

# Courses of Instruction (1995-1996)

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Courses offered during the academic year covered by this catalog will be selected from those described on the following pages. The course number is shown to the left of the title. The significance of the four digit numbering system is:

First digit

- 0 indicates that the course does not carry degree credit
- 1 courses of freshman level or beginning courses
- 2 sophomore level, not open to freshmen
- 3 junior-senior level courses, not open to freshmen or, generally, to sophomores
- 4 junior-senior level courses which may be taken for graduate credit under certain circumstances, not open to freshmen or sophomores
- 6 -graduate courses, open to students registered in the Graduate School only.

Departmental Permission is also required in each case.

Second digit

Many areas use the second digit to designate sub-areas within their areas. Otherwise the second digit has no significance.

Third digit

The third digit has no specific meaning except when it is the figure nine. A nine as the third digit means that the course content varies from semester to semester.

Fourth digit

The fourth digit has no specific significance unless it is the figure nine. A nine as the fourth digit indicates that the course is conducted on an honors level. A student with less than 60 semester hours credit may not register for courses numbered 3000 or above. In addition to regular course requirements, graduate students who enroll in 4000-level graduate credit courses will be expected to complete other work assigned by the instructor. Courses numbered 6000 or above are open to graduate students only and require permission of the department offering the course before a student may enroll. Shown on the same line with the title is the designation of the credit hours which the course carries. The credit hour value is generally based on the number of class hours per week. One hour of classroom work per week is usually valued at one credit hour. Some departments give one credit hour for two hours of laboratory work per week while some require three or more hours of laboratory work for one credit hour. Normally, if the course consists solely of lecture, or lecture-discussion type meetings, the number of meetings per week will be the same as the credit hours given for the course and no statement is made as to the type or number of meetings per week. In other situations the type and number of meetings is usually stated.

## Arts & Sciences

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- A&S 1100 French Culture and Civilization** 3 cr.  
A study of the political, social, and cultural institutions in France, with an emphasis on contemporary civilization.
- A&S 1110 Spanish Culture and Civilization** 3 cr.  
An introduction to the history, art, geography, social organization, and philosophers of Spain.
- A&S 1119 Structures of Western Thought: Ancient Greece** 3 cr.  
Prerequisite: concurrent registration in ENGL 1159 or 2279. A study of central features of ancient Greek culture: literature, philosophy, art, and science.
- A&S 2219 Biblical Foundations of Western Thought** 3 cr.  
The formation of biblical thought, stressing both the historical and cultural background which gave rise to the distinctively Biblical insights into the human condition and the reasons why these have had such lasting influence on Western society.
- A&S 2229 The Renaissance** 3 cr.  
Studies in different aspects of the renaissance(s) in Western Europe during the fourteenth, fifteenth, and sixteenth centuries.
- A&S 2310 Rise of the West: the Middle Ages** 3 cr.  
Study of the principal social and cultural events of the Middle Ages as contributions to the formation of Western Civilization.
- A&S 2410 Search for Order: Renaissance Reformation Enlightenment** 3 cr.  
Study of the principal social and cultural movements between 1300 and 1800.
- A&S 2429 Age of the Enlightenment** 3 cr.  
Studies in different aspects of the Eighteenth Century Enlightenment.
- A&S 2529 The Nineteenth Century** 3 cr.  
Studies in different aspects of the romantic and revolutionary movements of the nineteenth century.
- A&S 2899 Twentieth Century Issues** 3 cr.  
The topic varies from semester to semester. The course may be repeated once for credit.
- A&S 2900 European Civilization: Field-Based Learning** 3 cr.  
Students live and work in a European country, study the language, culture, and history of the country, and analyze the distinctive social practices to be found. Intensive and reflective interaction with the host population is stressed. May be repeated for credit.

with consent of the Director of the Honors Program. Students should have previous experience with the language of the host country. This course is not to be used for independent study.

**A&S 2999 Forms of Inquiry** 1 cr.  
Introduction to various disciplinary perspectives, the current problems, theoretical underpinnings, and methods of procedure that direct diverse forms of inquiry. Scholars from the various departments will display their fields of study while addressing a common theme. May be repeated for up to three credit hours.

**A&S 3099 The Honors Colloquium** 3 cr.  
Prerequisites: junior or senior standing and recommendation of a professor or student's dean. The subject varies. Course may be repeated once for credit.

**A&S 3110 The End of the Past: Nineteenth Century** 3 cr.  
Study of the principal social and cultural movements between the French Revolution and World War I.

**A&S 3595 Academic Year Abroad: European Perspectives of America** 3 cr.  
A study of historical and current European views of American culture as presented in the creative arts, literature, and political writings, and scholarly analyses. This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.

**A&S 3599 Natural Science** 3 cr.  
Prerequisites: Junior or senior standing and completion of a one-year course in physical science and one in biological sciences, at least one with laboratory. Selective problems illustrative of developing concepts of the natural and physical universe and of living organisms. Readings, discussions, papers.

**A&S 3999 Senior Honors Thesis** 3 cr.  
Admission by consent of the Director of the General Studies Degree Program and the Director of the University Honors Program. Directed research culminating in a written thesis to meet the requirements for graduation with University Honors or Honors in General Studies. May be repeated once for a total of six hours credit.

## Arts Administration

**AADM 6501 Development Strategies for Arts Organizations** 3 cr.  
Prerequisite: Consent of the program coordinator. A study of development and fund raising strategies and techniques for nonprofit arts organizations. Topics include financial management and planning; federal, state, and local grants; foundation grants; corporate support; annual fund drives and special events; capital campaigns and deferred giving. Special problems and opportunities in development are explored through case studies and projects with local arts organizations.

**AADM 6502 Arts Administration: Legal and Business Applications** 3 cr.  
Prerequisite: consent of program coordinator. The study of several areas of law and business as they apply to the administration of the artistic institution. The subjects covered include government regulations, contracts, taxes, and insurance. This seminar is designed to examine the management of art galleries, theaters, and concert halls with an application of these legal and business considerations. Limited internship or observation opportunity in an arts organization.

**AADM 6503 Marketing the Arts** 3 cr.  
Prerequisite: consent of the program coordinator. Application of marketing techniques to nonprofit and commercial arts organizations and products. Topics include special principles in marketing

the arts, the marketing audit and marketing plan, market research and target marketing, direct mail and telemarketing, and applications to both visual and performing arts organizations. Special problems in marketing are explored through case studies and projects with local arts organizations.

**AADM 6900 Practicum in Arts Administration** 1-3 cr.  
Prerequisite: consent of department. Supervised experience in various fields of Arts Administration. Amount of credit to be stated at the time of registration. May be repeated for a total of up to six hours.

**AADM 6990 Internship in Arts Administration** 6 cr.  
Prerequisites: enrollment in the master's program in Arts Administration and satisfactory completion of comprehensive examination. A supervised program for students completing the degree in Arts Administration in which participants gain experience in most aspects of the management of an arts institution ranging from ticket sales to contract negotiations. Objectives are set and evaluation is accomplished jointly by the program coordinator, the student, and the on-site supervisor. A research report on the internship is required.

**AADM 7040 Examination or Report Only No credit** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.

## Accounting

**ACCT 2100 Principles of Accounting** 3 cr.  
Offered each semester. Not open to students in remedial English or remedial mathematics. Not open to freshmen. An introduction to the accounting model and financial statement preparation with emphasis on the concepts and terminology needed to understand a typical corporate report. Topics covered include: current and long-term assets current and longterm liabilities, stockholders' equity, revenues and expenses.

**ACCT 2130 Management Accounting** 3 cr.  
Offered each semester. Prerequisite: ACCT 2100. Not open to freshmen. Not for credit toward a degree in Accounting. A study of the accounting process of the firm and its role in managerial planning, control, and decision-making; analysis and interpretation of financial statements.

**ACCT 3122 Intermediate Accounting II** 3 cr.  
Offered each semester. Prerequisite: completion of ACCT 3121 with a grade of C or better. A study of financial accounting with emphasis on the liability and owner's equity sections of the balance sheet and the statement of cash flow.

**ACCT 3123 Advanced Financial Accounting** 3 cr.  
Offered each semester. Not open to freshmen. Prerequisite: Accounting 3122 with a grade of C or better and Accounting 3120. Financial accounting theory, concepts, methodology, and structure. Topics covered will include partnerships, business combinations, consolidations, and SEC reporting problems.

**ACCT 3131 Cost Accounting I** 3 cr.  
Offered each semester. Prerequisite: six hours of accounting. An introduction to the development and use of accounting information for internal business decisions. Topics include: cost terminology and classifications, methods of cost accumulation and analysis, budgets and standard costs, cost-volume-profit relationships, and other accounting fundamentals for production, marketing, and financing decisions.

- ACCT 3152 Tax Accounting I** 3 cr.  
Offered each semester. Prerequisite: six hours of accounting. A comprehensive study of federal income tax concepts for the development of income and related deductions. The impact of tax considerations in business decisions.
- ACCT 3191 Independent Study** 1 cr.  
Offered each semester. Prerequisite: approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The student should refer to the COLLEGE OF BUSINESS ADMINISTRATION POLICY ON UNDERGRADUATE DIRECTED INDIVIDUAL STUDY available in the Accounting Department. The course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and research paper are required. May be repeated for up to six hours credit.
- ACCT 3192 Independent Study** 1 cr.  
Offered each semester. Prerequisite: approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The student should refer to the COLLEGE OF BUSINESS ADMINISTRATION POLICY ON UNDERGRADUATE DIRECTED INDIVIDUAL STUDY available in the Accounting Department. The course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and research paper are required. May be repeated for up to six hours credit.
- ACCT 3193 Independent Study** 1 cr.  
Offered each semester. Prerequisite: approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The student should refer to the COLLEGE OF BUSINESS ADMINISTRATION POLICY ON UNDERGRADUATE DIRECTED INDIVIDUAL STUDY available in the Accounting Department. The course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and research paper are required. May be repeated for up to six hours credit.
- ACCT 3194 Independent Study** 3 cr.  
Offered each semester. Approval of specialized study is required prior to the first day of registration by the supervising professor, department chairman, and college dean. Reading, conferences, and reports under the direction of a member of the accounting faculty.
- ACCT 3999 Senior Honors Thesis** 1-6 cr.  
Offered each semester. This course is open to Honors Students only, with admission by approval of the Directors of the Honors Program in Accounting and the University Honors Program. The course may be repeated for credit for a total of six credit hours until a thesis is accepted following oral defense.
- ACCT 4132 Cost Accounting II** 3 cr.  
Prerequisite: ACCT 3131. Advanced work in the development and use of accounting information for internal business decisions. Topics include: structure of managerial accounting theory; cost classifications and methods of cost estimation; decision models; standards and control; accounting information for production, marketing, and financing decisions.
- ACCT 4152 Tax Accounting II** 3 cr.  
Offered each semester. Prerequisite: Accounting 3152 or equivalent. Research methods in taxation. Intensive treatment of tax problems of partnerships, corporations, and fiduciaries. Study of federal estate and gift taxes.
- ACCT 4153 Individual Tax Planning** 3 cr.  
Prerequisite: Accounting 3152 or consent of department. Exploration of those areas most productive of tax saving opportunities for the individual. Timing of reporting income and deduction and the use of various tax-saving legal instruments will be covered.
- ACCT 4171 Survey of Governmental and Institutional Accounting** 3 cr.  
A study of internal budgeting and reporting systems, techniques of measurement and data collection, and preparation of financial statements for governmental bodies and non-profit organizations. A computer project, which entails the use of a spreadsheet, is required. Not open to accounting majors. For students with little or no previous work in accounting.
- ACCT 4180 Oil and Gas Industry: Accounting Problems** 3 cr.  
Prerequisite: six hours of accounting or consent of department. A study of current reporting practices and problems associated with accounting in the oil and gas industry. A review of the industry reporting requirements to state agencies, federal agencies, economic interest holders from both the operator and nonoperator points of view, as well as general purpose financial statements.
- ACCT 4190 Contemporary Accounting Topics** 3 cr.  
Prerequisite: consent of department. A study in depth of one or more subjects currently of concern in the field of accounting. May be repeated for credit when the topics vary. No more than six semester hours of credit will be allowed.
- ACCT 4195 Internship in Internal Auditing** 1-3 cr.  
Prerequisite: Accounting 4163 and consent of department. (Pass/Fail) At least ten hours per week of learning experience under the general supervision of a faculty member and direct supervision of a professional internal audit manager or director. Students desiring to take this course should apply a semester in advance since enrollment is limited by the internships available. Pass/Fail grading is based on a written report by the professional supervisor, a written report by the student, and the faculty member's evaluation. Accounting majors cannot use this course as an accounting elective for degree credit. This course is not open for graduate credit. Section number will correspond with credit to be earned. This course may be repeated for a total of three hours of credit.
- ACCT 6125 Studies in Accounting Theory** 3 cr.  
Prerequisites: Accounting 2121 and 3122. A study of underlying concepts of financial accounting with application to problem areas. Critical analysis of current pronouncements on accounting postulates and principles.
- ACCT 6126 International Accounting** 3 cr.  
Prerequisite: Accounting 3122 or consent of department. Credit will not be given for both ACCT 4126 and ACCT 6126. The external and internal reporting problems associated with multinational business entities and other organizations. The objectives of the course are (1) to provide an overview of the international structures which have evolved in response to international accounting problems (2) to review the literature relating to these problems and (3) to develop the analytical capabilities necessary to deal with international accounting issues.
- ACCT 6130 Advanced Accounting Analysis for Decision Making** 3 cr.  
Offered each semester. Prerequisite: Accounting 4400 or 2100 and 2130. A study of the analysis of accounting and other data relating to alternative business possibilities as an aid to management decision making. Not open to students in the M.S. in Accounting program or students who have an undergraduate degree in accounting.

