED KINESIOLOGY (2+0) 2 credits
Detailed study of the application of anatomical, mechanical and physiological principles to human motion and sports skill. Prerequisite: RPED 403.

702 CRITICAL ISSUES IN PHYSICAL EDUCATION (2+0) 2 credits
Examination of basic philosophies and objectives of physical education in relation to current societal needs.

703 CURRICULUM CONSTRUCTION IN PHYSICAL EDUCATION (2+0) 2 credits
Social and physiological principles underlying the development of a physical education curriculum consistent with goals of secondary education. Prerequisite: 24 credits in RPED.

704 PHYSICAL EDUCATION SEMINAR (2+0) 2 credits
Intensive study and discussion of selected areas in physical education. Maximum of 4 credits. Prerequisite: 15 credits in RPED.

705 PHYSIOLOGICAL BASES OF CONDITIONING PROGRAM (2+0) 2 credits
Systematic analysis of the physiological results of conditioning programs with particular emphasis on changes in muscular strength, endurance and coordination. Application of basic principles to the organization of conditioning programs. Prerequisite: RPED 406.

771 ATHLETIC INJURIES II (1+2) 2 credits
Methods of caring for athletic injuries. Prerequisite: RPED 370.

792 READINGS IN PHYSICAL EDUCATION AND RECREA (1+0) 1 credit
Designed to acquaint advanced students with recent professional l in physical education and recreation. One conference period p Maximum of 3 credits. Prerequisite: 15 credits in RPED.

793 INDEPENDENT PROJECTS IN PHYSICAL EDUCATION (1 or 2+0) 1 or 2 credits
Prerequisite: 15 graduate credits in RPED courses.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

796 PROFESSIONAL PAPER 3 credits
Required of all graduate students who wish to complete an M.S under Plan B.

797 THESIS 1 to 6 credits

Inactive Courses
100 CANOEING
114 SQUARE DANCE
149 FOIL FENCING
150 BEGINNING SABRE FENCING
151 INTERMEDIATE AND ADVANCED SABRE FENCING
164 SHOOTING
189 INTERCOLLEGIATE BOWLING
191 INTERCOLLEGIATE GYMNASTICS
192 INTERCOLLEGIATE RIFLERY
199 INTERCOLLEGIATE WRESTLING

RELIGIOUS STUDIES (R ST)

Interdisciplinary Courses
101 INTRODUCTION TO RELIGIOUS STUDIES (3+0) 3 credit
Varieties of religious expression: belief, ritual, scripture, art. R issues: God, death, evil, salvation. Methods of studying religion.

SOCIAL WORK (S W)

220 INTRODUCTION TO SOCIAL WORK (3+0) 3 credits
Overview of public and private social services and profession c work, and analysis of their functions as modes of social problem-s

230 CRISIS INTERVENTION (3+0) 3 credits
Analysis of types of crisis, crisis theory, effects of crisis on the comi methods of and community resources for crisis intervention. Prere PSY 101.

320 INDIVIDUAL IN SOCIETY (3+0) 3 credits
Human growth and behavior within a sociocultural context, with attention to professional practice and social policy formation in the l professions, Prerequisite: S W 220.

330 METHODS OF SOCIAL WORK I (3+0) 3 credits
Principles of casework, group work, and community organizatior vention at individual, family, peer group, and community level. Pr site: S W 220.

331 METHODS OF SOCIAL WORK II (3+0) 3 credits
Continuation of S W 330. Prerequisite: S W 330. Corequisite: S W 4

340 HUMAN VALUES AND PROFESSIONAL ETHICS (3+0) 3 c
(See CHS 475 for description.)

375 THE CHILD AND THE LAW (3+0) 3 credits
Philosophical, historical, legal origins of the government's role i welfare services. Knowledge, skills, attitudes to aid in delivery c services to children and families.

390 INTRODUCTION TO RESEARCH (3+0) 3 credits
Methods for practitioners, community organizers and other profes in social service and health education settings. Evaluation and inte tion of research and statistical analysis.

430, 630 SOCIAL SERVICES IN DEATH AND DYING (1+0) 3 credits
Examines attitudes towards death and associated grief processes. Prerequisite: S W 230 or 320.

450, 650 SOCIAL WELFARE POLICY (3+0) 3 credits
Analysis of the development and implementation of social welfare programs and services. Examines the social worker's role in the policy making process. Prerequisite: S W 220.

460, 660 THE LAW AND SOCIAL SERVICES (3+0) 3 credits
Legal foundations and structures of practice and administration in social services. Legal aspects of all modes of intervention in social problems. Prerequisite: S W 220.

464, 664 AIDS: SOCIAL AND HEALTH CARE CONCERNS (3+0) 3 credits
(See CHS 464. 664 for description.)

472, 672 WOMEN: SOCIAL AND HEALTH CARE CONCERNS (3+0) 3 credits
(See CHS 472, 672 for description.)

473, 673 ETHNIC AND RACIAL MINORITIES SOCIAL AND HEALTH CME CONCERNS (3+0) 3 credits
Analysis of social and health care problems unique to ethnic and racial minorities in the U.S.; knowledge of cultural characteristics to be considered in service delivery. Prerequisite: S W 220. (Same as CHS 473, 673.)

474, 674 SOCIAL INTERVENTION IN ALCOHOL AND DRUG ABUSE (3+0) 3 credits
(See CHS 474, 674 for description.)

477, 677 THE CHILD IN THE COMMUNITY (3+0) 3 credits
Analysis of the development and current programs in child welfare including the legal status of children. Prerequisite: SOC 101 or PSY 101.

480-481 FIELD EXPERIENCE IN SOCIAL WORK (2+12) 5 credits each *S/U only*
One-year course combining a two-hour seminar with at least 12 hours of field experience in an approved social or correctional agency under the supervision of an experienced agency worker. Prerequisite: S W 330.

486, 686 SUPERVISION AND ADMINISTRATION IN SOCIAL WORK (3+0) 3 credits
Analysis and application of the theory and methods of supervision and administration in health and social work settings. Emphasis on case studies. Prerequisite: S W 330.

496, 696 DIRECTED INDEPENDENT RESEARCH 1 to 3 credits
Guided research in an area of mutual interest to the student and faculty. Maximum of 6 credits.

498, 698 SPECIAL PROBLEMS 1 to 3 credits
Maximum of 6 credits.

499, 699 INDIVIDUAL READING 1 to 3 credits
Supervised reading with regular conferences between student and instructor. Maximum of 6 credits.

610 HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT (3+0) 3 credits
Social systems framework for analysis of behavior including theories relating to biological, psychological, cognitive, and social development, both normal and abnormal.

615 FOUNDATIONS OF SOCIAL WELFARE (3+0) 3 credits
Key issues and concepts associated with policies and programs affecting children, families, and older adults in contemporary American society,

620 FOUNDATIONS OF PRACTICE (3+0) 3 credits
Basic principles and concepts of social work intervention, including casework, group work, and community organization.

636 STRUCTURAL OPPRESSION (2+0) 2 credits
Impact of institutional racism on victims. Emphasis on moral, ethical, and professional responsibility of social worker.

640 RESEARCH METHODS (3+0) 3 credits
Research design for both quantitative and qualitative studies. Emphasis on practice evaluation, needs assessment, and critical evaluation of research findings. Prerequisite: introductory statistics.

714 ANALYSIS OF ORGANIZATIONS AND COMMUNITIES (3+0) 3 credits
Characteristics and dynamics of organizations and communities as they related to social work practice.

715 POLICY: RULE MAKING AND IMPLEMENTATION (3+0) 3 credits
Perspectives on policymaking, implementation and evaluation, community organization, and political processes. Prerequisite: S W 615.

721 INTERVENTION I—DIRECT (3+0) 3 credits
In-depth examination of varied strategies for subventionary practice. Subject will include experiential activities.