- ACCT 6133 Studies in Managerial Accounting** 3 cr.  
Prerequisite: Accounting 3131. Readings and research in accounting relative to internal management, including cost accumulation and control systems, decision systems, and contemporary issues in management accounting.
- ACCT 6143 Accounting Information Systems** 3 cr.  
Prerequisites: Accounting 3141 and Business Administration 2780 or equivalents. To develop an understanding of the concepts of information systems, their design and operation, and to relate these concepts to the economic information requirements, information flows, decision criteria, and control mechanisms in the business organization.
- ACCT 6150 Tax Factors in Management Decisions** 3 cr.  
Prerequisite: consent of department. Credit will not be given for both ACCT 6150 and ACCT 4150. Tax consequences related to business decisions. Designed for students enrolled in the MBA program. Not open to students in the M.S. in Accounting program or students who have an undergraduate degree in accounting.
- ACCT 6151 Federal Tax Practice Procedure and Report Writing** 3 cr.  
Fall semester. Prerequisite: ACCT 3152 or consent of department. A course to acquaint the student with the organization of the Internal Revenue Service and its relation to practice, tax research techniques, and ethical tax practice.
- ACCT 6153 Taxation of Corporations and Shareholders** 3 cr.  
Fall semester. Prerequisite: Accounting 4152 or consent of department. Analysis of the tax treatment, tax problems, and tax planning techniques involving transactions between corporations and their shareholders; transfers to a corporation; capital structure; dividends and preferred stock bailouts; and an introduction to corporate divisions and reorganizations.
- ACCT 6154 Advanced Taxation of Corporations and Shareholders** 3 cr.  
Prerequisite: ACCT 6153 or consent of department. Advanced analysis of corporate reorganizations and divisions; carryover of tax attributes; limitations; affiliated corporations; personal holding companies and collapsible corporations.
- ACCT 6155 Tax Problems of Employee Retirement Plans** 3 cr.  
Prerequisite: consent of department. Provides a working knowledge of the qualification and operating requirements of the various deferred compensation plans available under the current Internal Revenue Code.
- ACCT 6156 Advanced Taxation of Partners and Partnerships and Professional Corporations** 3 cr.  
Prerequisite: Accounting 4152 or consent of department. The study of the tax problems of service partnerships including such topics as dissolution of the partnership, sale of the partnership interest, and retirement provisions. The professional partnership will be compared with the professional corporation as to the advantages and disadvantages of each.
- ACCT 6157 Consolidated Tax Returns** 3 cr.  
Prerequisite: ACCT 6153 or consent of department. Federal income taxation of corporations filing consolidated returns. Emphasis will be given to the various provisions affecting the taxable income of the affiliated group of corporations including the treatment of various loss carryovers, credits, specially treated transactions, allocation of consolidated tax liability, earnings and profits, investment in affiliates, dividends, and disposition of stock of a subsidiary.
- ACCT 6158 Taxation of Property Transactions** 3 cr.  
Prerequisite: consent of department. Federal income taxation of property transactions including nontaxable exchanges, involuntary conversions, historic structures, equipment leasing, leasebacks, installment sales, tax shelters, and other related topics.
- ACCT 6159 International Taxation** 3 cr.  
Prerequisite: consent of department. A study of the major topic areas in U.S. taxation of transnational transactions. Emphasis will be placed on the law affecting individuals and corporations. Some possible topics are the foreign tax credit, source of income rules, subpart F, intercompany pricing, foreign sales corporations, etc.
- ACCT 6163 Seminar in Auditing** 3 cr.  
Prerequisite: Accounting 3161 or equivalent. A study of advanced problems and current developments in auditing. Topics include auditing theory, practice, problems, ethics, legal environment, and other current topics.
- ACCT 6164 Ethical Issues in Accounting** 3 cr.  
Prerequisite: ACCT 6125 or consent of department. The study of major legal precedents and ethical issues facing the accounting profession utilizing case analyses.
- ACCT 6171 Seminar in the Historical Development of Accounting** 3 cr.  
Prerequisite: consent of department. The study of the historical development of accounting, the stakeholders, and philosophies that shaped its past and present and will influence its future.
- ACCT 6172 Financial Control of Governmental and Other Not-for-Profit Organizations** 3 cr.  
Prerequisite: Accounting 2100 or 4171 or consent of department. A study of the management control problems of governmental and not-for-profit organizations. Emphasis will be placed on the use of financial information for controlling the operations of governmental and nonprofit organizations. Topics include: 1) budgeting 2) pricing of services 3) measurement and evaluation of performance and 4) the basic design of an information system.
- ACCT 6190 Contemporary Tax Accounting Topics** 3 cr.  
Prerequisite: consent of department. This course will be used to offer tax topics of current interest to the student community. Topics such as Real Estate Taxation, Taxation of Natural Resources, Tax Exempt Organizations, Tax Aspects of International Transactions, and others may be offered from time to time. May be repeated for credit when topics vary.
- ACCT 6195 Directed Study** 3 cr.  
Offered each semester. Prerequisite: consent of department. Readings, conferences, reports, and a research project under the direction of a member of the graduate faculty.
- ACCT 4132G Cost Accounting II** 3 cr.  
Prerequisite: ACCT 3131. Advanced work in the development and use of accounting information for internal business decisions. Topics include: structure of managerial accounting theory; cost classifications and methods of cost estimation; decision models; standards and control; accounting information for production, marketing, and financing decisions.
- ACCT 4152G Tax Accounting II** 3 cr.  
Offered each semester. Prerequisite: Accounting 3152 or equivalent. Research methods in taxation. Intensive treatment of tax problems of partnerships, corporations, and fiduciaries. Study of federal estate and gift taxes.
- ACCT 4153G Individual Tax Planning** 3 cr.  
Prerequisite: Accounting 3152 or consent of department. Exploration of those areas most productive of tax saving opportunities for the individual. Timing of reporting income and deduction and the use of various tax-saving legal instruments will be covered.

- ACCT 417IG Survey of Governmental and Institutional Accounting** 3 cr.  
A study of internal budgeting and reporting systems, techniques of measurement and data collection, and preparation of financial statements for governmental bodies and non-profit organizations. A computer project, which entails the use of a spreadsheet, is required. Not open to accounting majors. For students with little or no previous work in accounting.
- ACCT 4180G Oil and Gas Industry: Accounting Problems** 3 cr.  
Prerequisite: six hours of accounting or consent of department. A study of current reporting practices and problems associated with accounting in the oil and gas industry. A review of the industry reporting requirements to state agencies, federal agencies, economic interest holders from both the operator and nonoperator points of view, as well as general purpose financial statements.
- ACCT 4190G Contemporary Accounting Topics** 3 cr.  
Prerequisite: consent of department. A study in depth of one or more subjects currently of concern in the field of accounting. May be repeated for credit when the topics vary. No more than six semester hours of credit will be allowed.
- ACCT 4195G Internship in Internal Auditing** 1-3 cr.  
Prerequisite: Accounting 4163 and consent of department. (Pass/Fail) At least ten hours per week of learning experience under the general supervision of a faculty member and direct supervision of a professional internal audit manager or director. Students desiring to take this course should apply a semester in advance since enrollment is limited by the internships available. Pass/Fail grading is based on a written report by the professional supervisor, a written report by the student, and the faculty member's evaluation. Accounting majors cannot use this course as an accounting elective for degree credit. This course is not open for graduate credit. Section number will correspond with credit to be earned. This course may be repeated for a total of three hours of credit.

### Academic Orientation

- ACOR 1001 Academic Orientation I** 1 cr.  
Orientation to the educational resources of the University and development of learning skills which will aid the student in making a successful start in college. Topics in the "learning skills" portion include analytical and problem-solving skills, time management, and techniques of note-taking and test-taking. (Open to freshmen only. Two hours of lecture per week for one-half semester).
- ACOR 1006 Academic Orientation II** 1 cr.  
The individual and the world of work. Lectures and activities designed to create individual and career awareness. Topics include choosing a major and careers, occupational-interest testing, and occupational-information resources. (Offered on a pass-fail basis. Two hours of lecture per week for one-half semester).

### Aerospace Studies

- AERO 1001 The Air Force Today** 1 cr.  
Fall semester. This course focuses on the basic characteristics of air doctrine; U.S. Air Force mission and organization; functions of the U.S. strategic offensive and defensive, general purpose, and support forces; officership; followership; military customs and courtesies; and an assessment of communicative skills.
- AERO 1002 The Air Force Today** 1 cr.  
Spring semester. This course focuses on U.S. Air Force installations and professions; introduction to flight; geographical awareness; U.S. defense policy; military balance; terrorism; and a study of the other branches of the Armed Services.

- AERO 1201 Development of Air Power I** 1 cr.  
Fall semester. Traces the development of airpower from the beginning of manned flight through World War II.
- AERO 1202 Development of Air Power II** 1 cr.  
Spring semester. A study of Post-World War II airpower development and employment, including present-day aerospace forces.
- AERO 3001 Management and Leadership I** 3 cr.  
Fall semester. Prerequisite: consent of department. The general theory and practice of management applied to Air Force situations.
- AERO 3002 Management and Leadership II** 3 cr.  
Spring semester. Prerequisite: consent of department. The theory and application of general concepts of leadership to Air Force situations.
- AERO 3401 National Security Forces in Contemporary American Society I** 3 cr.  
Fall semester. Prerequisite: consent of department. Study of the armed forces as an integral element of society. Examines civil-military relations in the formation of defense policy; the evolution of national security policy; the national security policy process; and national security policy issues.
- AERO 3402 National Security Forces in Contemporary American Society II** 3 cr.  
Spring semester. Prerequisite: consent of department. Political, economic, social, technological, and international developments; their effects upon strategic preparedness and the overall defense policy-making process.
- ANTH 1010 Peoples of the World** 3 cr.  
Offered each semester. A topical survey of tribes and cultures of the world past and present. This course is designed to acquaint the beginning student with anthropology and its various subfields. It will examine the background of several cultures at different levels of development which are now undergoing the difficult process of combining their traditional ways of life with the rapid changes imposed on them by the modern world.
- ANTH 1020 Fads, Fallacies, and Human Origins** 3 cr.  
A rational examination of numerous supposed ancient "mysteries" and unsolved phenomena relative to human origins using the data and methods of modern archaeology. Topics will include those areas in anthropology and archaeology made popular by sensationalist authors such as lost continents, ancient astronauts, strange stone monuments, pyramids, the Yeti and other monsters, lost races, archaeoastronomy, psychic anthropology, catastrophisms, and others. Major foci will include both the evidence for the actual causes of the phenomena and an examination of the methodology and style of pseudo-scientific sensationalist authors.
- ANTH 1292 Anthropology of Louisiana** 1 cr.  
An examination of particular aspects of Louisiana culture as seen by an anthropologist. Topics will vary each semester, but they will emphasize Louisiana's cultural diversity from the prehistoric background to the contribution of various European and African groups. Two hours of lecture per week for one-half semester. May be repeated once for a total of two credits.
- ANTH 2051 Human Evolution** 3 cr.  
Offered each semester. The origin and evolution of the human species, primates, modern human variation, prehistoric societies, and linguistic classification.
- ANTH 2052 Cultural Anthropology** 3 cr.  
Offered each semester. Cross-cultural, global, comparative, and critical perspectives on human behavior and culture. Diversity of human cultures from hunter-gatherers to industrialized city

- dwellers. Implications of sociocultural analysis of economic, social, political, symbolic, and religious systems.
- ANTH 2101 Intermediate Physical Anthropology** 3 cr.  
Prerequisite: Anthropology 2051. The structural and behavioral background of the human species as revealed by living and fossil primates, ancient forms of humanity, comparative osteology, and the interaction of biological and cultural evolution.
- ANTH 2991 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and reports under the direction of a member of the anthropology faculty.
- ANTH 2992 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and reports under the direction of a member of the anthropology faculty.
- ANTH 2993 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and reports under the direction of a member of the anthropology faculty.
- ANTH 3090 Special Topics in Cultural Anthropology** 3 cr.  
Prerequisite: ANTH 2051 or 2052 or consent of department. The examination of selected societies, culture areas, or social institutions, or theoretical topics to illustrate the anthropological perspectives to problems of applied anthropology, culture process, change, and development. Topic will vary from semester to semester. May be repeated once for credit.
- ANTH 3190 Special Topics in Physical Anthropology** 3 cr.  
Prerequisite: Anthropology 2051 or 2052 or consent of department. The in depth study of selected aspects of physical anthropology to illustrate the anthropological approach to problems regarding the biological and/or cultural aspects of man's development. Topic will vary from semester to semester. May be repeated once for credit.
- ANTH 3201 Field Methods in Archaeology** 3 cr.  
Prerequisite: consent of department. An introduction to the techniques of excavation, recording, laboratory analysis, and care of archaeological materials. Participation in the excavation of local sites. Two hours of lecture and four hours of laboratory.
- ANTH 3215 North American Archaeology** 3 cr.  
The cultural development of the indigenous peoples of the United States and Canada from the earliest settlement until European conquest. Emphasis on archaeological evidence for historical reconstruction and on cultural adaptations to the physical environment.
- ANTH 3295 Laboratory Techniques for Field Archaeology** 3 cr.  
Prerequisite: ANTH 3201 or consent of department. Detailed instruction on the cleaning, preservation, description, classification, and curation of artifacts. The comparative analysis of archaeological materials, both historic and pre-historic and the preparation of preliminary and final site reports. Two hours of lecture and four hours of laboratory.
- ANTH 3298 Research Problems in Field Archeology** 3 cr.  
Prerequisites: credit or concurrent registration in ANTH 3201 and consent of department. Instruction in the supervision of excavation, conduct of exploratory surveys, planning of laboratory analysis and preparation of excavation reports. Offered summer only.
- ANTH 3305 Indian Civilizations of Middle America** 3 cr.  
The civilizations of the Aztec, Maya, Mixtec, Zapotec, and their predecessors; neighboring cultures with whom they were in contact; the continuing influence of these societies in modern times.
- ANTH 3307 Pre-Columbian Peoples of South America** 3 cr.  
The cultural development of the first inhabitants of South America from the initial occupation to the European conquest. Particular attention is devoted to the rise of complex civilizations in the central Andes and adjacent Pacific coast culminating in the Inca empire. The continuing influence of these societies in modern times is also considered.
- ANTH 3314 The North American Indians** 3 cr.  
Survey of the sociocultural systems of the indigenous peoples north of Mexico. Histories, ecologies, economies, social relations, kinship, and belief systems, including colonialism, culture contact, change, and cultural survival. Contemporary and applied issues of the First Nations.
- ANTH 3325 Peoples of Middle America** 3 cr.  
Ethnographic and ethnohistorical survey of the peoples and cultures of Mesoamerica, especially the Maya, Aztec, and their present-day descendants. Texts, narratives, documents, and ethnographic accounts are interpreted in light of critical theory and analysis, employing the approaches of ethnology, ethnohistory, archaeology, and literature. Colonial history, colonialism, representation, indigenous "voices," and strategies of resistance and cultural survival will be examined.
- ANTH 3351 Africa** 3 cr.  
The peoples and cultures of the continent, stressing sub-Saharan groups. Although some attention will be devoted to colonial era and earlier cultures, the major focus will be on the contemporary scene, including the effects of the African diaspora.
- ANTH 3370 Ethnology of the Pacific Basin** 3 cr.  
The geographic setting; native cultures of the Melanesians, Polynesians and Malaysians; the influences of Asiatic and Euro-American civilizations.
- ANTH 3595 Academic Year Abroad: Special Topics in Anthropology** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.
- ANTH 3737 Women: Cross-Cultural Perspectives** 3 cr.  
An examination of the roles and status of women in selected world cultures with an emphasis on theory and analysis of the relationship of gender roles and behavior to economic, political, and social systems.
- ANTH 3896 Senior Honors Thesis** 1-6 cr.  
Prerequisite: consent of department and director of the University Honors Program. The preparation under faculty direction of an extended research paper upon some aspect of a topic currently of concern in the field so as to meet the requirements for graduation with University Honors and Honors in Anthropology. May be repeated for up to a total of six credits. Section number will correspond with credits to be carried.
- ANTH 4070 Qualitative Research** 3 cr.  
Prerequisite: senior standing or beyond, preferably in an established social science discipline; prior familiarity with research methodology and prior or concurrent registration in quantitative methodology courses are also advisable. Training in applied research techniques in the social sciences. Design, writing, and analysis of research using qualitative methodology with emphasis on directed, applied evaluation research, and related interdisciplinary methods and rationales.
- ANTH 4207 European Prehistory: Stone Age to Stonehenge** 3 cr.  
An examination of the archaeological sequence in Europe from the first evidence of human occupation to the establishment of urban civilization in the western Mediterranean basin.

- ANTH 4440 Anthropology of Religion** 3 cr.  
Prerequisite: Anthropology 2051 or 2052 or consent of department. Religious beliefs and practices which preceded or have remained beyond the influence of the great world religions; primitive survivals; the role of religion in society.
- ANTH 4454 Social Structure** 3 cr.  
Prerequisite: ANTH 2051 or 2052 or consent of department. The social organization and psychological orientation of selected preliterate societies.
- ANTH 4462 Economic Anthropology** 3 cr.  
Prerequisite: ANTH 2051 or 2052 or consent of department. The comparative analysis of the economic institutions of preliterate peoples with special attention to the technological bases of these institutions.
- ANTH 4565 Language and Culture** 3 cr.  
Prerequisite: ANTH 2051 or 2052 or consent of department. Language as the vehicle for culture; the influence of linguistic patterns and cultural configurations upon one another; the utility of various methods of linguistics analysis in the study of these programs.
- ANTH 4610 Zoological Research in Comparative Social Organization** 3 cr.  
Prerequisites: Anthropology 2051 or consent of department. Roots of social organization both in human and non-human primates and in other animal species; supervised observational techniques for basic and applied research to coordinate with the scientific program of the Audubon Zoo.
- ANTH 4721 Cultural Resource Management and Preservation Archaeology** 3 cr.  
Prerequisite: six hours of anthropology or consent of department. A problem-oriented presentation of the role of cultural resource management in the larger context of environmental impact studies. Particular attention is focused on accumulative impacts, legislative directions, and avoidance measures. The function of preservation archaeology in adaptive reutilization of standing structures and neighborhood revitalization programs is considered.
- ANTH 4723 Historical Site Archaeology** 3 cr.  
The application of the methodology and theory of field archaeology to the investigation of the material culture and settlement patterns of the colonial period and the early nineteenth century particularly in North America; the use of these data in the study of the dynamics of evolving varieties of Euro-American and Afro-American culture.
- ANTH 4761 Comparative Health Systems** 3 cr.  
Prerequisite: three hours of anthropology or consent of department. Holistic and cross-cultural examination of medical systems as systems knowledge and as theories of reality. Includes ecological, sociopolitical, historical, and comparative analyses of health and disease in human cultures in such areas as ethnomedicine, alternative medicines, shamanism, gender, and the human life cycle.
- ANTH 4765 Ethnicity in Contemporary Society** 3 cr.  
Prerequisite: three hours of Anthropology or consent of department. Cross-cultural analysis of concepts of race, ethnicity and national identity. Course draws on theoretical debates within anthropology and on ethnography in Africa, Asia, Europe, North and South America in order to identify cultural contexts and process behind deployment of recent ethnic conflicts around the world and on comparative study of ethnicity, race and racism in American society. Students will develop a field project related to ethnicity in the New Orleans metropolitan area.
- ANTH 4775 Urban Anthropology** 3 cr.  
Ethnographic approach to life in cities and to the cultures of cities. Popular myths and scholarly theories of urban life will be reviewed in light of recent ethnographic research in African, Asian, European, North and South American cities. Particular attention will be paid to cultural processes in cities, including the making of neighborhoods, the deployment of urban myths and folklore, the linking of cultural ideas about race, ethnicity and class in defining urban space, tourism, urban social policy, travel and images of cities and the making of urban consumers. Students will draw on theories and methods developed in class in order to design and carry out a field project in the New Orleans metropolitan area.
- ANTH 4790 Internship in Anthropology** 3 cr.  
Prerequisite: Anthropology 2051 or 2052 and consent of department. Each semester the department has internships available with the Audubon Zoo research program and other museums, agencies, or industries who request student interns with a background in anthropology. Interns will meet regularly with their adviser and supervisor, both of whom evaluate the student's work. Students are expected to turn in protocols or field logs, and a research paper as well as attend appropriate training seminars. This course may be repeated once for credit for a total of six credits.
- ANTH 4801 The History of Anthropological Theory** 3 cr.  
Prerequisite: nine hours of anthropology or consent of department. Critical and historical study theories of culture. Historical and contemporary schools of thought and major trends in ethnological theory, along with consideration of seminal theorists. Theoretical approaches in relation to biography, historical era, and socio-cultural milieu of theorists, and to the function and purposes of anthropology in Western thought. Successful completion of this course satisfies the general degree requirements for oral competency. (For anthropology majors)
- ANTH 4825 Contemporary Archaeological Theory** 3 cr.  
Prerequisite: Anthropology 2051 or History 2301 or consent of department. The application of anthropological theory, statistical procedures, and the analytical techniques of the natural sciences to archaeological research design, stressing contemporary developments. The relationship of archaeological data to general ethnological theory.
- ANTH 4991 Advanced Field Research in Anthropology** 1-6 cr.  
Offered summers only. Prerequisites: prior field research and consent of department. Amount of credit to be determined at the time of registration. Major field research, either independent or participatory, each under faculty guidance. (May be repeated once for a maximum total of six credits.) Section number corresponds to credit to be earned.
- ANTH 4070G Qualitative Research** 3 cr.  
Prerequisite: senior standing or beyond, preferably in an established social science discipline; prior familiarity with research methodology and prior or concurrent registration in quantitative methodology courses are also advisable. Training in applied research techniques in the social sciences. Design, writing, and analysis of research using qualitative methodology with emphasis on directed, applied evaluation research, and related interdisciplinary methods and rationales.
- ANTH 4207G European Prehistory: Stone Age to Stonehenge** 3 cr.  
An examination of the archaeological sequence in Europe from the first evidence of human occupation to the establishment of urban civilization in the western Mediterranean basin.
- ANTH 4440G Anthropology of Religion** 3 cr.  
Prerequisite: Anthropology 2051 or 2052 or consent of department. Religious beliefs and practices which preceded or have remained

beyond the influence of the great world religions; primitive survivals; the role of religion in society.

**ANTH 4454G Social Structure** 3 cr.  
Prerequisite: ANTH 2051 or 2052 or consent of department. The social organization and psychological orientation of selected preliterate societies.

**ANTH 4462G Economic Anthropology** 3 cr.  
Prerequisite: ANTH 2051 or 2052 or consent of department. The comparative analysis of the economic institutions of preliterate peoples with special attention to the technological bases of these institutions.

**ANTH 4565G Language and Culture** 3 cr.  
Prerequisite: ANTH 2051 or 2052 or consent of department. Language as the vehicle for culture; the influence of linguistic patterns and cultural configurations upon one another; the utility of various methods of linguistics analysis in the study of these programs.

**ANTH 4610G Zoological Research in Comparative Social Organization** 3 cr.  
Prerequisites: Anthropology 2051 or consent of department. Roots of social organization both in human and non-human primates and in other animal species; supervised observational techniques for basic and applied research to coordinate with the scientific program of the Audubon Zoo.

**ANTH 4721G Cultural Resource Management and Preservation Archaeology** 3 cr.  
Prerequisite: six hours of anthropology or consent of department. A problem-oriented presentation of the role of cultural resource management in the larger context of environmental impact studies. Particular attention is focused on accumulative impacts, legislative directions, and avoidance measures. The function of preservation archaeology in adaptive reutilization of standing structures and neighborhood revitalization programs is considered.

**ANTH 4723G Historical Site Archaeology** 3 cr.  
The application of the methodology and theory of field archaeology to the investigation of the material culture and settlement patterns of the colonial period and the early nineteenth century particularly in North America; the use of these data in the study of the dynamics of evolving varieties of Euro-American and Afro-American culture.

**ANTH 4761G Comparative Health Systems** 3 cr.  
Prerequisite: three hours of anthropology or consent of department. Holistic and cross-cultural examination of medical systems as systems knowledge and as theories of reality. Includes ecological, sociopolitical, historical, and comparative analyses of health and disease in human cultures in such areas as ethnomedicine, alternative medicines, shamanism, gender, and the human life cycle.

**ANTH 4765G Ethnicity in Contemporary Society** 3 cr.  
Prerequisite: three hours of Anthropology or consent of department. Cross-cultural analysis of concepts of race, ethnicity and national identity. Course draws on theoretical debates within anthropology and on ethnography in Africa, Asia, Europe, North and South America in order to identify cultural contexts and process behind deployment of recent ethnic conflicts around the world and on comparative study of ethnicity, race and racism in American society. Students will develop a field project related to ethnicity in the New Orleans metropolitan area.

**ANTH 4775G Urban Anthropology** 3 cr.  
Ethnographic approach to life in cities and to the cultures of cities. Popular myths and scholarly theories of urban life will be reviewed in light of recent ethnographic research in African, Asian, European, North and South American cities. Particular attention

will be paid to cultural processes in cities, including the making of neighborhoods, the deployment of urban myths and folklore, the linking of cultural ideas about race, ethnicity and class in defining urban space, tourism, urban social policy, travel and images of cities and the making of urban consumers. Students will draw on theories and methods developed in class in order to design and carry out a field project in the New Orleans metropolitan area.

**ANTH 4790G Internship in Anthropology** 3 cr.  
Prerequisite: Anthropology 2051 or 2052 and consent of department. Each semester the department has internships available with the Audubon Zoo research program and other museums, agencies, or industries who request student interns with a background in anthropology. Interns will meet regularly with their adviser and supervisor, both of whom evaluate the student's work. Students are expected to turn in protocols or field logs, and a research paper as well as attend appropriate training seminars. This course may be repeated once for credit for a total of six credits.

**ANTH 4801G The History of Anthropological Theory** 3 cr.  
Prerequisite: nine hours of anthropology or consent of department. Critical and historical study theories of culture. Historical and contemporary schools of thought and major trends in ethnological theory, along with consideration of seminal theorists. Theoretical approaches in relation to biography, historical era, and socio-cultural milieu of theorists, and to the function and purposes of anthropology in Western thought. Successful completion of this course satisfies the general degree requirements for oral competency. (For anthropology majors)

**ANTH 4825G Contemporary Archaeological Theory** 3 cr.  
Prerequisite: Anthropology 2051 or History 2301 or consent of department. The application of anthropological theory, statistical procedures, and the analytical techniques of the natural sciences to archaeological research design, stressing contemporary developments. The relationship of archaeological data to general ethnological theory.

**ANTH 4991G Advanced Field Research in Anthropology** 1-6 cr.  
Offered summers only. Prerequisites: prior field research and consent of department. Amount of credit to be determined at the time of registration. Major field research, either independent or participatory, each under faculty guidance. (May be repeated once for a maximum total of six credits.) Section number corresponds to credit to be earned.

## **Business Administration**

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**BA 1000 Introduction to Business Administration** 3 cr.  
An elementary survey of business administration. Introduces the business or non-business major to basic concepts of economics, business management and decision-making in the functional areas of production, marketing, and finance. Emphasis on the effects of social, ethical, economic, technological, political, and economic environmental factors upon business operation. Not open to students enrolled in a degree program in the College of Business Administration who have completed 30 hours of University credit or more.