725 INTERVENTION II—INDIRECT (3+0) 3 credits
Examination of the characteristics, methods, processes, and requisite competencies of instrumental practice. Prerequisite: S W 721.

727 INTERVENTION III—SPECIAL POPULATIONS (3+0) 3 credits
Concentration on methods of practice with particular vulnerable groups. Prerequisite: S W 721, 725.

738 HUMAN DIVERSITY AND SPECIAL POPULATIONS (2+0) 2 credits
Study of differences in race, ethnicity, gender, age, sexual orientation, class, religion, culture and physical and mental handicaps using biology, sociology, psychology and anthropology.

739 GENDER ISSUES IN SOCIAL WORK (2+0) 2 credits
Examination of the range of issues and problems unique to or that impact differentially on women. Emphasis on relationship to practice.

740 ADVANCED RESEARCH METHODS (2+3) 3 credits
Principles of research methodology applied to practice or policy with children and families or older adults. Research project carried out under supervision. Prerequisite: S W 640.

780 PRACTICUM (2+20) 6 credits *S/U only*
Supervised social work practice in community social agency with focus on development of foundation skills for practice with vulnerable population groups.

790, 791 ADVANCED PRACTICUM I and II (2+20) 6 credits *S/U only*
Supervised social work practice in a community social agency with focus on development of advanced skills for practice with disadvantaged and vulnerable populations. Prerequisite: S W 780 or equivalent.

792 PROFESSIONAL ISSUES SEMINAR (1+0) 1 credit
Focus on selected topics related to social work practice with strong emphasis on values and ethics.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

SOCIOLOGY (SOC)

101 PRINCIPLES OF SOCIOLOGY (3+0) 3 credits
Sociological principles underlying the development, structure and function of culture, society, human groups, personality formation and social change.

102 SOCIAL PROBLEMS (3+0) 3 credits
Selected social problems, their causation and proposed solutions.

202 AMERICAN SOCIETY (3+0) 3 credits
Analysis of the structure of American society; its historical development and its contemporary institutional forms.

204 COMPARATIVE SOCIOLOGY (3+0) 3 credits
Comparative analysis of social structure in traditional and modern societies. Emphasis on a macro-sociological approach in the study of socioeconomic processes in different social systems.

205 ETHNIC GROUPS IN CONTEMPORARY SOCIETIES (3+0) 3 credits
(See ANTH 205 for description.)

207 INTRODUCTION TO MAIN CURRENTS IN SOCIOLOGICAL THOUGHT (3+0) 3 credits
The works of classical and contemporary sociological theorists. Emphasis on the development of sociological theory in the U.S. Prerequisite: SOC 101.

210 STATISTICAL METHODS (3+2) 4 credits
(See PSY 210 for description.)

261 SOCIAL PSYCHOLOGY I: THE PERSON AND SOCIAL INFLUENCE (3+0) 3 credits
(See PSY 261 for description.)

275 MARRIAGE AND THE FAMILY (3+0) 3 credits
Sex roles, dating patterns, mate selection, marital interaction and success and alternative forms of marriage and family life.

333 SOCIOLOGY OF RELIGION (3+0) 3 credits
Sociological and historical examination of institutionalized and noninstitutionalized religion with emphasis on religions in America. Prerequisite: SOC 101.

342 SOCIAL STRATIFICATION (3+0) 3 credits
Analysis of major theories of stratification and inequality. Historical development of class systems with emphasis on the social class structure of American society. Prerequisite: SOC 101.

345 SOCIAL MOVEMENTS AND COLLECTIVE BEHAVIOR (3+0) 3 credits
Processes involved in collective behavior and social movements; includes such topics as rumor, panic, riots, disaster and social movement organizations, Prerequisite: SOC 101.

350 SOCIAL CHANGE (3+0) 3 credits
Institutional change emphasizing the comparative perspective. A survey of various theories of social change and their applications in the analysis of various historical and contemporary societies. Prerequisite: SOC 101.

352 JUVENILE DELINQUENCY (3+0) 3 credits
Causes, conditions and prevention of juvenile crime. Prerequisite: SOC 101.

362 SOCIAL PSYCHOLOGY II: GROUP STRUCTURE AND PROCESS (3+0) 3 credits
Topics include interpersonal attraction, power, status, group norms, leadership, group problem-solving, roles and role strain. Prerequisite: PSY 101 or SOC 101. (Same as PSY 362.)

366 CRIMINOLOGY (3+0) 3 credits
Major theories and research findings on the causes of delinquency and crime. Prerequisite: SOC 101. (Same as C J 366.)

367 PENOLOGY (3+0) 3 credits
Processes through which the apprehended offender passes: arrest, detention, probation, incarceration and parole. Critical evaluation of various programs for treatment and prevention of crime. Prerequisite: SOC 352 or 366. (Same as C J 367.)

369 SOCIOLOGY OF LAW (3+0) 3 credits
Examination of relationship of legal institutions and society, focusing on law as a social product and the social psychology of jury processes and plea bargaining.

371 SOCIAL ORGANIZATION (3+0) 3 credits
Examination of major social institutions in terms of structure, function and change. Prerequisite: SOC 101.

373 POLITICAL SOCIOLOGY (3+0) 3 credits
Sociological theories and concepts brought to bear on various aspects of political theory and behavior. Prerequisite: SOC 101.

376 THE COMMUNITY (3+0) 3 credits
Description and analysis of American urban, suburban and rural communities including communes. Emphasis on variation in community institutions and processes. Prerequisite: SOC 101.

379 ETHNIC AND RACE RELATIONS (3+0) 3 credits
Social, psychological, economic and political aspects of minority in American society. Prerequisite: SOC 101. Not applicable t advanced degree in sociology.

391 BUREAUCRACY AND LARGE SCALE ORGANIZATIO (3+0) 3 credits
Sociology of modern large scale organizations with emphasis o ment agencies, corporations, political parties and labor unions. site: SOC 101.

392 RESEARCH METHODS (3+0) 3 credits
Major techniques and problems encountered in both survey an mental research in the behavioral sciences. Prerequisite: PSY 10 101. (Same as PSY 392.)

393 INDUSTRIAL SOCIOLOGY (3+0) 3 credits
Examinations of various work settings such as factories and "whi industries and third impact upon individual employees, emphas development of alienation. Prerequisite: SOC 101.

401-402, 601-602 ADVANCED GENERAL SOCIOLOGY (3+0) 3 credits each
Intensive survey of major areas of sociology. Prerequisite: SO admission to honors program.

404, 604 SOCIOLOGY OF DEVELOPING SOCIETIES (3+0) 3 c
Analysis of major theories of development as applied to the expe contemporary Third World societies. The socioeconomic develo countries of Asia, Africa and Latin America examined from a com historical perspective. Prerequisite: SOC 101.

410, 610 SOCIOLOGY OF AGING (3+0) 3 credits
Examination of sociological factors affecting the aging process in societies. Prerequisite: SOC 101.

422, 622 SOCIAL PSYCHOLOGICAL THEORIES (3+0) 3 credit
Review of theories in social psychology. Emphasizes classical stu the developmental trends which led to current perspectives i psychology. Prerequisite: SOC 101 or PSY 101. (Same as PSY 422.

427, 627 COMPUTER APPLICATIONS IN SOCIAL AND BEHAV SCIENCE (3+0) 3 credits
Advanced use of computer in a variety of areas of the social and bel sciences. Prerequisite: SOC 210 or PSY 210, SOC 101 or PSY 101. (PSY 427, 627.)

453, 653 THE SOCIOLOGY OF GENDER (3+0) 3 credits
Socialization to sex roles, effects of sex on personality, relations betw sexes in organizational and informal groups, sexual deviancy and tive sex roles. Prerequisite: SOC 101.