**BA 2780 Introduction to Computers for Business** 3 cr.  
Offered each semester. Prerequisite: Mathematics 1111. Introduces computers and computer techniques needed to solve business problems. Develops skills needed for business students to utilize the computer in other courses using microcomputer application packages. Fundamentals of procedure oriented programming are also taught. The course also discusses data transfer between computer systems and data retrieval from business databases.

- BA 3010 The Legal Environment of Business** 3 cr.  
Offered each semester. Nature and function of law and legal institutions in society, with emphasis on those areas of law most relevant to business operations. Topics include the court systems, torts, the Constitution and business administrative agencies, international law, labor law, antitrust law, and environmental law.
- BA 3021 Business Law** 3 cr.  
Offered each semester. Prerequisite: BA 3010. Legal concepts relating to sales, commercial paper, anti-trust, bankruptcy, forms of business organizations, insurance, real property, secured transactions, suretyship, wills, estates, and trusts are presented as issues relating to specific business situations. Problems relating to financial reporting responsibilities and the growing role of federal securities regulation on the business community are also discussed.
- BA 3027 Labor Law and Arbitration** 3 cr.  
A study of law as it relates to the employee-employer relationship and the collective bargaining process. Among the subjects treated at length are collective bargaining and arbitration of grievances; unfair labor practices; affirmative action and equal employment opportunity; occupational safety and health; progressive discipline; and problems of public sector bargaining.
- BA 3048 International Business Law** 3 cr.  
Prerequisite: BA 3010. Law as it relates to international business organizations and commercial transactions. Among the subjects covered are sovereign immunity and international treaties and agreements; foreign antitrust laws and unfair trade practices; protection of property rights of American subsidiaries abroad; alien investment in the United States; foreign relations law; trade liberalization; and international arbitration.
- BA 3080 Corporate Social Responsibility** 3 cr.  
Offered each semester. Investigates the elements which form the ethical standards of the United States corporate community and the philosophical, religious, and cultural roots of such standards. Reading in ethical problems of advertising, pricing, automation, and business involvement in solution of social problems. Includes case studies and simulations.
- BA 4056 Entrepreneurship and New Business Ventures** 3 cr.  
Prerequisite: senior standing or consent of instructor. An examination of the crucial factors involved in the conception, initiation, and development of new business ventures. The elements of a business plan for a new venture are examined. Topics include the nature of entrepreneurs and entrepreneurship, market and feasibility analysis, sources of money, financial analysis and planning, ownership forms and tax considerations, and staffing and organization of the firm. A major requirement will be the development of a business plan for a new venture.
- BA 6001 Research in Business and Economics** 3 cr.  
Prerequisite: Quantitative Methods Business and Economics 2785. An intensive study of concepts, tools, methods, and theory of research in business and economics. Procurement and evaluation of data for use as a basis for planning, control, and operation of the business.
- BA 6040 Survey of International Business Part I** 3 cr.  
An integrated study of management, culture, economics, finance, marketing, law, accounting, and strategy in the international business arena. Part one of a two-course sequence consisting of BA 6040 and 6041.
- BA 6041 Survey of International Business II** 3 cr.  
Prerequisite: Successful completion of BA 6040 in the immediately preceding semester or consent of MBA program director. An integrated preceding semester or consent of MBA program director. An integrated study of management, culture, economics, finance, marketing, law, accounting, and strategy in the international business arena. This course is a continuation of BA 6040.
- BA 6080 Business and Society** 3 cr.  
A review of the major ethical questions of business. Discusses the structures of society upon business action and the place of social responsibility in corporate objectives.
- BA 7040 Examination or Thesis Only No credit** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- BA 4056G Entrepreneurship and New Business Ventures** 3 cr.  
Prerequisite: senior standing or consent of instructor. An examination of the crucial factors involved in the conception, initiation, and development of new business ventures. The elements of a business plan for a new venture are examined. Topics include the nature of entrepreneurs and entrepreneurship, market and feasibility analysis, sources of money, financial analysis and planning, ownership forms and tax considerations, and staffing and organization of the firm. A major requirement will be the development of a business plan for a new venture.

## Biological Sciences

- BIOS 1051 Contemporary Biology Laboratory** 1 cr.  
Prerequisite: eligibility for enrollment in ENGL 1157. Enrollment in BIOS 1053 is recommended. Not offered for credit to fulfill science requirements of students enrolled in the College of Sciences, Allied Health Program, or Science Education. This course is designed to complement material presented in Biological Sciences 1053. Laboratories explore the types of activities occurring in living systems including various aspects of human physiology such as blood pressure, the effects of exercise on the heart and muscle function. The remainder of the course involves a study of how cells reproduce, human genetics, and human reproduction. The course meets for two hours once per week. Credit may not be earned in both BIOS 1051 and 1081.
- BIOS 1053 Contemporary Biology** 3 cr.  
Prerequisite: eligibility for enrollment in English 1157. Not offered for credit to fulfill science requirement of students enrolled in the College of Sciences, Allied Health Program, or Science Education. Enrollment in Biology 1051 is not required for enrollment in Biological Sciences 1053. This course is part of a two-semester sequence designed to present biology in a manner relevant to the non-science major and his everyday life. The course focuses on various facets of human biology including nutrition and nutritional problems, basic human genetics, human reproduction, drug and alcohol use, and microbial diseases. Credit may not be earned in both BIOS 1053 and BIOS 1083.
- BIOS 1061 Contemporary Biology Laboratory** 1 cr.  
Prerequisite: eligibility for enrollment in ENGL 1157. Enrollment in BIOS 1063 is recommended. Not offered for credit to fulfill science requirements of students enrolled in the College of Sciences, Allied Health Program, or Science Education. This course is designed to complement material presented in BIOS 1063. A survey of the five living kingdoms is presented with a focus on basic aspects of their biology and their evolutionary relationships. Principles of behavior are illustrated with student observation of a number of animal groups, and principles of ecology and ecosystem analysis are investigated using the local marsh ecosystem. The course meets for two

hours once per week. Credit may not be earned in both BIOS 1061 and BIOS 1071.

**BIOS 1063 Contemporary Biology** 3 cr.  
Prerequisite: eligibility for enrollment in ENGL 1157. Not offered for credit to fulfill science requirements of students enrolled in the College of Sciences, Allied Health Program, or Science Education. Enrollment in BIOS 1061 is not required for enrollment in BIOS 1063. This course is part of a two-semester sequence. The course is designed to provide the non-science major with basic information about the principles of ecology and evolution, and the impact of man on the environment. Topics include the origin and evolution of plants and animals, aspects of animal (including human) behavior, evaluation of methods of pest control and pollution. Credit may not be earned in both BIOS 1063 and BIOS 1073.

**BIOS 1071 Biodiversity Laboratory** 1 cr.  
Prerequisite: credit or concurrent enrollment in BIOS 1073. Students are given exposure to representatives of the various groups of organisms discussed in BIOS 1073 as well as other lecture topics that can be appropriately considered in the context of a laboratory setting (e.g. cell division and genetics). The course meets for three hours once per week. Credit may not be earned in both BIOS 1071 and BIOS 1061.

**BIOS 1073 Biodiversity** 3 cr.  
Prerequisites: eligibility for enrollment in ENGL 1157, MATH 1111 and credit or concurrent enrollment in BIOS 1071. An introduction to organismal biology in the broadest sense. The theory of evolution and its historical development are considered and provide the framework for a survey of diversity encountered in the five kingdoms of living organisms. The course finishes with an introduction to the basic principles of genetics and their relation to the process of evolution. Three hours of lecture. Credit may not be earned in both BIOS 1073 and BIOS 1063.

**BIOS 1081 Form & Function Lab** 1 cr.  
Prerequisite: credit or concurrent enrollment in BIOS 1083. This course is designed to demonstrate several of the principles discussed in BIOS 1083. Students are given exposure to the form (structure) of plants and animals at the cell, tissue, and organ levels. Students also perform experiments designed to explore how plants and animals function. Quantitative data are collected and analyzed. Other topics include control of the internal environment, organismic integration, the cell cycle, and animal development. The course meets for three hours once per week. Credit may not be earned in both BIOS 1081 and BIOS 1051.

**BIOS 1083 Form & Function** 3 cr.  
Prerequisites: eligibility for enrollment in ENGL 1157 and Math 1111 and credit or concurrent enrollment in BIOS 1081. An introduction to animal and plant structure and function at the level of organ systems. Topics will include digestion, circulation, respiration, excretion, chemical and neural coordination, sensory systems and effectors, reproduction and development. Three hours of lecture. Credit may not be earned in both BIOS 1083 and BIOS 1053.

**BIOS 1301 Human Anatomy and Physiology Laboratory** 1 cr.  
Offered each semester. Prerequisite: credit or registration in BIOS 1303. Three hours of laboratory each week to accompany BIOS 1303. Practical applications of the basic biological principles and a detailed study of the skeleton, brain, and major sensory organs.

**BIOS 1303 Human Anatomy and Physiology** 3 cr.  
Offered each semester. Prerequisites: credit for or concurrent enrollment in BIOS 1301. This course is primarily designed for nursing and allied health students. An introductory course dealing with structural and functional relationships of the human organism at the cellular, tissue, organ, and system levels. The course covers

general principles in biology and a detailed study of the skeletal, muscular, nervous systems of humans.

**BIOS 1311 Human Anatomy and Physiology Laboratory** 1 cr.  
Offered each semester. Prerequisites: credit or registration in BIOS 1313. Three hours of laboratory each week to accompany BIOS 1313. A detailed dissection of the cat with correlations made to human anatomy. Selected physiological experiments which demonstrate principles involved in the various body systems. Applications of the basic biological principles and a detailed study of the skeleton, brain, and major sensory organs.

**BIOS 1313 Human Anatomy and Physiology II** 3 cr.  
Offered each semester. Prerequisite: credit in BIOS 1301 and 1303. A continuation of 1303 examining the other major systems of the body and some human genetics and growth. BIOS 1311 must be taken concurrently.

**BIOS 2002 Internship in Biology** 2 cr.  
Prerequisite: consent of department. Internships are available at a variety of institutions including Audubon Zoological Gardens, the Aquarium of the Americas, City Park Botanical Gardens, U.S. Department of Agriculture Laboratory, Louisiana Nature and Science Center, Orleans Parish Mosquito Control, and others. Internships are designed to provide practical experience in any of a range of biologically-oriented professions and exposure to the practical application of biological research findings. Students will be required to submit for approval a written description of their proposed activities. Interns will meet regularly with their supervisors and faculty advisors to evaluate progress in the program. This course may be repeated once for credit for a total of 4 hours in biology. Additional credit hours may be taken for general elective credit.

**BIOS 2014 Population Genetics, Evolution, and Ecology** 4 cr.  
Prerequisites: BIOS 1073, 1071 and MATH 1111. An introduction to the ecological and evolutionary processes that shape life on earth. Genetics and population genetics are incorporated with material from the fields of systematics, developmental biology, and paleontology to form a general evolutionary theory. Emphasis is placed on the ecological context, both biotic and abiotic, within which evolutionary changes take place. The laboratory includes field studies and computer simulation exercises of lecture topics that lend themselves to coverage in a laboratory setting. Three hours of lecture and three hours of laboratory.

**BIOS 2092 Sophomore Research** 1-3 cr.  
Prerequisites: BIOS 1073, 1071, 1083, 1081 and statistics. Independent studies by prior written arrangement with the department and professor concerned. An introduction to research methods in biology. May be repeated for a total of three semester hours credits in biology. Section number corresponds with credit to be earned. A field service fee is required in this course when applicable. Additional credit hours may be taken for general elective credit.

**BIOS 2114 Cell and Molecular Biology** 4 cr.  
Prerequisites: BIOS 1083 1081 and CHEM 1018 1023. An introduction to cell biology (cell structure and function, including metabolism) and molecular biology (the flow of information from DNA to proteins). The laboratory will involve exercises dealing with the techniques used to characterize proteins, nucleic acids, and cells. Three hours of lecture and three hours of laboratory.

**BIOS 2303 Human Biological Issues** 3 cr.  
Prerequisite: BIOS 1053 or 1083 or 1313. An examination of several health-related biological issues including cancer, AIDS, metabolism and dieting, in vitro fertilization, and the uses of genetic engineering. Not available for science credit in bachelor of science curriculum in biological sciences.

- BIOS 2313 Nutrition** 3 cr.  
Prerequisites: minimum of three credits in Biological Sciences and CHEM 1012 or 1017. This course is primarily designed for nursing and allied health students. A detailed study of nutrition with emphasis on metabolic pathways and relationships between nutritional intake and normal and pathological changes in the human organism.
- BIOS 2344 Physiological Basis of Drug Action** 4 cr.  
Prerequisites: BIOS 1081 1083 or 1051 1053 or consent of department. A description of basic physiological processes with emphasis on drugs of physiological importance and on the physiology and metabolism of dangerous and habit forming drugs. Three hours of lecture and two hours of laboratory demonstration-discussion.
- BIOS 2553 Evolution** 3 cr.  
Prerequisites: BIOS 1073, 1071, 1083, 1081 or 1053, 1063. A study of the theories, principles, and mechanisms of the evolution of life on earth.
- BIOS 2663 Introduction to Environmental Biology** 3 cr.  
Prerequisites: BIOS 1063 and 1061 or BIOS 1073 and 1071. An examination of the relationship between basic biological principles and current environmental problems. The impact of population growth, natural resource utilization, and waste generation and disposal on natural environments and biological diversity will be examined. The ecological, economic, and genetic rationale for conserving biological diversity and biological resources will be discussed.
- BIOS 2744 Microbiology and Human Disease** 4 cr.  
Prerequisites: a) consent of department or b) CHEM 1012 or 1017 and either BIOS 1083 and 1081 (or 1303 and 1301) and must have a grade-point average of at least 2.5. A laboratory course designed primarily for allied health majors. A survey of general and pathogenic microbiology including immunity and epidemiology. Three hours of lecture and three hours of laboratory.
- BIOS 2813 Economic Botany** 3 cr.  
Prerequisites: BIOS 1073 or 1063. Botanical, horticultural, and economic aspects of plants used as sources of food, fibers, and pharmaceuticals as well as other plants important to contemporary societies; origin and evolution of cultivated plants.
- BIOS 2904 Introduction to Marine Zoology** 4 cr.  
Prerequisites: BIOS 1073 1071 and 1083 1081 or consent of department. Field and laboratory survey of marine animals with emphasis on those of Louisiana Gulf Coast, including classification, morphology, physiology, and ecology. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 2914 Introduction to Marine Science** 4 cr.  
Prerequisite: consent of department. Introduction to physical, chemical, geological, and biological processes in oceans and coastal environments and their interactions with humans and the marine environment. Five weeks at a Louisiana Marine Consortium Coastal Laboratory. Summers only.
- BIOS 2954 Comparative Anatomy of Chordates** 4 cr.  
Prerequisites: BIOS 1073, 1071 and 1083, 1081. A study of changes in homologous organs in the chordate body and an analysis of the significance of these changes. Two hours of lecture and six hours of laboratory.
- BIOS 3091 Undergraduate Seminar** 1 cr.  
Offered each semester. Prerequisite: BIOS 2114 1071 and one biology course completed at the 3000 level. Open to biological science and education majors only. A weekly seminar with topics provided by students, faculty, and guest speakers. Successful completion of this course satisfies the general degree requirement for oral competency.
- BIOS 3092 Independent Research** 1-3 cr.  
Prerequisites: BIOS 2014, 2114 and Statistics. Independent studies by prior written arrangement with the department and professor concerned. An introduction to research methods in biology. May be repeated for a total of six semester hours credit in biology. Section number corresponds with credit to be earned. A field service fee is required in this course when applicable. Additional credit hours may be taken for general elective credit.
- BIOS 3104 Introduction to Biochemistry** 4 cr.  
Prerequisite: CHEM 2218 and BIOS 2114. An introduction to the fundamental concepts of biochemistry, with a quantitative emphasis. Four hours of lecture. Students in the B.S. Biology curriculum may not receive credit for both BIOS 3104 and CHEM 4510.
- BIOS 3284 Histology and Cytology** 4 cr.  
Prerequisite: BIOS 2114. A study of the structure-function relationship of cells and tissues of the four basic tissue types in animals. Three hours of lecture and three hours of laboratory.
- BIOS 3453 Genetics** 3 cr.  
Prerequisites: BIOS 2014 and 2114. An integration of Mendelian and molecular genetics, population genetics, and molecular evolution.
- BIOS 3653 General Ecology** 3 cr.  
Prerequisite: BIOS 2014. A study of the relationships between organisms and their environment. Three hours of lecture. An independent research project and/or field trips outside of the class may be required.
- BIOS 3854 General Botany** 4 cr.  
Prerequisite: BIOS 2014, 2114. A survey of the plant kingdom emphasizing classification, structure, and function. Three hours lecture and three hours of laboratory.
- BIOS 4003 Biometry** 3 cr.  
Prerequisite: MATH 2314 or an equivalent course. Statistical inference, analysis of variance, regression, correlation, and non-parametric methods. Introduction to multivariate analysis. Examples are chosen to illustrate applications in the biological sciences.
- BIOS 4013 Multivariate Analysis of Biological Data** 3 cr.  
Prerequisites: CSCI 1201 and BIOS 4003 or consent of department. An introduction to the analysis of multivariate data for the biological sciences. Topics include multiple regression and correlation, principal components analysis, factor analysis, ordination and cluster analysis, multivariate analysis of variance, and discriminant analysis. Laboratory emphasizes implementation of multivariate techniques with computer programs. Two hours of lecture and three hours of laboratory.
- BIOS 4083 Marine Science for Teachers** 3 cr.  
Prerequisites: BIOS 1073, 1071, 1083, 1081 or consent of department. Available only for free elective credit for students enrolled in the Bachelor of Sciences program in Biological Sciences. Introduction to marine biology and oceanography for teachers with little or no background in marine studies: methods for infusing marine science into existing elementary, middle, and high school curricula: emphasis on Louisiana environments and resources. Three weeks at a Louisiana Universities Marine Consortium coastal laboratory or an affiliated university campus with one field trip to coastal Louisiana. Summers only.
- BIOS 4091 Senior Honors Thesis** 1-3 cr.  
Prerequisites: 15 hours of biology credits and prior written arrangement with the department and professor(s) concerned. Students who wish to write a Senior Honors Thesis in order to graduate With Honors in Biological Sciences also need the approval of the director of the Honors Program. Limited to outstanding undergraduate

- students who have a minimum of a 3.50 grade point average in biological sciences. Independent research conducted in conjunction with biology faculty. A written report must be submitted and defended at the completion of the project. Not available for graduate credit, nor may BIOS 4091 credit be used to satisfy the departmental requirement for 4000-level biology credit. May be repeated for a total of six credits in biology. Additional credit hours may be taken for general elective credit.
- BIOS 4093 Laboratory Skills for Biology Teachers** 3 cr.  
Prerequisites: completion of 16 hours of biological sciences and eight hours of chemistry and consent of department. Available only for free elective credit for students enrolled in the B.A. or B.S. program in Biological Sciences. Not available for credit for students in the master of science program in biological sciences. Course provides prospective and in-service teachers with experiences in laboratory skills and techniques used in the teaching of biological sciences at the secondary level. Emphasis placed on scientific methodology, data collection, and analysis.
- BIOS 4114 Biochemistry and Molecular Biology Laboratory** 4 cr.  
Prerequisites: BIOS 2114, a course in statistics, and CHEM 2218. An introduction to biochemical and molecular biological laboratory techniques including enzymology, electrophoresis, column chromatography, tissue fractionation, restriction mapping, and DNA sequencing. Two hours of lecture and four hours of laboratory.
- BIOS 4153 Molecular Biology** 3 cr.  
Prerequisite: BIOS 3453. Structure and organization of DNA and chromatin, DNA replication, repair, transcription and RNA processing, protein biosynthesis and turnover, transcriptional and post-transcriptional control mechanisms. Examples of the above topics from eucaryotic and procaryotic cells and viruses.
- BIOS 4334 Cell Physiology** 4 cr.  
Prerequisites: BIOS 3104 and either MATH 2314 or PSYC 1310. The function of cells and cell organelles interpreted in terms of ultra-structure, biochemistry, and biophysics. Three hours of lecture and four hours of laboratory.
- BIOS 4343 Endocrinology** 3 cr.  
Prerequisites: Biological Sciences 2553. Comparative endocrinology of vertebrates.
- BIOS 4373 Biology of Aging** 3 cr.  
Prerequisite: BIOS 2114. An examination of current ideas of the causes and effects of biological aging at the organismic and cellular levels. Topics will include population dynamics, evolution, and cellular genomic and stochastic processes.
- BIOS 4513 Population Genetics and Evolution** 3 cr.  
Prerequisites: Biological Sciences 2014 and Mathematics 1111. An introduction to the mathematical and quantitative theory of evolutionary processes. Topics include, but are not confined to, mutation, natural selection, genetic drift, quantitative variation, and speciation.
- BIOS 4624 Limnology and Oceanography** 4 cr.  
Prerequisite: BIOS 2014. Physiochemical and biological dynamics of fresh and estuarine waters. Two hours of lecture and four hours of laboratory. A field service fee is required in this course.
- BIOS 4634 Marine Ecology** 4 cr.  
Prerequisite: BIOS 3653 or consent of department. Relationships of marine and estuarine organisms to environmental factors; interactions among organisms; ecological processes of energy and materials flow; field studies of communities and ecosystems of Louisiana coastal zone. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4714 Microbial Physiology** 4 cr.  
Prerequisites: BIOS 3754 and 3104 or consent of department. Concepts of microbial nutrition, metabolism, adaptation, and cellular control. Three hours of lecture and three hours of laboratory.
- BIOS 4724 Marine Microbiology** 4 cr.  
Prerequisite: BIOS 3754 or consent of department. Introduction to the estuarine and marine microbes, especially bacteria and fungi; covers classification, methodology, role in marine ecosystems, biogeochemical cycles, and diseases of marine animals. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4814 Marine Botany** 4 cr.  
Prerequisite: BIOS 3854 or consent of department. Study of marine and coastal algae and vascular plants including classification morphology life cycles and ecology; emphasis on field and laboratory studies. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4833 Terrestrial Plant Ecology** 3 cr.  
(BIOS 4833 and GEOG 4833 are cross-listed). Prerequisite: BIOS 3653 or GEOG 4530, GEOG 2801 or BIOS 4003, or their equivalent, or consent of department. A broad overview of the specialized branches of plant ecology which will examine the essential interactions between plants and their environment. The focus of the course will be threefold: first, theoretical considerations providing students a solid background from which to examine plant environment interactions; second, the dynamic processes that continually shape the structure of plant communities; third, methodologies for sampling and analyzing plant communities. At least two field trips can be anticipated.
- BIOS 4844 Plant Taxonomy** 4 cr.  
Prerequisite: BIOS 3854 or consent of department. Identification and ecology of local flora as well as the classification and evolution of vascular plants. Numerous field trips will be scheduled. Two hours of lecture and four hours of laboratory. A field service fee is required in this course.
- BIOS 4913 Zoogeography** 3 cr.  
Prerequisite: BIOS 3653 or consent of department. Global patterns of animal distribution: present and past.
- BIOS 4914 Biology of Fishes** 4 cr.  
Prerequisite: BIOS 2014. In addition, BIOS 2954 and 3653 recommended. Life histories, adaptations, and ecology of fishes. Three hours lecture and four hours of laboratory. A field service fee is required in this course.
- BIOS 4924 Herpetology** 4 cr.  
Prerequisite: BIOS 2014. Introduction to the study of morphology, adaptation, classification, distribution, and ecology of amphibians and reptiles. Field work and identification of North American groups and field studies of local fauna. Two hours of lecture and six hours of laboratory. A field service fee is required.
- BIOS 4934 Marine Invertebrate Zoology** 4 cr.  
Prerequisite: consent of department. General study of the classification, structure, function, and ecology of marine and estuarine invertebrates, emphasizing field studies on the Louisiana Gulf Coast. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4944 Invertebrate Zoology** 4 cr.  
Prerequisites: BIOS 2014 and 2114. Emphasis on morphology, systematics, physiology, embryology, evolution, and ecology. Three hours of lecture and three hours of laboratory. A field service fee is required in this course.

- BIOS 4954 Biology of the Higher Vertebrates** 4 cr.  
Prerequisite: BIOS 2014 and three additional hours of biological sciences credit above the 1000-level. A study of morphology, adaptation, classification, distribution, and ecology of birds and mammals. Field work and identification of North American species. Three hours of lecture and four hours of laboratory. A field-service fee is required in this course.
- BIOS 4974 Entomology** 4 cr.  
Prerequisite: BIOS 2014. Morphology, physiology, and control (physical, biological, and chemical) of common insects. Three hours of lecture and three hours of laboratory. A field service fee is required in this course.
- BIOS 4994 Marine Vertebrate Zoology** 4 cr.  
Prerequisite: BIOS 2954 or consent of department. General study of the marine chordates with particular emphasis on the fishes, including classification, structure, function, and ecology. Five weeks at the Louisiana Marine Consortium Coastal Laboratory. Summers only.
- BIOS 6005 Contemporary Plant Science for Biology Teachers** 3 cr.  
Prerequisite: consent of department. Not available as credit for students enrolled in the Master of Science degree program in Biological Sciences. A series of lectures, demonstrations, discussions, and student projects designed to expose students to new areas of plant science and update participants in the classical aspects of botany. Topics will include: tissue culture, economic botany, microtechnique/histology, and regulation of growth and development. Three hours of lecture.
- BIOS 6007 Cell and Molecular Biology for Teachers** 3 cr.  
Prerequisite: consent of department. Not available as credit for students enrolled in the Master of Science degree program in Biological Sciences. A series of lectures and demonstrations designed to expose students a basic background in the areas of cell and molecular biology using biochemical explanations when necessary. Topics will include cellular organelles and metabolism, biological macromolecules, construction and function of DNA, transcription and translation of proteins.
- BIOS 6013 Topics in Biochemistry and Physiology** 1-4 cr.  
Prerequisite: consent of department. In-depth lectures and literature-based discussions on selected topics of current interest in biochemistry and physiology. Selected topics may include protein structure and function, metabolic pathways, regulation of enzyme activity, nucleic acids, endocrinology, osmoregulation and comparative biochemistry and physiology.
- BIOS 6023 Topics in Cellular and Molecular Biology** 1-4 cr.  
Prerequisite: consent of department. In-depth lectures and literature-based discussions on selected topics in cellular and molecular biology. Selected topics may include regulation of cell cycle, cell-to-cell communication, cytoskeleton, cellular organelles, cell sorting, membrane function, structure and functions of nucleic acids, DNA replication, transcription and translation, and immunology.
- BIOS 6033 Topics in Marine Science** 1-4 cr.  
Prerequisite: consent of department. In-depth lectures and literature-based discussions on selected topics of current interest in marine science. Credit given for Louisiana Marine Consortium (LUMCOM) courses which are offered for graduate credit only. Students should request a list of proposed offerings from the Department of Biological Sciences in the spring semester.
- BIOS 6043 Topics in Genetics and Development** 1-4 cr.  
Prerequisite: consent of department. In-depth lectures and literature-based discussions on selected topics in genetics and development biology. Selected topics may include cytogenetics, structure and function of chromosomes, genetic recombination, microbial genetics, gamete structure and function fertilization, organogenesis and embryology.
- BIOS 6053 Topics in Systematics and Evolution** 1-4 cr.  
Prerequisite: consent of department. In-depth lectures and literature-based discussions on selected topics of current interest in systematics and evolution. Selected topics may include historical biogeography, evolutionary processes, population genetics, macroevolution, biochemical systematics and molecular evolution.
- BIOS 6063 Topics in Ecology and Environmental Science** 1-4 cr.  
Prerequisite: consent of department. In-depth lectures and literature-based discussions on selected topics of current interest in ecology and environmental biology. Selected topics may include limnology and oceanography, environmental pollution, conservation biology, population ecology, physiological ecology and community ecology.
- BIOS 6073 Special Topics in Organismal Biology** 1-4 cr.  
Prerequisite: consent of department. In-depth lectures and literature-based discussions on selected topics in organismal biology. Selected topics may include ichthyology, phylogenetic analysis, multivariate analysis, biological nomenclature and evolution of sexual reproduction.
- BIOS 6090 Biological Problems** 1-3 cr.  
Offered each semester. Independent studies by written approval of the departmental graduate program committee and the supervising professor. This course may not be taken under the direction of the student's thesis advisor. Students enrolled in the M.S. program in Biological Sciences may earn a maximum of three credit hours in this course. Credit earned not to be counted toward the minimal nine hours required at the 6000 level.
- BIOS 6091 Graduate Seminar** 1 cr.  
Offered each semester. Students and faculty will discuss their research work or timely topics in biological sciences. One hour of lecture-discussion to be taken four times for credit.
- BIOS 7000 Thesis Research** 1-9 cr.  
Offered each semester. By arrangement with the graduate adviser. To be repeated for credit until thesis is accepted. Three hours of laboratory work per credit hour. Section number will correspond with credit to be earned.
- BIOS 7040 Examination or Thesis Only No credit** 0 cr.  
Open to students in the thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- BIOS 4003G Biometry** 3 cr.  
Prerequisite: MATH 2314 or an equivalent course. Statistical inference, analysis of variance, regression, correlation, and non-parametric methods. Introduction to multivariate analysis. Examples are chosen to illustrate applications in the biological sciences.
- BIOS 4013G Multivariate Analysis of Biological Data** 3 cr.  
Prerequisites: CSCI 1201 and BIOS 4003 or consent of department. An introduction to the analysis of multivariate data for the biological sciences. Topics include multiple regression and correlation, principal components analysis, factor analysis, ordination and cluster analysis, multivariate analysis of variance, and discriminant analysis. Laboratory emphasizes implementation of multivariate techniques with computer programs. Two hours of lecture and three hours of laboratory.