463, 663 SOCIAL PSYCHOLOGY III: SOCIAL PSYCHOLOGY EDUCATION (3+0) 3 credits
(See PSY 463 for description.)

464, 664 CONFORMITY AND DEVIATION (3+0) 3 credits
Systematic analysis of the sources of normative and nonnormative c The nature and types of social deviations, their causes, descripti consequences. Prerequisite: SOC 101.

480, 680 THE FAMILY (3+0) 3 credits
Forms and functions of the family as a social institution. Emph present trends. Prerequisite: SOC 101.

485, 685 SOCIOLOGY OF KNOWLEDGE (3+0) 3 credits
Reciprocal influence of social structure on personal perception and Prerequisite: SOC 101.

491, 691 HISTORY OF SOCIAL THOUGHT (3+0) 3 credits
Development of social and economic thought from prehistoric time period of the English and French Enlightenment. Prerequisite: SO

492, 692 CONTEMPORARY SOCIAL THEORY (3+0) 3 credits
Development of social theory from the Enlightenment to the prese Emphasis on recent developments in theory. Prerequisite: SOC 10

494 SOCIAL FOUNDATIONS OF ECONOMIC LIFE (3+0) 3 credits
Influence of noneconomic institutions on the productive relations of society. The family, the political community, religion and culture as they affect the economic structure of modern society.

497, 697 SPECIAL TOPICS 1 to 3 credits
Seminar on selected problems from the study of sociology. Maximum of 6 credits. Prerequisite: SOC 101.

499, 699 SPECIAL PROBLEMS IN SOCIOLOGY 1 to 3 credits
Maximum of 6 credits.

701 INDIVIDUAL READING 1 to 5 credits
Supervised reading with regular conferences between student and instructor. Maximum of 6 credits.

702 GRADUATE RESEARCH 1 to 5 credits
Research projects in sociology carried out under supervision. Maximum of 6 credits.

704 SEMINAR IN SOCIAL ORGANIZATION (3+0) 3 credits
Consideration of selected topics in social organization.

705 SEMINAR IN SOCIAL THEORY (3+0) 3 credits
Consideration of selected topics on sociological theory.

706 INTERMEDIATE STATISTICS I (3+0) 3 credits
(See PSY 706 for description.)

707 INTERMEDIATE STATISTICS II (3+0) 3 credits
(See PSY 707 for description.)

718 RESEARCH METHODS IN SOCIAL PSYCHOLOGY (3+0) 3 credits
(See PSY 718 for description.)

725 SOCIALIZATION (3+0) 3 credits
Social psychological approaches to the individual, including field theory, theories of balance and congruency, and other conceptual approaches to social perception, interpersonal attraction and stability of personality. (Same as PSY 725 .)

726 INTERPERSONAL TRANSACTIONS (3+0) 3 credits
Basic processes of social interaction including person perception, communication, attraction and power in social relationships. (Same as PSY 726.)

727 GROUP BEHAVIOR (3+0) 3 credits
Analysis of behavior in small and intermediate size groups, including organizational behavior and intergroup relations. (Same as PSY 727.)

728 COLLECTIVE BEHAVIOR AND MASS SOCIETY (3+0) 3 credits
Analysis of social behavior at the societal level, including attitude formation, mass communication, crowd behavior and social movements. (Same as PSY 728.)

737 SURVEY RESEARCH METHODS (3+0) 3 credits
Strategies and techniques of survey research, including planning, sampling, questionnaire construction, coding and data analysis. (Same as PSY 737.)

738 METHODS AND INNOVATIONS IN ASSESSMENT (3+0) 3 credits
(See PSY 738 for description.)

764 SPECIAL TOPICS IN SOCIAL PSYCHOLOGY (3+0) 3 credits
(See PSY 764 for description.)

795 COMPREHENSIVE EXAMINATION 0 credits *S/U only*

797 THESIS 1 to 6 credits

799 DISSERTATION 1 to 24 credits

Inactive Course
384 POPULATION (3+0) 3 credits

SPEECH COMMUNICATION (SPCM)

105-106, 205-206, 305-306, 405-406 INTERCOLLEGIATE FORENSICS (0+3) 1 credit each
Participation in intercollegiate debate and individual events as a member of the university debate squad, plus participation in related on-campus events. Does not fulfill requirements for a major in speech communication.

113 FUNDAMENTALS OF SPEECH COMMUNICATION (3+0) 3 credits
Principles and theories of speech communication. Participation in public speaking and interpersonal communication activities.

210 INTRODUCTION TO COMMUNICATION (3+0) 3 credits
Survey of theories of human communications; study of the nature of speech communication process.

212 INTRODUCTION TO COMMUNICATION RESEARCH (3+0) 3 credits
Basic approaches to research in speech communication. Introduction to historical, analytical, critical and empirical methods of investigation.

213 PUBLIC SPEAKING (3+0) 3 credits
Theory and practice in the composition and delivery of public speeches. Advanced techniques of message development, organization and style.

217 ARGUMENTATION AND DEBATE (3+0) 3 credits
Theory and practice of oral argumentative discourse; intensive study of argumentative principles and debate fundamentals; participation in class discussions, speeches and debates.

315 SMALL GROUP COMMUNICATION (3+0) 3 credits
Speech communication in face-to-face and coacting groups. Analysis of group cohesiveness, leadership, role structure, information processing and decision-making.

319 LEGAL ARGUMENTATION (3+0) 3 credits
Practice of argumentation theory in law, utilizing legal research, writing, and speaking; designed especially for the pre-law student.

329 BUSINESS AND PROFESSIONAL SPEAKING (3+0) 3 credits
Practice of the principles of public speaking, conference methods and group discussions which are applicable to the business and professional community.

410, 610 NONVERBAL COMMUNICATION (3+0) 3 credits
Principles, implications and effects of nonverbal communication, the ways in which unspoken elements modify communication.

411, 611 INTERPERSONAL COMMUNICATION (3+0) 3 credits
Investigation into the role of interpersonal communication in human relations.

412, 612 INTERCULTURAL COMMUNICATION (3+0) 3 credits
Factors important to meaningful communication across cultures with emphasis on intercultural differences in North America. Satisfies Capstone requirement in Core Curriculum.

427, 627 COMMUNICATION AND SOCIAL CHANGE (3+0) 3 credits
Critical review of theory and research.

428, 628 ORGANIZATIONAL COMMUNICATION (3+0) 3 credits
Analysis of communication functions and networks in organizational settings. Organizational structures and dynamics and their effect upon the communication process.

433, 633 HUMAN COMMUNICATION THEORY (3+0) 3 credits
Review and comparative analysis of contemporary behavioral theories of human communication.

434, 634 COMMUNICATION AND CONFLICT RESOLUTION (3+0) 3 credits
Theory and research in conflict and negotiation; emphasis on conflict management in interpersonal settings.

435, 635 PERSUASION (3+0) 3 credits
Contemporary theory and research in persuasive communication; role of speech communication in changing beliefs, attitudes, values, intentions, and behavior.

480, 680 COMMUNICATION TRAINING SYSTEMS (3+0) 3 credits
Development and evaluation of innovative speech communication training programs and classroom methods.

490, 690 SPECIAL PROBLEMS IN SPEECH COMMUNICATION
1 to 3 credits
Designed for students who wish to study in depth a particular area of general speech, rhetoric and public address or communication theory. Maximum of 6 credits.

495, 695 INDEPENDENT STUDY 1 to 3 credits
Open to juniors and seniors specializing in speech communication. Maximum of 8 credits.

700 RESEARCH METHODS (3+0) 3 credits
Research methodologies in speech communication. Prerequisite: undergraduate statistics course or CEP 440, 640.