- BIOS 4083G Marine Science for Teachers** 3 cr.  
Prerequisites: BIOS 1073, 1071, 1083, 1081 or consent of department. Available only for free elective credit for students enrolled in the Bachelor of Sciences program in Biological Sciences. Introduction to marine biology and oceanography for teachers with little or no background in marine studies: methods for infusing marine science into existing elementary, middle, and high school curricula: emphasis on Louisiana environments and resources. Three weeks at a Louisiana Universities Marine Consortium coastal laboratory or an affiliated university campus with one field trip to coastal Louisiana. Summers only.
- BIOS 4093G Laboratory Skills for Biology Teachers** 3 cr.  
Prerequisites: completion of 16 hours of biological sciences and eight hours of chemistry and consent of department. Available only for free elective credit for students enrolled in the B.A. or B.S. program in Biological Sciences. Not available for credit for students in the master of science program in biological sciences. Course provides prospective and in-service teachers with experiences in laboratory skills and techniques used in the teaching of biological sciences at the secondary level. Emphasis placed on scientific methodology, data collection, and analysis.
- BIOS 4114G Biochemistry and Molecular Biology Laboratory** 4 cr.  
Prerequisites: BIOS 2114, a course in statistics, and CHEM 2218. An introduction to biochemical and molecular biological laboratory techniques including enzymology, electrophoresis, column chromatography, tissue fractionation, restriction mapping, and DNA sequencing. Two hours of lecture and four hours of laboratory.
- BIOS 4153G Molecular Biology** 3 cr.  
Prerequisite: BIOS 3453. Structure and organization of DNA and chromatin, DNA replication, repair, transcription and RNA processing, protein biosynthesis and turnover, transcriptional and post-transcriptional control mechanisms. Examples of the above topics from eucaryotic and procaryotic cells and viruses.
- BIOS 4334G Cell Physiology** 4 cr.  
Prerequisites: BIOS 3104 and either MATH 2314 or PSYC 1310. The function of cells and cell organelles interpreted in terms of ultrastructure, biochemistry, and biophysics. Three hours of lecture and four hours of laboratory.
- BIOS 4343G Endocrinology** 3 cr.  
Prerequisites: Biological Sciences 2553. Comparative endocrinology of vertebrates.
- BIOS 4373G Biology of Aging** 3 cr.  
Prerequisite: BIOS 2114. An examination of current ideas of the causes and effects of biological aging at the organismic and cellular levels. Topics will include population dynamics, evolution, and cellular genomic and stochastic processes.
- BIOS 4513G Population Genetics and Evolution** 3 cr.  
Prerequisites: Biological Sciences 2014 and Mathematics 1111. An introduction to the mathematical and quantitative theory of evolutionary processes. Topics include, but are not confined to, mutation, natural selection, genetic drift, quantitative variation, and speciation.
- BIOS 4624G Limnology and Oceanography** 4 cr.  
Prerequisite: BIOS 2014. Physiochemical and biological dynamics of fresh and estuarine waters. Two hours of lecture and four hours of laboratory. A field service fee is required in this course.
- BIOS 4634G Marine Ecology** 4 cr.  
Prerequisite: BIOS 3653 or consent of department. Relationships of marine and estuarine organisms to environmental factors; interactions among organisms; ecological processes of energy and materials flow; field studies of communities and ecosystems of Louisiana coastal zone. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4714G Microbial Physiology** 4 cr.  
Prerequisites: BIOS 3754 and 3104 or consent of department. Concepts of microbial nutrition, metabolism, adaptation, and cellular control. Three hours of lecture and three hours of laboratory.
- BIOS 4724G Marine Microbiology** 4 cr.  
Prerequisite: BIOS 3754 or consent of department. Introduction to the estuarine and marine microbes, especially bacteria and fungi; covers classification, methodology, role in marine ecosystems, biogeochemical cycles, and diseases of marine animals. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4814G Marine Botany** 4 cr.  
Prerequisite: BIOS 3854 or consent of department. Study of marine and coastal algae and vascular plants including classification morphology life cycles and ecology; emphasis on field and laboratory studies. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4833G Terrestrial Plant Ecology** 3 cr.  
(BIOS 4833 and GEOG 4833 are cross-listed). Prerequisite: BIOS 3653 or GEOG 4530, GEOG 2801 or BIOS 4003, or their equivalent, or consent of department. A broad overview of the specialized branches of plant ecology which will examine the essential interactions between plants and their environment. The focus of the course will be threefold: first, theoretical considerations providing students a solid background from which to examine plant environment interactions; second, the dynamic processes that continually shape the structure of plant communities; third, methodologies for sampling and analyzing plant communities. At least two field trips can be anticipated.
- BIOS 4844G Plant Taxonomy** 4 cr.  
Prerequisite: BIOS 3854 or consent of department. Identification and ecology of local flora as well as the classification and evolution of vascular plants. Numerous field trips will be scheduled. Two hours of lecture and four hours of laboratory. A field service fee is required in this course.
- BIOS 4913G Zoogeography** 3 cr.  
Prerequisite: BIOS 3653 or consent of department. Global patterns of animal distribution: present and past.
- BIOS 4914G Biology of Fishes** 4 cr.  
Prerequisite: BIOS 2014. In addition, BIOS 2954 and 3653 recommended. Life histories, adaptations, and ecology of fishes. Three hours lecture and four hours of laboratory. A field service fee is required in this course.
- BIOS 4924G Herpetology** 4 cr.  
Prerequisite: BIOS 2014. Introduction to the study of morphology, adaptation, classification, distribution, and ecology of amphibians and reptiles. Field work and identification of North American groups and field studies of local fauna. Two hours of lecture and six hours of laboratory. A field service fee is required.
- BIOS 4934G Marine Invertebrate Zoology** 4 cr.  
Prerequisite: consent of department. General study of the classification, structure, function, and ecology of marine and estuarine invertebrates, emphasizing field studies on the Louisiana Gulf Coast. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory. Summers only.
- BIOS 4944G Invertebrate Zoology** 4 cr.  
Prerequisites: BIOS 2014 and 2114. Emphasis on morphology, systematics, physiology, embryology, evolution, and ecology. Three

hours of lecture and three hours of laboratory. A field service fee is required in this course.

**BIOS 4954G Biology of the Higher Vertebrates** 4 cr.  
Prerequisite: BIOS 2014 and three additional hours of biological sciences credit above the 1000-level. A study of morphology, adaptation, classification, distribution, and ecology of birds and mammals. Field work and identification of North American species. Three hours of lecture and four hours of laboratory. A field-service fee is required in this course.

**BIOS 4974G Entomology** 4 cr.  
Prerequisite: BIOS 2014. Morphology, physiology, and control (physical, biological, and chemical) of common insects. Three hours of lecture and three hours of laboratory. A field service fee is required in this course.

**BIOS 4994G Marine Vertebrate Zoology** 4 cr.  
Prerequisite: BIOS 2954 or consent of department. General study of the marine chordates with particular emphasis on the fishes, including classification, structure, function, and ecology. Five weeks at the Louisiana Marine Consortium Coastal Laboratory. Summers only.

## Chemistry

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**CHEM 1012 Introductory Chemistry** 3 cr.  
Offered each semester. Prerequisite: eligibility for Mathematics 1111. A course designed to cover all the areas of chemistry including inorganic, organic, and biochemistry, in a depth suitable for those curricula requiring a formal single semester course. Credit for both Chemistry 1012 and either 1010 or 1017 will not be allowed.

**CHEM 1017 General Chemistry** 3 cr.  
Offered each semester. Prerequisite: successful completion of (or exemption from) MATH 1125 or 1115; or a minimum math ACT score of 23. A course in the fundamentals of chemistry. Students whose curricula require only one year of college chemistry will normally take CHEM 1018 and 1023 or CHEM 1018 and 1028 following satisfactory completion of this course.

**CHEM 1018 General Chemistry** 3 cr.  
Offered each semester. Prerequisite: CHEM 1017. A continuation of CHEM 1017. Inorganic chemistry with selected topics in organic chemistry. Credit for both CHEM 1018 and CHEM 1011 will not be allowed.

**CHEM 1023 Laboratory Chemistry I** 2 cr.  
Offered each semester. Prerequisite: Credit for or concurrent enrollment in Chemistry 1018 or consent of department. Introductory lab for students who will not continue to more advanced chemistry labs. A study of basic principles of laboratory investigations and illustrations of the chemical behavior described in General Chemistry. One hour of lecture and three hours of laboratory. Credit cannot be earned for both Chem 1023 and Chem 1028.

**CHEM 2027 Chemistry Laboratory V** 2 cr.  
Prerequisites: Chem 2026 and CHEM 2211. A continuation of CHEM 2026 involving more elaborate reaction procedures and more sophisticated treatment of results. Six hours of laboratory.

**CHEM 2117 Quantitative Analysis** 3 cr.  
Offered each semester. Prerequisite: CHEM 1018. A course in the theory of gravimetric, titrimetric, colorimetric, chromatographic, and spectrometric separations and analysis.

**CHEM 2217 Organic Chemistry** 3 cr.  
Offered each semester. Prerequisite: CHEM 1018. A fundamental course intended for chemistry majors, premedical and medical technology students, and majors in biological sciences.

**CHEM 2218 Organic Chemistry** 3 cr.  
Offered each semester. Prerequisite: a grade of "C" or better in Chemistry 2217. A continuation of Chemistry 2217.

**CHEM 3094 Undergraduate Research** 3 cr.  
Offered each semester. Prerequisites: consent of department and departmental approval of research arrangements prior to registration. Individual research under the guidance of a departmental faculty member. A written report of the work carried out will be submitted by the student to the faculty of the departmental division in which the research is done. The student may also be requested to present a seminar on higher research. May be taken twice for credit.

**CHEM 3099 Senior Honors Thesis** 1-6 cr.  
Offered each semester. Prerequisite: consent of department and Honors Program director. Senior honors thesis research in chemistry under the direction of a faculty member. To be repeated until thesis is accepted. Section number will correspond with credit to be earned.

**CHEM 4010 Marine Environmental Chemistry** 4 cr.  
Prerequisite: Eight semester hours of introductory chemistry or consent of instructor. Chemical composition of the oceans; chemical, biological, and geological processes in marine and estuarine environments. Offered summers only. Five weeks at a Louisiana Universities Marine Consortium Coastal Laboratory.

**CHEM 4030 Laboratory Methods in Instrumental Analysis** 3 cr.  
Fall semester. Prerequisite: credit or registration in Chemistry 4110. One hour of lecture and six hours of laboratory. Successful completion of this course satisfies the general degree requirement for oral competency.

**CHEM 4110 Instrumental Analysis** 3 cr.  
Prerequisite: credit or registration in Chemistry 4311 or 4317. An introduction to physicochemical and industrial methods of analysis.

**CHEM 4121 Introduction to Modern Instrumentation** 4 cr.  
Prerequisite: consent of department. A discussion of and laboratory exercises in hardware, software, and computer interfacing principles applicable to modern (computer interfaced) scientific instrumentation from the point of view of a practicing scientist. Two hours of lecture and six hours of laboratory per week.

**CHEM 4210 Intermediate Organic Chemistry** 3 cr.  
Fall semester. Prerequisite: CHEM 2218. A broad selection of topics such as stereochemistry, reaction mechanisms, synthesis, spectroscopy, literature searching, and nomenclature.

**CHEM 4317 Principles of Physical Chemistry** 3 cr.  
Spring semester. Prerequisites: CHEM 1011 or 1018, MATH 2111 and credit or concurrent registration in PHYS 1062 or 1032. An introduction to those principles and techniques of physical chemistry most applicable to studies of an interdisciplinary nature. CHEM 4311 and 4317 may not both be used for degree credit.

**CHEM 4411 Descriptive Inorganic Chemistry** 3 cr.  
Prerequisites: CHEM 2218. A survey of modern inorganic chemistry as it relates to the periodic table in general, emphasizing the reactivity, mechanisms, and structure of elements and their compounds.

**CHEM 6005 Experimental Chemistry for Teachers I** 3 cr.  
Prerequisite: consent of department. A course for science teachers in the development and utilization of demonstration experiments for teaching principles of chemistry including laboratory experience with materials and techniques necessary for such experimentation. Two hours of lecture and two hours of laboratory.

- CHEM 6006 Experimental Chemistry for Teachers II** 3 cr.  
Prerequisite: consent of department. A course for science teachers in the development and utilization of demonstration experiments for demonstrating the properties of the chemical elements and their compounds including laboratory experience with materials and techniques necessary for such experimentation. Two hours of lecture and two hours of laboratory.
- CHEM 6007 Experimental Chemistry for Teachers III** 3 cr.  
Prerequisite: consent of department. A course for science teachers in the basic techniques of glass-blowing, electronics, and machine shop methods as applied to problems of chemical interest. The preparation of new experiments in a relatively inexpensive way, the maintenance of present equipment, and innovations (or modifications) of existing experiments would be corollary benefits. Two hours of lecture and two hours of laboratory.
- CHEM 6090 Specialized Readings in Advanced Chemistry** 1 cr.  
Offered each semester. Prerequisite: consent of department. Individually directed readings in specialized areas of chemistry with frequent consultations with the instructor. When sufficient enrollment permits a seminar and/or lecture format may be utilized. Credit for this course is not acceptable toward an M.S. degree in chemistry. A maximum of four credits may be obtained but no more than two credits per semester.
- CHEM 6091 Specialized Readings in Advanced Chemistry** 1 cr.  
Offered each semester. Prerequisite: consent of department. Individually directed readings in specialized areas of chemistry with frequent consultations with the instructor. When sufficient enrollment permits a seminar and/or lecture format may be utilized. Credit for this course is not acceptable toward an M.S. degree in chemistry. A maximum of four credits may be obtained but no more than two credits per semester.
- CHEM 6092 Specialized Readings in Advanced Chemistry** 1 cr.  
Offered each semester. Prerequisite: consent of department. Individually directed readings in specialized areas of chemistry with frequent consultations with the instructor. When sufficient enrollment permits a seminar and/or lecture format may be utilized. Credit for this course is not acceptable toward an M.S. degree in chemistry. A maximum of four credits may be obtained but no more than two credits per semester.
- CHEM 6093 Specialized Readings in Advanced Chemistry** 1 cr.  
Offered each semester. Prerequisite: consent of department. Individually directed readings in specialized areas of chemistry with frequent consultations with the instructor. When sufficient enrollment permits a seminar and/or lecture format may be utilized. Credit for this course is not acceptable toward an M.S. degree in chemistry. A maximum of four credits may be obtained but no more than two credits per semester.
- CHEM 6095 Seminar** 1 cr.  
Offered each semester. All graduate students will be expected to participate in a report and discussion group in the field of chemistry of particular interest to them. May be taken for credit a maximum of six times.
- CHEM 6110 Advanced Chemical Analysis** 3 cr.  
Prerequisite: CHEM 4110 or equivalent. A discussion of the fundamental principles of analytical chemistry.
- CHEM 6111 Advanced Analytical Chemistry** 3 cr.  
Prerequisite: consent of department. A discussion of modern techniques of chemical analysis of inorganic and organic compounds, including spot tests, functional group analysis, biochemical methods, and less common volumetric techniques.
- CHEM 6112 Physical Methods in Analytical Chemistry** 3 cr.  
Prerequisite: CHEM 4110 or consent of department. Recent advances in physicochemical methods of analysis. CHEM 6112 covers electro-analytical techniques, including discussion of polarography, chronopotentiometry, coulometry, voltammetry, amperometry, electrode reactions, and electrode processes.
- CHEM 6113 Physical Methods in Analytical Chemistry** 3 cr.  
Prerequisite: Chemistry 4110 or consent of department. Recent advances in physicochemical methods of analysis. CHEM 6113 includes a discussion of spectroscopic methods, such as IR, UV, Visible, X-rays, Mass Spectrometry, Mossbauer, EPR, NMR, Fluorescence, and Atomic Absorption.
- CHEM 6115 Special Topics in Analytical Chemistry** 1-3 cr.  
In-depth study of various topics of current importance in Analytical Chemistry. Hours of credit will be specified each semester. A student may accumulate a maximum of six credit hours for this course.
- CHEM 6210 Advanced Organic Chemistry** 3 cr.  
Prerequisite: CHEM 4210 or equivalent. An advanced treatment of selected areas of organic chemistry, including the literature of organic chemistry, structural concepts, analysis, reactions, and theory.
- CHEM 6211 Synthetic Organic Chemistry** 3 cr.  
Prerequisite: CHEM 6210 or equivalent. A study of the scope and limitations of useful reactions, including strategy for the design of multistep syntheses of complex molecules.
- CHEM 6212 Structural Organic Chemistry** 3 cr.  
Prerequisite: CHEM 6210 or equivalent. The elucidation of the three-dimensional structure of organic compounds; theory and practice.
- CHEM 6213 Physical Organic Chemistry** 3 cr.  
Prerequisites: CHEM 4311 and 6210 or equivalents. The study of the energy relationships and mechanistic principles by which organic reaction processes are described and understood.
- CHEM 6214 Advances in Organic Chemistry** 3 cr.  
Prerequisite: CHEM 6210 or equivalent. An examination of recent trends in various areas of organic chemistry.
- CHEM 6215 Organic Laboratory Preparations** 2 cr.  
Prerequisites: CHEM 2027 or its equivalent and consent of department. Training in advanced synthetic techniques of organic chemistry.
- CHEM 6310 Advanced Thermodynamics and Kinetics** 3 cr.  
Prerequisite: CHEM 4311 or equivalent. An advanced treatment of the fundamental principles of thermodynamics and chemical kinetics.
- CHEM 6311 Statistical Mechanics** 3 cr.  
Prerequisites: CHEM 6310 and 6312 or equivalent. Methods of statistical mechanics and the application of these methods to the theoretical treatment of chemical problems.
- CHEM 6312 Chemical Bonding and Molecular Spectroscopy** 3 cr.  
Prerequisite: CHEM 4310 or equivalent. Introduction to quantum chemistry, theoretical and applied treatment of rotational, vibrational, electronic, and resonance spectroscopy.
- CHEM 6314 Quantum Chemistry** 3 cr.  
Prerequisites: CHEM 6310 and 6312 and consent of department. The basic principles and methods of quantum mechanics. Applications to atomic and molecular systems.
- CHEM 6316 Special Topics in Physical Chemistry** 3 cr.  
Various topics of current interest will be presented each semester. Three credits per semester; may be taken twice for credit.

- CHEM 6410 Advanced Comprehensive Inorganic Chemistry** 3 cr.  
Prerequisites: CHEM 4310, 4311 and 4410 or equivalents approved by department. A comprehensive treatment of general bonding theory, the chemistry of the nontransitional elements, and the chemistry of the transition elements including the chemistry and theoretical aspects of coordination compounds.
- CHEM 6411 Advanced Comprehensive Inorganic Chemistry** 3 cr.  
Prerequisites: CHEM 4310, 4311 and 4410 or equivalents approved by department. A comprehensive treatment of general bonding theory, the chemistry of the nontransitional elements, and the chemistry of the transition elements including the chemistry and theoretical aspects of coordination compounds.
- CHEM 6412 Modern Aspects of Bonding Theory** 3 cr.  
Prerequisites: at least one semester of basic quantum theory, applied group theory (or its equivalent), and consent of department. A comprehensive course in which the advanced student is instructed in the quantitative aspects of ligand field and molecular orbital theories.
- CHEM 6496 Special Topics in Advanced Inorganic Chemistry** 1-3 cr.  
Various topics of special interest will be presented each semester. Section number will correspond with credit to be earned. A student may accumulate a total of six credit hours for various offerings of this course.
- CHEM 6511 Industrial Chemistry: Principles** 3 cr.  
Prerequisite: applicancy status in Ph.D. program or consent of department. Extensive examination of four or five case studies of authentic industrial processes from conception to commercial viability. The course will orient students to the various developmental phases involved in industrial scale-up and will provide a vehicle for illustrating the transformation of basic chemical principles into economically feasible industrial chemical processes.
- CHEM 6512 Industrial Chemistry: Polymers** 3 cr.  
Prerequisite: applicancy status in Ph.D. program or consent of department. A comprehensive review of the synthesis and physical properties of organic, inorganic, and biochemical macromolecules with particular emphasis on modern commercial applications.
- CHEM 7000 Thesis Research** 1-9 cr.  
Offered each semester. To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- CHEM 7025 Procedures and Problems in Chemical Research** 1-9 cr.  
Offered each semester. Students who receive six hours of credit in Chemistry 7000 cannot obtain more than nine hours credit in this course. Open only to students of proven ability or exceptional potential. A study of experimental research methods, the design and execution of experiments, and the analysis of experimental data. Section number will correspond with credit to be earned.
- CHEM 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- CHEM 7050 Dissertation Research** 1-9 cr.  
Offered each semester. Prerequisite: six credits in CHEM 7000 or 7025. Section number will correspond with credit to be earned. To be repeated for credit until dissertation is accepted.
- CHEM 4010G Marine Environmental Chemistry** 4 cr.  
Prerequisite: Eight semester hours of introductory chemistry or consent of instructor. Chemical composition of the oceans; chemical, biological, and geological processes in marine and estuarine environments. Offered summers only. Five weeks at a Louisiana Universities Marine Consortium Coastal Laboratory.
- CHEM 4030G Laboratory Methods in Instrumental Analysis** 3 cr.  
Fall semester. Prerequisite: credit or registration in Chemistry 4110. One hour of lecture and six hours of laboratory. Successful completion of this course satisfies the general degree requirement for oral competency.
- CHEM 4110G Instrumental Analysis** 3 cr.  
Prerequisite: credit or registration in Chemistry 4311 or 4317. An introduction to physicochemical and industrial methods of analysis.
- CHEM 4121G Introduction to Modern Instrumentation** 4 cr.  
Prerequisite: consent of department. A discussion of and laboratory exercises in hardware, software, and computer interfacing principles applicable to modern (computer interfaced) scientific instrumentation from the point of view of a practicing scientist. Two hours of lecture and six hours of laboratory per week.
- CHEM 4210G Intermediate Organic Chemistry** 3 cr.  
Fall semester. Prerequisite: CHEM 2218. A broad selection of topics such as stereochemistry, reaction mechanisms, synthesis, spectroscopy, literature searching, and nomenclature.
- CHEM 4317G Principles of Physical Chemistry** 3 cr.  
Spring semester. Prerequisites: CHEM 1011 or 1018, MATH 2111 and credit or concurrent registration in PHYS 1062 or 1032. An introduction to those principles and techniques of physical chemistry most applicable to studies of an interdisciplinary nature. CHEM 4311 and 4317 may not both be used for degree credit.
- CHEM 4411G Descriptive Inorganic Chemistry** 3 cr.  
Prerequisites: CHEM 2218. A survey of modern inorganic chemistry as it relates to the periodic table in general, emphasizing the reactivity, mechanisms, and structure of elements and their compounds.

## Chinese

- CHIN 1001 Basic Chinese** 3 cr.  
A sequence of courses for beginners that aims at the acquisition of the four basic language skills: speaking, understanding, reading, and writing. The mastery of the basic language structures will be achieved through aural-oral exercises and practice. The Chinese writing system will be introduced from the beginning.
- CHIN 1002 Basic Chinese** 3 cr.  
A sequence of courses for beginners that aims at the acquisition of the four basic language skills: speaking, understanding, reading, and writing. The mastery of the basic language structures will be achieved through aural-oral exercises and practice. The Chinese writing system will be introduced from the beginning.
- CHIN 2001 Intermediate Chinese** 3 cr.  
Prerequisite: CHIN 1002 or consent of instructor. Continuation of all four basic language skills: speaking, understanding, reading, and writing. This course includes the presentation and discussion of cultural material such as magazines, films, records, and other audio-visual items.
- CHIN 2002 Intermediate Chinese** 3 cr.  
Prerequisite: CHIN 2001 or consent of instructor. Continuation of the development of all four basic language skills: speaking, understanding, reading, and writing. The course includes the presentation and discussion of cultural material such as magazines, films, records, and other audio-visual items.

## Cooperative Education

- COBA 1 Cooperative Education For Business Administration Majors** 0 cr.  
Prerequisites: acceptance into the Cooperative Education Program and by an employing organization.
- COED 1 Cooperative Education For Education Majors** 0 cr.  
Prerequisites: acceptance into the Cooperative Education Program and by an employing organization
- COEN 1 Cooperative Education For Engineering Majors** 0 cr.  
Prerequisites: acceptance into the Cooperative Education Program and by an employing organization.
- COGS 1 Cooperative Education For General Studies Students** 0 cr.  
Prerequisites: acceptance into the Cooperative Education Program and by an employing organization.
- COLA 1 Cooperative Education for Liberal Arts Majors** 0 cr.  
Prerequisites: acceptance into the Cooperative Education Program and by an employing organization.
- COSC 1 Cooperative Education for Science Majors** 0 cr.  
Prerequisites: acceptance into the Cooperative Education Program and by an employing organization.