710 SEMINAR: SMALL GROUP COMMUNICATION (3+0) 3 credits
Critical review of literature in problem-solving processes within the small group.

720 SEMINAR: INTERPERSONAL COMMUNICATION (3+0) 3 credits
Theory and research in one-to-one communication.

730 SEMINAR: ORGANIZATIONAL COMMUNICATION
(3+0) 3 credits
Communication behavior and the evaluation-decision process in human organizations.

740 SEMINAR: PUBLIC COMMUNICATION (3+0) 3 credits
History and critical analysis of rhetorical advocacy.

750 SEMINAR: PERSUASION (3+0) 3 credits
Literature on strategies and techniques of persuasive discourse.

760 SEMINAR: COMMUNICATION THEORY (3+0) 3 credits
Communication theory as it applies to the design, research and management of communication systems.

793 INDEPENDENT STUDY 1 to 3 credits
Maximum of 6 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

798 INTERNSHIP: APPLIED COMMUNICATION SYSTEMS
1 to 3 credits
Professional work experience in close association with selected executives—managers in education, business and governmental agencies. Maximum of 6 credits.

Inactive Courses
430, 630 MODERN THEORIES OF PUBLIC COMMUNICATION
(3+0) 3 credits

SPEECH PATHOLOGY AND AUDIOLOGY (SPA)

259 PHONETICS (3+0) 3 credits
Practical course in the science of speech sounds with emphasis on transcription of the International Phonetic Alphabet.

310 SPEECH AND LANGUAGE DEVELOPMENT (3+0) 3 credits
Traditional and psycholinguistic approaches to language and speech development in the individual.

320 INTRODUCTION TO GENERAL SEMANTICS (3+0) 3 credits
Emphasizes the distinctively human functions of creating and using symbols. Reveals the relationship of symbol systems and the bodily process of symbolizing experience to the development of language, psycholinguistics, personality and society. Prerequisite: SPA 310.

356 SURVEY OF SPEECH PATHOLOGY (3+0) 3 credits
Designed particularly for the classroom teacher. Stresses correction of minor speech problems and understanding of more involved disorders.

357 COMMUNICATION SCIENCE (3+0) 3 credits
Anatomical, neurological, physiological, and physical bases of speech and voice production.

359 ASSESSMENT OF COMMUNICATION DISORDERS
(1+0 per credit) 1 to 3 credits
Developmental, environmental, organic, and psychogenic bases of disorders of speech and voice. Prerequisite: SPA 259, 357.

360 METHODS OP CLINICAL MANAGEMENT (3+0) 3 credits
Therapy and clinical management of problems of defective speech. Includes clinical equipment and public school speech correction programs. Prerequisite: SPA 359.

361 ARTICULATION DISORDERS (2+3) 3 credits
Assessment and treatment of phonemic disorders.

362 INTRODUCTION TO AUDIOLOGY (3+0) 3 credits
Physics of sound, anatomy and physiology of the ear, medical and surgical aspects of hearing loss, basic audiometric techniques, and hearing conservation.

363 PRACTICUM IN SPEECH PATHOLOGY (0+6) 2 credits
Supervised clinic experience in the treatment and management of children and adults with speech and hearing defects. Prerequisite: SPA 259, 357, 359, 360. Maximum of 12 credits.

364 PREVENTION OF COMMUNICATIVE DISORDERS (3+6) 3 credits
Familiarization with developmental landmarks of communication, causes of communicative disorders, and application of methods for prevention and early intervention of communicative disorders.

365 ADVANCED AUDIOLOGICAL TESTING (3+0) 3 credits
Calibration of test equipment. Rationale and procedures used in the evaluation of hearing loss. Laboratory exercises. Prerequisite: SPA 362.

421 COMMUNICATION PROBLEMS OF THE AGED (3+0) 3 credits
Speech and hearing disorders common to the aged. Current methods of evaluation and treatment are considered.

459, 659 SEMINAR IN CLINICAL PROCEDURE (2+0) 2 credits
Advanced study in specialized areas of the field. Maximum of 8 credits.

460, 660 ASPECTS OF SPEECH PATHOLOGY AND AUDIOLOG
(1+0) 1 credit
Pathologies affecting the auditory and speech mechanisms including central nervous system involvement. Special emphasis on medical and surgical treatment and speech and language pathology from the physician's viewpoint.

461, 661 ADVANCED SPEECH PATHOLOGY (2+0) 2 credits
Diagnosis of speech disorders, with special emphasis on stuttering and allied problems and organic speech disorders.

463, 663 INTERNSHIP IN SPEECH PATHOLOGY AND AUDIOLOGY
(0+18 or 24) 6 or 8 credits
Clinical experience in the diagnosis and management of children and adults with speech or hearing defects. Experience to be gained in an off-campus rehabilitation program.

464, 664 PRACTICUM IN AUDIOLOGICAL TESTING
(0+3 or 6) 1 or 2 credits
Supervised clinical procedures in descriptive and diagnostic hearing examinations. May be repeated. Prerequisite: SPA 362, 365.

465, 665 MEDICAL AUDIOLOGY (3+0) 3 credits
Differential hearing tests and their interpretation from a medical and surgical viewpoint.

466, 666 REHABILITATION FOR HEARING HANDICAPPED
(3+0) 3 credits
Problems of adjustment and language involvement of the hearing handicapped. Use of amplification, auditory training, and lipreading principles. Prerequisite: SPA 310, 362.

467, 667 LANGUAGE DISORDERS IN CHILDREN (3+0) 3 credits
Conditions leading to delayed language in children. Emphasis on methods of teaching language. Prerequisite: SPA 310.

494 WORKSHOPS AND INSTITUTES 1 to 3 credits
Intensive study of special topics in speech pathology and audiology. Maximum of 6 credits.

495 INDEPENDENT STUDY 1 to 3 credits
Intensive study of special topics in speech pathology or audiology on an individual basis. Maximum of 6 credits.

720 INTRODUCTION TO GRADUATE STUDY (3+0) 3 credits
Research methods in the communicative arts and sciences.

721 CRANIOFACIAL DISORDERS (2+3) 3 credits
Causes and treatment of communicative disorders related to cleft palate and lip. The interdisciplinary team approach will be stressed.

751 DYSPHASIA (2+3) 3 credits
Language and speech disorders related to central nervous system deficits.

752 STUTTERING (2+3) 3 credits
Disorders of speech rhythm and fluency.

753 COMMUNICATION DISORDERS IN THE CEREBRAL PALSIED (3+0) 3 credits
Causes, assessment, and treatment of communicative disorders among the cerebral palsied.

754 SEMINAR IN PHYSICAL ANOMALIES (2+0) 2 credits
Anatomical and neurological deficits of the speech mechanism to include alaryngeal speech.

757 EXPERIMENTAL PHONETICS (3+0) 3 credits
Speech production and reception and the physical characteristics of speech and instrumentation for speech analysis.

759 SEMINAR IN CLINICAL PROCEDURES (2+0) 2 credits
Advanced study in specialized areas of the field. Maximum of 8 credits.

762 DISORDERS OF VOICE (2+3) 3 credits
Causes, diagnosis, and treatment of disorders of voice.

765 ADVANCED AUDIOLOGY (2+3) 3 credits
Calibration of test equipment. Rationale and procedures used in the evaluation of hearing loss. Laboratory exercises. Prerequisite: SPA 362.

767 ADVANCED PRACTICUM (0+6) 2 credits
Supervised clinical experience in the treatment and management of children and adults with complex communicative disorders.

768 SEMINAR IN AUDIOLOGY (3+0) 3 credits
Special topics; hearing aids, psychophysics of audition; current research and publications in clinical hearing measurement or rehabilitation. Maximum of 6 credits.

769 SEMINAR IN AUDIOLOGICAL MEASUREMENT (2+0) 2 credits
Special topics in the measurement of hearing, hearing aids, psychophysics of audition, and special tests.

793 INDEPENDENT STUDY 1 to 3 credits

794 WORKSHOPS AND INSTITUTES 1 to 3 credits
Intensive study of special topics in speech pathology or audiology. Usually offered during Summer Session. Maximum of 8 credits.

795 COMPREHENSIVE EXAMINATION 0 credit *S/U only*

797 THESIS 1 to 6 credits

SURGERY (SURG)

451, 651 CLERKSHIP (2+30)12 credits
Hospital and ambulatory clinical experience to develop knowledge (practical theoretical, basic science), technical and interpersonal skills basic to understanding pathophysiology and treatment of surgical diseases.

461, 661 ELECTIVES 2 to 8 credits
Elective experiences in the major surgical subspecialities including: (a) acute orthopedics, (b) anesthesiology, (c) burn surgery, (d) cardiothoracic surgery, (e) emergency room techniques, (f) acting internship in general surgery, (g) neurosurgery, (h) ophthalmology, (j) orthopedic surgery, (k) otorhinolatyngology, (m) plastic surgery, (q) trauma surgery, (r) urology, (s) thoracic surgery, (t) third-world medicine and surgery. Prerequisite: third- or fourth-year medical students. Maximum of 8 credits in any one subtopic. Maximum total credits for any combination of subtopics is 16.

490,690 INDEPENDENT STUDY 1 to 4 credits

TEXTILE AND APPAREL MERCHANDISING (TAM)

200 SPECIAL TOPICS 1 to 6 credits
Study under supervision of a staff member on topics of special interest to the learner. Maximum of 6 credits.

202 FIELD STUDY 1 to 3 credits *S/U only*
Student-faculty seminar including group travel for field study experience. Maximum of 6 credits.

210 APPAREL PRODUCT ANALYSIS (3+0) 3 credits
Recognition and evaluation of commercial construction techniques as related to garment cost, durability, and appearance. Prerequisite: TAM 216.

211 PATTERN DESIGN (1+4) 3 credits
Basic principles of pattern construction and design through a combination of draping and drafting techniques. Prerequisite: TAM 210.

212 TEXTILE, APPAREL, AND RETAIL INDUSTRIES (3+0) 3 credits
Structure, operation, and interrelationship of industries involved in the production, distribution, and merchandising of textile goods. Exploration of career opportunities.

216 TEXTILES (2+2) 3 credits
Consumer orientation to textiles. Serviceability, concepts of durability, care, comfort, and aesthetic appearance are used to evaluate textile alternatives for various end uses.

270 FIELD EXPERIENCE 1 to 3 credits *S/U only*
Coordinated work experience in the apparel/retail industry under direction of a faculty adviser. Prerequisite: TAM 210, 212, 216.

309 MUSEOLOGY (3+0) 3 credits
(See ANTH 309 for description.)

310 FASHION THEORY (1+0) 1 credit
Fashion theories, cycles, and influences. Prerequisite: SOC 101; PSY 101.

311 CLOTHING AS NON-VERBAL COMMUNICATION (1+0) 1 credit
Impact of clothing and appearance on social interaction. Prerequisite: SOC 101; PSY 101.

312 CLOTHING AESTHETICS (1+0) 1 credit
Application of elements and principles of design to clothing. Prerequisite: SOC 101; PSY 101.

315 HISTORIC COSTUMES AND TEXTILES (3+0) 3 credits
Textile fabrics and dress as they record the cultural, social and economic trends of significant design periods.

318 CREATIVE TEXTILES (2+2) 3 credits
Design of textiles structures using fibers, yarns and fabrics. Historical and traditional aspects studied in relation to potential in design of contemporary fabric forms.

375 PERSPECTIVES ON THE FAMILY'S NEAR ENVIRONMENT (3+0) 3 credits
Exploration of the family and its near environment. Focus on the relationship of design technology and environment to human behavior. Prerequisite: NUTR 121; PSY 101; SOC 101.

400, 600 SPECIAL PROBLEMS 1 to 10 credits
Individual study or research in fields of special interest. Maximum of 10 credits.

414 APPAREL RETAIL MANAGEMENT (3+0) 3 credits
Case study approach to managerial and marketing responsibilities in planning, purchasing, and controlling operations with emphasis on apparel retail environments. Prerequisite: MGRS 310, 312; TAM 212.

416, 616 ADVANCED TEXTILES (3+0) 3 credits
Advanced study of fabric performance and selection of textiles for specific end uses. Introduction to laboratory testing of fabrics. Prerequisite: TAM 216.

419, 619 CULTURAL, SOCIAL, AND PSYCHOLOGICAL ASPECTS OF DRESS (3+0) 3 credits
Exploration of dress as a communicator of the social, psychological and cultural aspects of society. Prerequisite: 6 credits of social science or human development.

470 PREPROFESSIONAL INTERNSHIP 3 credits *S/U only*
Managerial work experience in apparel or retail industry under the direction of a faculty adviser. Prerequisite: TAM 270, 414.

THEATRE (THTR)

100 INTRODUCTION TO THE THEATRE (3+0) 3 credits
Survey of the art and craft of the theatre including representative plays.

110 THEATRE: A CULTURAL CONTEXT (3+0) 3 credits
Exploration of cultural factors affecting the art of theatre from various historical periods and environments.

118 ORIENTATION TO PERFORMING THEATRE (3+0) 3 credits
Lecture, discussion, and performance encompassing the philosophy and techniques of interpretation, acting and directing. May not be taken for audit.

119 ORIENTATION TO TECHNICAL THEATRE (3+0) 3 credits
Lecture and discussion encompassing the philosophy and techniques of technical theatre.

121 STAGE MAKEUP (2+2) 3 credits
Specialized instruction in the theory and experience in the application of stage makeup as related to the visual impact of an actor on stage.

203, 403 NEVADA REPERTORY COMPANY 3 credits each *S/U only*
Performance and production of plays for the University Theatre season. Includes instruction and research relative to the selected program of plays. Since company assignments are announced after registration the student may enroll in the semester following participation. Maximum of 9 credits each. May not be taken for audit.

219-220 PROJECTS IN TECHNICAL THEATRE (3+0) 3 credits each
Specialized instruction in the theory and practice of such areas as scenery, lighting, sound properties and costuming. Prerequisite: THTR 119.

221 INTERPRETATION (3+0) 3 credits
Oral interpretation of the forms of literature. Lectures and performance.

230 DESIGN AESTHETICS AND DRAFTING FOR THE THEATRE (3+0) 3 credits
Fundamentals of visual composition, design theory and drafting techniques for the stage.

240 INTRODUCTION TO COSTUMING (3+0) 3 credits
Practical applications of construction and planning techniques involved in costuming a theatre production.

250-251, 350-351 LABORATORY THEATRE: ACTING (2+3) 3 credits each
Lectures and discussion providing fundamentals for laboratory workshops. Prerequisite: THTR 118. May not be taken for audit.

260 THEATRE SPEECH (3+0) 3 credits
Practice in using the actor's voice.

321 ADVANCED INTERPRETATION (3+0) 3 credits
Advanced techniques of oral expression. Prerequisite: THTR 221.

330 STAGE LIGHTING (3+0) 3 credits
Theory and practice of lighting design and control. Prerequisite: THTR 230.

339 LIGHTING PRACTICUM (0+3 per credit) 1 to 3 credits
Practical experience as lighting designer in a production situation; creating the design, coordinating its execution and creating light cues. Maximum of 6 credits.

340 STAGE COSTUMING (3+0) 3 credits
Theory and practice of drafting historic and modern costumes for the stage.

349 COSTUMING PRACTICUM (0+3 per credit) 1 to 3 credits
Specialized study related to construction of garments, building of accessories, shop management and/or maintenance of wardrobe in theory and practice. Maximum of 6 credits.

360 EXPERIMENTAL THEATRE (3+0) 3 credits
Concentrates on specific areas of contemporary theatre practice, such as mime, improvisations, mixed media, musical theatre, etc. Specific content announced in advance. Maximum of 6 credits.

370 TOURING THEATRE 1 to 3 credits *S/U only*
Intensive road experience in planning for and rehearsing, setting up, performing and striking productions in various locations and for a variety of audiences. Maximum of 6 credits.

409 SCENERY PRACTICUM (0+3 per credit) 1 to 3 credits
Practical experience as scene designer or technical director in an actual production situation. Maximum of 6 credits.

419 SCENIC DESIGN (3+0) 3 credits
Art of scenic interpretation through play analysis; rendering, color, style, ground plans, construction plans; research in history of design and period styles. Prerequisite: THTR 230.

421, 621 READERS THEATRE (3+0) 3 credits
Preparation and performance of literary selections for a theatrical environment.

431-432, 631-632 CHILDREN'S THEATRE (2+3) 3 credits
Laboratory and conference course offering practical experience in a children's theatre.

440 COSTUME DESIGN AND RENDERING (3+0) 3 credits
Art and theory of costume interpretation through play analysis, research in history of design and period style and rendering.

450, 650 THEORIES AND STYLES OF ACTING (3+0) 3 credits
Practice in period acting styles. Prerequisite: THTR 118. May not be taken for audit.

452-453, 652-653 LABORATORY THEATRE: PLAYWRITING (2+3) 3 credits each
Lectures and discussion to provide fundamentals for laboratory workshop.

454-455, 654-655 LABORATORY THEATRE: DIRECTING (2+3) 3 credits each
Lectures and discussion providing fundamentals for laboratory workshops. Prerequisite: 2 semesters of Laboratory Theatre: Acting. May not be taken for audit.

471, 671 HISTORY OF THEATRE I (3+0) 3 credits
Development of theatrical art from its beginning to 1642.

472, 672 HISTORY OF THEATRE II (3+0) 3 credits
Development of theatrical art from 1642 to present.

473, 673 SEMINAR IN THEATRICAL PERIODS (3+0) 3 credits
Intensive study into a specific historical period or significant movement, subject to be listed in class schedule. Maximum of 6 credits.

474, 674 THEATRE FIELD STUDY 1 to 3 credits
Student-faculty seminar including group travel to theatre centers within the U.S. and abroad for field study experience. Maximum of 6 credits.

495, 695 INDEPENDENT STUDY 1 to 3 credits
Open to juniors and seniors specializing in theatre. Maximum of 8 credits.

Inactive Courses
700 RESEARCH METHODS (3+0) 3 credits
719 SEMINAR: TECHNICAL THEATRE (3+0) 3 credits

721 SEMINAR: ORAL INTERPRETATION (3+0) 3 credits
729 THEATRE CRITICISM AND AESTHETICS (3+0) 3 credits
792 SPECIAL PROJECTS IN THEATRE (3+0) 3 credits

VETERINARY MEDICINE (V M)

100 VETERINARY MEDICINE (1+0) 1 credit
An orientation course limited to students intending to pursue veterinary medicine as a career.

413, 613 ANATOMY OF LARGE ANIMALS (2+6) 4 credits
Comparative study of the anatomy of the skeletal, articular, muscular, digestive, urinary, reproductive, endocrine, nervous, circulatory, integumentary, and sensory systems of domestic animals. Prerequisite: BIOL 191.

485 SPECIAL TOPICS (1 to 3+0) 1 to 3 credits
Review of recent research, innovations and development in the area of animal health and disease control. Maximum of 6 credits.

793 INDEPENDENT STUDY 1 to 6 credits
Intensive study of a special problem in molecular biology as it relates to veterinary medicine or related disciplines.

WESTERN TRADITION (W T)

201 FOUNDATIONS OF WESTERN CULTURE (3+0) 3 credits
Introduction to Greek, Roman and Judeo-Christian traditions through the Middle Ages. Prerequisite: ENGL 102.

202 THE MODERN WORLD (3+0) 3 credits
Intellectual, literary and political history of Europe from Renaissance to present. Prerequisite: W T 201.

203 THE AMERICAN EXPERIENCE AND CONSTITUTIONAL CHANGE (3+0) 3 credits
Emphasis on the origins of the U.S. and Nevada Constitutions and issues such as equality and civil rights; individualism and civil liberties; federalism; environmentalism; urbanization and industrialization; and religious and cultural diversity. Prerequisite: W T 201. Satisfies the U.S. and Nevada constitution requirements.

WOMEN'S STUDIES (W S)

101 INTRODUCTION TO WOMEN'S STUDIES (3+0) 3 credits
Interdisciplinary analysis of women in culture and society from historical and cross-cultural perspectives.

250 MEN AND MASCULINITIES (3+0) 3 credits
Interdisciplinary analysis of historical and comparative male gender roles. Race, culture, social class, sexual orientation, and ot her dimensions among men.

297 SPECIAL TOPICS 1 to 3 credits
Topics of current interest not incorporated in regular offerings. Maximum of 4 credits.

430 GENDER, LITERATURE AND THE ARTS (3+0) 3 credits
Examines cultural representations of gender and gender relations through world literatures, musical traditions, and fine and applied arts. Team-taught by faculty in women's studies and the humanities.

440 GENDER, SCIENCE AND TECHNOLOGY (3+0) 3 credits
Examines gender bias in science, the impact of new technologies on gender roles, and biology and gender.

450 FEMINIST THEORY AND METHODS (3+0) 3 credits
Survey of contemporary theory and method in women's studies. Examines practical and philosophical issues in feminist thought on the construction and significance of gender difference.

490 INDEPENDENT STUDY 1 to 3 credits
Supervised reading and research open to women's studies minors. Prerequisite: W S 101. Maximum of 6 credits.

497 SPECIAL TOPICS 1 to 3 credits
Topics of current interest not incorporated in regular offerings. Maximum of 4 credits.

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Campus Buildings and Names

Anderson Medical Sciences
Fred M. Anderson, M.D., (1906-), Reno physician and surgeon, member of the Board of Regents, 1956-1978. Anderson was instrumental in helping establish the School of Medicine.

Edna S. Brigham Clinical Education Building/ Family Medicine Center
Edna S. Brigham, director of the University and Community College System of Nevada Endowment and formerly development officer at the School of Medicine from 1976 to 1983. The building was dedicated in 1986.

Robert Cashell Field House
Robert A. Cashell, northern Nevada businessman active in many community organizations; Honorary Alumnus (1976); member of the Board of Regents (1979-1982); lieutenant governor for the state of Nevada (1983-1987); Distinguished Nevadan Award (1988).

Church Fine Arts Complex
James Edward Church (1869-1959), professor of Latin, German, classical art and history, 1892-1959. Developed the first snow surveying techniques, which led to the science of evaluating regional water storage. Also developed system of analyzing avalanche hazards. Brought worldwide scientific honor to the University of Nevada. The building was remodeled and expanded in 1986.

Clark Administration
Alice McManus Clark, native Nevadan, wife of William A. Clark, Jr., son of a Montana senator who built railroads in southern Nevada. Mrs. Clark gave several scholarships to the university. After her death, her husband donated the Clark Library in her name (1926). This building was the cultural and research center of the university for more than three decades until the library moved to its present location in 1962.

Fleischmann Agriculture (Fleischmann College of Agriculture)

Fleischmann Greenhouse

Fleischmann Life Science
(See also: Fleischmann Planetarium and Sarah H. Fleischmann Building) *Max C. Fleischmann* (1877-1951), Nevada philanthropist, food industry millionaire (Standard Brands), benefactor of the university with gifts of land, scholarships and endowments. From the Max C. Fleischmann Foundation established by Fleischmann for the purpose of distributing his wealth, came the funds to construct the College of Agriculture and former School of Home Economics, and later, the life science wing of the agriculture building. The Fleischmann Foundation contributed further monies to the university in gifts, scholarships and assistance in establishing the Computing Center, Laboratory in Environmental Patho-Physiology, Fleischmann Planetarium, Desert Research Institute, the Water Resources Building and the Judicial College Building.

Fleischmann Planetarium (Charles and Henriette Fleischmann Planetarium) Named for the parents of Max C. Fleischmann.

Frandsen Humanities (Formerly Agriculture Building)
Named for Peter Frandsen, (1876-1967) founder of the biology department; professor of biology, zoology, embryology, anatomy, bacteriology, 1900-1942.

Getchell Library
Noble H. Getchell (1875-1960), Nevada mining man, state senator.

Hartman Hall
Leon W. Hartman (1876-1943), professor of physics, 1908-1938; president of the University of Nevada, 1938-1943.

Howard Medical Sciences
Claude I. Howard, Las Vegas businessman and major benefactor of the School of Medicine; credited with enabling the medical program to develop into an accredited four-year medical school. Named a Distinguished Nevadan in 1979; awarded an Honorary Degree in 1982. The building was dedicated in 1982.

Jones Visitor Center
Clarence K. and Martha H. Jones provided an endowment that preserved the Old Journalism Building, constructed in 1914 as the University of Nevada Library and dedicated in 1983 as the Visitor Center. Jones is an investment counselor and former Reno newspaper executive. He was named a Distinguished Nevadan in 1977. Martha, the former Martha Washington Hansen, received the President's Medal in 1985.

Jot Travis Student Union
Ezra "Jot" Travis, early western stagecoach manager. His son, Wesley E. Travis, born in Hamilton, Nev., bequeathed funds to the university (1952) for a student facility to be named for his father.

Knudtsen Resources Center
Molly Flagg Knudtsen, ranch owner near Austin, Nev.; member of the Board of Regents for 18 years (1960-1972 and 1974-1980). Born in New York, Mrs. Knudtsen came to Nevada in 1942; wrote about central Nevada ranches in her book "Here is Our Valley"; and has had her work published in several journals under the name of Molly Magee.

Lawlor Events Center
Glenn "Jake" Lawlor (1907-1980), one of the University of Nevada, Reno's best-known athletes and coaches. He played and coached football, basketball, tennis, golf, baseball and track. Lawlor was also the university's athletic director (1959-1970).

Laxalt Mineral Engineering Center
Paul D. Laxalt (1922-), governor of the state of Nevada, 1967-1971; U.S. senator, 1974-1987.

Leifson Physics
Sigmund W. Leifson (1897-1984), professor of physics, 1925-1963; chairman of the physics department, 1938-1963. Nationally recognized nuclear physicist; pioneer in the theory of atomic energy.

Lincoln Hall
Abraham Lincoln (1809-1865), 16th president of the United States.

Lombardi Recreation
Louis E. Lombardi, M.D. (1907-1990), Reno physician and surgeon; member of the Board of Regents, 1951-1980.

Mack Social Science
Effie Mona Mack (1888-1969), Nevada historian and educator; university benefactor.

Mackay Mines
Mackay Stadium
John W. Mackay (1831-1902), one of the "Big Four" successful mining men of the bonanza days on the Comstock, Virginia City, Nev. Buildings, land and endowments were presented to the university in his honor by his widow, Marie Louise, and son, Clarence H. Mackay.

Mackay Science (Mackay Science Hall)
Clarence H. Mackay (1874-1938), New York financier, son of John W. Mackay (see above). Mackay Science Hall, dedicated in 1930, was one of numerous gifts made to the university by Clarence H. Mackay. Each spring, Mackay Day, named in his honor, is celebrated.

Manville Medical Sciences
H. Edward Manville, Jr. (1906-1984), industrialist, philanthropist, civic leader, former chairman of the School of Medicine Advisory Board. His estate provided the school with $1 million to establish the H. Edward Manville endowed professor in internal medicine.

Morrill Hall
Named for the Morrill Land Grant Act of 1862 after *Justin S. Morrill* (1810-1898), U.S. senator from Vermont. The act established the system of land-grant colleges, including, in 1864, the University of Nevada. Completed in 1886, Morrill Hall was the first building erected on the university's Reno campus. Until 1889 it *was* the University of Nevada.

John E. Nellor Biomedical Sciences Research Building
Named for *John E. Nellor*, Graduate School dean and research professor of biology, emeritus. Dr. Nellor was instrumental in providing adequate facilities for animal care.

Nye Hall
Named for Nye County, Nevada, after *James W. Nye* (1814-1876), Nevada territorial governor, 1861-1864; U.S. senator from Nevada, 1864-1873.

Orvis School of Nursing
Arthur E. Orvis (1888-1965), Nevada adoptive resident, who, with his wife, Mrs. Mae Zenke Orvis, contributed sizable cash sums to the university, making possible the construction (1965-1966) of the School of Nursing.

Palmer Engineering
Stanley G. Palmer (1887-1975), professor of electrical engineering, 1915-1941; dean of the College of Engineering, 1941-1957.

Donald W. Reynolds School of Journalism and Center for Advanced Media Studies
Named for *Donald W. Reynolds*, key contributor to journalism education in the state of Nevada. His Donald W. Reynolds Foundation Inc., provided grants to support the University of Nevada, Reno, School of Journalism. A pioneer of the American communications industry, Reynolds is founder of the Donrey Media Group.

Ross Hall
Silas E. Ross (1887-1975), professor of chemistry, 1909-1914; Reno mortician; member of the Board of Regents, 1932-1956.

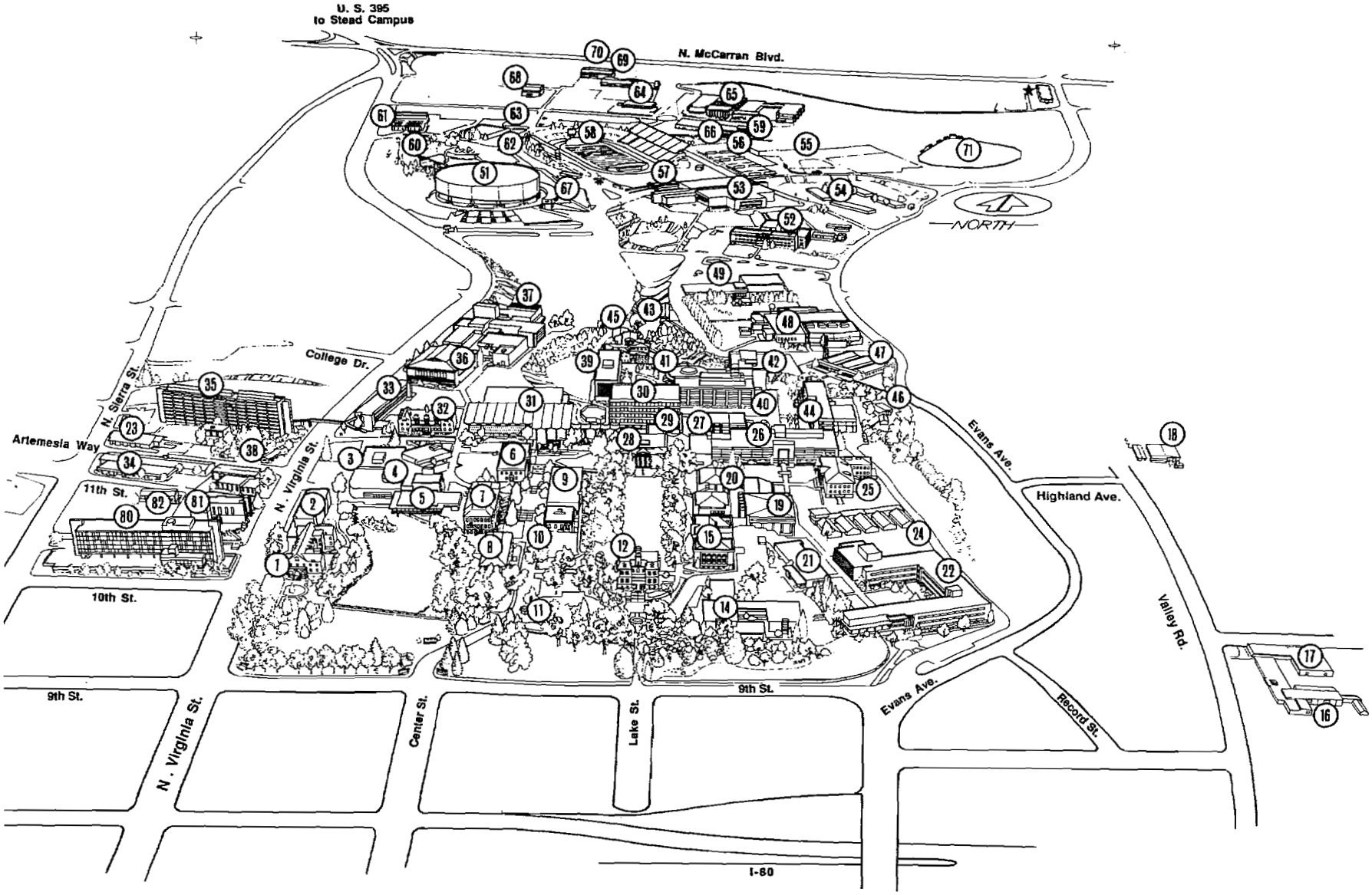
Sarah H. Fleischmann Building
Named for Mrs. Max C. Fleischmann.

Savitt Medical Library
Savitt Medical Sciences
Sol (1898-1981) *and Ella Savitt*, former owners of Sierra News Co. in Reno; longtime university supporters with contributions to the School of Medicine, the medical library, University of Nevada, Reno athletics, the journalism department and various scholarship funds. They were named Distinguished Nevadans in 1977. The building was dedicated in 1977.

Scrugham Engineering-Mines
James G. Scrugham (1880-1945), professor of mechanical engineering, 1903-1914; first dean of the College of Engineering, 1914-1916; state engineer; governor of Nevada, 1923-1925; representative in U.S. Congress, 1933-1942; U.S. senator, 1942-1945; newspaper editor; historian.

Thompson Student Services Center (formerly Education Building)
Reuben C. Thompson (1878-1951), professor of ancient languages, literature and philosophy, 1908-1939; founded department of philosophy; dean of men, 1932-1939.

Main Campus


U. S. 395
to Stead Campus
N. McCarran Blvd.
NORTH
College Dr.
N. Sierra St.
Artemesia Way
11th St.
10th St.
9th St.
N. Virginia St.
Center St.
Lake St.
Evans Ave.
Highland Ave.
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Numerical List

1.	MAH	Manzanita Hall
2.	JH	Juniper Hall
2.	HS	Health Service
3.	B	Bookstore
4.	JTU	Jot Travis Student Union
5.	DC	Dining Commons
6.	TSS	Thompson Student Serv.
7.	FH	Frandsen Humanities
8.	CA	Clark Administration
9.	RH	Ross Hall
10.	JVC	Jones Visitor Center
11.	IK	Information Kiosk
12.	MH	Morrill Hall
14.	SF	Sarah H. Fleischmann Building
15.	MS	Mackay Science
16.	AE	Agri. Education and 4-H
17.	KRC	Knudtsen Resource Center
18.	EC	Equestrian Center
19.	LMR	Paul Laxalt Minerals Research Center
20.	LME	Paul Laxalt Mineral Engineering Center
21.	OSN	Orvis School of Nursing
22.	FA	Fleischmann Agriculture
23.	PO	Post Office
24.	FG	Fleischmann Greenhouse
25.	PE	Palmer Engineering
26.	SEM	Scrugham Engineering-Mines
27.	CHP	Central Heating Plant
28.	MM	Mackay Mines
29.	PP	Physical Plant
30.	BB	Business Building
31.	GL	Getchell Library
32.	LH	Lincoln Hall
33.	WPH	White Pine Hall
34.	AB	Artemesia Building
35.	NH	Nye Hall
36.	G	Gymnasium
37.	CFA	Church Fine Arts Complex
38.	WC	Women's Center
39.	MSS	Mack Social Science
40.	CB	Chemistry Building
41.	LB	Lecture Building
42.	LP	Leifson Physics
43.	HH	Hartman Hall
44.	EL	Engineering Laboratory
45.	RSJ	Reynolds School of Journalism
46.	PS	Public Safety
47.	BG	Buildings & Grounds Office & Shops
48.	EB	Education Building
49.	JC	Judicial College
51.	LEC	Lawlor Events Center
52.	—	U.S. Bureau of Mines
53.	LR	Lombardi Recreation
54.	UV	University Village
55.	—	Football Practice Field
56.	—	Tennis Courts
57.	—	Robert Cashell Field House
58.	S	Mackay Stadium
59.	SP	Speech Pathology & Audiology, Student Health
60.	FP	Fleischmann Planetarium
61.	—	Nevada Historical Society
62.	CC	Computing Center
63.	ERF	Environmental Research Facility
64.	—	Health Lab., State of Nevada
65.	M	School of Medicine
		Anderson Health
		Howard Medical Sciences
		Manville Health
		Savitt Medical Sciences
		Phase IV Addition
66.	FMC	Family Medicine Center (Brigham Building)
67.	LA	Lawlor Annex (Intercollegiate Athletics)
68.	USC	Central Services
★	UNS	Claude Howard System Administration Building
69.	MP	Motor Pool
70.	ST	Storage
71.	WPF	William Peccole Field
80.	CI	College Inn
81.	MB	Midby Byron (Judicial Education Center)
82.	CCC	Child Care Center

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Nevada's Prestige

- U.S. News and World Report surveyed 2,425 colleges and universities for the magazine's hottes annual issue, "America's Best Colleges." Nevada ranked in the elite top 10 percent of 1992's best anc rated the state's only listing.

- Nevada is the state's only university ranked "Class 1" by the American Association of Universit Professors as a full-blown research institution alongside such distinguished company as Berkeley, Ca Tech, University of Michigan, University of Wisconsin, University of Washington and others.

- Nevada's sponsored research, training, and public service funds have tripled since the mid-1980s anc are projected to top $41 million by mid-1992.

- Nevada's Reynolds School of Journalism has four Pulitzer Prize winners.
  Stanford has five.

- The Wall Street Journal reports that the Mackay School of Mines is "said to be among the best half doze in the country."

- In 1990 and 1991, Nevada grads with bachelor's degrees in electrical and civil engineering receive higher salary offers than their Stanford counterparts.
  Nevada tuition: under 15 *hundred* dollars. Stanford: over 15 *thousand* dollars.

- Ninety-four percent of Nevada's tenured faculty and 88 percent of its full-time faculty hold the highes degrees attainable in their fields.

- Last year, 85 Nevada high school seniors were named Presidential Scholars after scoring in the top percent nationally on college entrance exams. Aggressively recruited by universities nationwide, 2 of the best and brightest, almost 30 percent, chose Nevada. No other university in the state or natio attracted more than 10 percent of these top scholars *except* Nevada.

- The CBS Radio network has broadcast Nevada's concert choir nationwide on "Cavalcade of Christma Music" for 12 years – more than any university choir in the United States.


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