## Computer Science

- CSCI 1000 Introduction to Computers** 3 cr.  
Prerequisite: eligibility for enrollment in MATH 1111. Majors in the College of Sciences may not use this course for science elective credit. Other majors should consult with their colleges concerning use of this course toward degree credit. This course is an introduction to what computers are and how they can be used. A major emphasis is on providing hands-on laboratory experience using software packages such as word processing, spreadsheets, and database management systems. Lecture topics include history of computers, organization of a computer system, computer terminology, input-output devices and media, software development and programming, future trends, and effects on human society.
- CSCI 1060 Introduction to Programming** 3 cr.  
Offered each semester and summer session. Prerequisite: MATH 1111 with a grade of C or better recommended or consent of department. Introduces and applies computer techniques needed to solve problems in a procedure-oriented language. Develops programming skill necessary for students to utilize the digital computer in carrying out computational assignments for other courses. Except as provided for in individual college policies a student may receive credit in only one of CSCI 1060, 1201, and 1583.
- CSCI 1201 Introduction to Programming for Engineering and Scientific Applications** 3 cr.  
Prerequisite: MATH 1112. An introductory programming course oriented toward numerical applications. Except as provided for in individual college policies a student may receive credit in only one of CSCI 1060, 1201, and 1583.
- CSCI 1581 Software Design and Development I Laboratory** 1 cr.  
Prerequisite: Concurrent registration in CSCI 1583 is required. Two hours of laboratory each week to accompany CSCI 1583. Applications, exercises, and explorations in methodologies, software design, and development.
- CSCI 1583 Software Design and Development I** 3 cr.  
Prerequisite: MATH 1125 with a grade of C or better or consent of department; concurrent registration in CSCI 1581 is required. An introduction to software design and development using an object-oriented approach. Topics include designing specifying implementing and testing elementary classes; developing simple algorithms

in an object-oriented programming language; programming by contract; implementing fundamental structural relations between classes. Intended primarily for Computer Science majors. Three hours of lecture. Except as provided for in individual college policies a student may receive credit in only one of CSCI 1060, 1201, and 1583.

- CSCI 2125 Data Structures** 3 cr.  
Prerequisites: CSCI 2120, 2121, and MATH 2721. A continuation of CSCI 2120 and 2121 with emphasis on the design and implementation of structured data objects such as lists, stacks, queues, trees, and graphs; storage allocation for structured data objects.
- CSCI 2150 File Processing** 3 cr.  
Prerequisite: credit or concurrent registration in CSCI 2125. An introduction to file structure, processing, and design. Topics include functions of a file system, physical and logical organization of files, file design and analysis, and file processing methods.
- CSCI 2271 Mathematical Programming** 3 cr.  
(Same as Computer Science 2271) Fall semester. Prerequisites: Mathematics 2109 or 2112 and Computer Science 1060 or consent of department. On-line programming techniques on computer terminals. Development and programming of algorithms of an intermediate nature for curve fitting, matrix algebra, solution of ordinary differential equations, zeros of equations, and numerical integration. Data analysis and floating point arithmetic.
- CSCI 2450 Machine Structure and Assembly Language Programming** 3 cr.  
Offered each semester. Prerequisites: CSCI 1060, 1201, or 1583. Assembly language programming and a survey of computer organization; structure of assemblers and loaders; introduction to operating systems.
- CSCI 3080 Ethics in the Computing Profession** 1 cr.  
Prerequisites: any CSCI 4000-level course or consent of department. Professional societies; codes of ethics; accreditation and certification; liability; software piracy; information and property; copyright; computer crime; data bank privacy; the Data Protection Act; monopoly and anti-trust questions; robotics and employment issues; VDT's and public health issues; and Trans-National Data Flow.
- CSCI 3090 Undergraduate Seminar** 1 cr.  
Offered each semester. Prerequisite: consent of department. A seminar with topics presented by students, faculty, and guests. Students registering for the course must normally make a presentation to satisfy credit requirements. May be repeated for credit.
- CSCI 3097 Problems in Computer Science** 1-3 cr.  
Offered each semester and summer session. Prerequisites: CSCI 3401 an average of B in all CS courses attempted, and the consent of the department. May be repeated up to a maximum of six credits but only three may be counted towards satisfying CS elective requirements. Directed effort on some relatively complex computer science projects. Section number will correspond with credit to be earned.
- CSCI 3099 Senior Honors Thesis** 1-6 cr.  
Prerequisite: consent of department and Director of University Honors Program. Senior honors thesis research in computer science under the direction of a faculty member. May be repeated for a total of six credits. May not be used as a computer science elective.
- CSCI 3301 Computer Organization** 3 cr.  
Prerequisites: CSCI 2120 and 2450 or consent of department. Basic sequential circuits; data representation and transfer; digital arithmetic; digital storage and accessing; control functions; input-output facilities; system organization. Students will be required to carry out digital circuit laboratory assignments.

- CSCI 3401 System Programming Concepts** 3 cr.  
Prerequisites: CSCI 2125, 2150, and 2450 or consent of department. Introduction to the concepts and tools used in systems programming. Detailed examination of computer architecture and computer system services from a user's point of view. Topics include use of operating system services such as process control services and the file management system, memory management, input-output, and command languages.
- CSCI 3601 Introduction to Database Management Systems** 3 cr.  
Prerequisite: CSCI 2103 or 2120 or 2601 and MATH 1140 or 2107 or 2111 or 2721. May not be used to satisfy the computer science elective requirement for the curriculum in Computer Science. A study of the modeling, design, and implementation of database systems. Topics include the entity-relationship model, the relational database model, object-oriented database models, also data normalization, data description, and retrieval using query languages such as SQL, and database software development using current CASE tools.
- CSCI 3611 Systems Analysis and Software Design** 3 cr.  
Prerequisite: Computer Science 2601 or 2120 or consent of department. Introduction to the analysis, design, and implementation of large software systems. Topics include methods and tools for the structuring and modular design of large systems; organization and techniques of team programming; design evaluation and validation.
- CSCI 4101 Analysis of Algorithms** 3 cr.  
Prerequisite: CSCI 2125 or consent of department. Precise definition of the concept of an algorithm; techniques for algorithm verification; analyzing algorithm performance; applications to practical algorithms.
- CSCI 4103 Formal Languages and Automata** 3 cr.  
(Math 4527 and CSCI 4103 are cross-listed) Prerequisite: CSCI 2125 or MATH 3512 or consent of department. Introduction to formal languages and their relation to automata; the Chomsky hierarchy of classes of grammars; normal forms; recognition of languages by automata; parsing classes of context free languages; decidability problems.
- CSCI 4125 Data Models** 3 cr.  
Prerequisite: Computer Science 2125 and 2150 or consent of department. Methods, structures, and algorithms used for the organization, representation, and manipulation of large data bases; design and implementation of data base management systems.
- CSCI 4271 Advanced Mathematical Programming** 3 cr.  
(Same as Computer Science 4271) Prerequisites: Mathematics 2271 and either Mathematics 4102 or 4251 or consent of department. Algorithms and numerical techniques for advanced work in mathematical programming. Approximations by interpolation and least squares, orthogonal polynomials, matrix inversion and other selected topics. General information handling languages with applications to symbol manipulations and recursive formulas.
- CSCI 4302 Computer Systems Design** 3 cr.  
(ENEE 3583 and CSCI 4302 are cross-listed) Prerequisites: ENEE 2582 and 2586, or CSCI 3301 and 3401, or consent of department. The design process of digital computer systems is studied from the instruction set level, system architecture level, and digital logic level. Topics include machine organization, register transfer notation, processor design, memory design, and input/output considerations. Includes semester project.
- CSCI 4311 Computer Networks and Telecommunications** 3 cr.  
Prerequisites: Computer Science 2125 and 2450 or consent of department. A study of resource-sharing computer networks. Topics include network technology and topology, communications media and their impact on network performance, and resource sharing requirements and capabilities.
- CSCI 4401 Principles of Operating Systems I** 3 cr.  
Prerequisites: CSCI 3401 or consent of department. An introduction to the organization of various types of operating systems; machine structure and the functions of an operating system; multiprogramming and time-sharing environments; memory management and resource allocation; virtual memory concepts; the file system and IO device handling; protection and error recovery.
- CSCI 4402 Principles of Operating Systems II** 3 cr.  
Prerequisite: CSCI 4401 or consent of department. A continuation of CSCI 4401 with emphasis on time-sharing, multiprocessing, and virtual system environments; performance measurement and evaluation; system simulation; developments in Operating System theory.
- CSCI 4501 Programming Language Structure** 3 cr.  
Prerequisite: CSCI 2125 or consent of department. A study of the concepts of programming languages as realized in a variety of commonly used languages, with emphasis on language definition and structure.
- CSCI 4510 An Introduction to Translator Construction** 3 cr.  
Prerequisites: CSCI 4103 and 4501 or consent of department. The design and implementation of translators for programming languages. The course will cover the topics of lexical and syntactic analysis, translation, code generation, and code optimization, as well as the design and actual implementation of a compiler for a simple block-structured language such as a subset of Pascal or Ada.
- CSCI 4525 Introduction to Artificial Intelligence** 3 cr.  
Prerequisite: CSCI 2125 or consent of department. Introduction to the problem domain of artificial intelligence and the methods used to solve those problems. Topics include knowledge representation, search strategies, and surveys of principal subareas of artificial intelligence such as expert systems, natural language processing, reasoning systems, games, learning, and vision. Programming assignments in a current artificial intelligence language will be required.
- CSCI 4601 Data Base Management Systems** 3 cr.  
Prerequisite: CSCI 2120 or 2601 or consent of department. A study of the use, design, and implementation of data bases using data base management systems. Topics include current DBMS implementations and data description, manipulation, and inquiry languages.
- CSCI 4621 Computer Security** 3 cr.  
Prerequisites: CSCI 2125 and any one of the following: CSCI 4401 or 4125 or consent of department. Overview of security problems; physical security methods; security in multi-user systems; password mechanisms; terminal security; file security; encryption major approaches including both private- and public-key encryption methods; security in data bases access control methods and encryption; statistical databases; operating systems security; security kernels; and the Bell-Lapadula Model.
- CSCI 4631 Principles of Computer Graphics** 3 cr.  
Prerequisite: CSCI 2125 and MATH 2511. Types of graphics hardware point plotting vector and raster technologies; techniques for defining images point vector and raster-based approaches; graphical data and program structures; image manipulation two- and three-dimensional transformations; techniques for producing perspective; hidden line removal; shading; clipping; and windowing. Applications in several fields.
- CSCI 4690 Topics in Applied Computing** 3 cr.  
Prerequisite: consent of department. Topics will vary from semester to semester. Offerings are of topical, pragmatic interest to computing practitioners. May not be used to satisfy the computer science

- elective requirement for the curriculum in Computer Science. (May be repeated for credit.)
- CSCI 4990 Special Topics in Computer Science** 3 cr.  
Prerequisite: CSCI 2125 and 2150 and consent of department. Topics will vary from semester to semester. This course may be repeated once for credit.
- CSCI 6001 Software Development** 6 cr.  
Prerequisites: acceptance into the computer science graduate program; completion of an introductory computer programming course and MATH 2107 or 2111; and consent of instructor. This course is intended for students who have been accepted into the computer science graduate program but who arrive with limited course work in computer science. An intensive course with six contact hours a week plus programming assignments. Numerous topics are covered with a general emphasis on data structures and their application toward the modular development of large software systems. CSCI 6001 will not be counted toward fulfillment of degree requirements.
- CSCI 6090 Advanced Problems in Computer Science** 1-3 cr.  
Prerequisite: consent of department. A projects course of independent work under the direction of a faculty supervisor whose sponsorship must be obtained in advance. May be repeated for up to a total of three credits. Cannot be used for degree credit by students who elect to fulfill the thesis degree requirements. Section number will correspond with credit to be earned.
- CSCI 6101 Theory of Algorithms and their Complexity** 3 cr.  
Prerequisites: Computer Science 2125 and Computer Science 4101. Advanced study of algorithms and their complexity; the notions of time and space complexity; design methods, including divide and conquer, and the greedy method; polynomial and nondeterministic polynomial algorithms; the class of NP-complete algorithms.
- CSCI 6110 Applied Combinatorics and Graph Theory** 3 cr.  
Prerequisites: Computer Science 2125 and 4101 or consent of department. A study of combinatorial and graph theoretic techniques for complexity analysis. Includes generating functions, recurrence relations, Polya's theory of counting, planar directed and undirected graphs, and NP-complete problems of combinatorial or graph-theoretic nature. Application of techniques to analysis of algorithms in graph theory, as well as more general problems, such as sorting and searching.
- CSCI 6120 Theory of Computation** 3 cr.  
Prerequisites: Computer Science 2125 or 4102 or consent of department. A survey of formal models for computation. Includes Turing machines, partial recursive functions, recursive and recursively enumerable sets, the recursion theorem, Church's thesis, Godel numbering, computational complexity, uncomputability, intractability, and unsolvability.
- CSCI 6130 Data Encryption and Cryptology** 3 cr.  
Prerequisites: CSCI 4101 and MATH 2511 or consent of instructor. A study of the methods used in data encryption and related cryptologic problems. The history of early cryptography, including the Caesar shift, Vigenere table, Playfair square, and Enigma machines. Modern cryptographic problems, including the Data Encryption Standard, the key management problem, the public-key encryption, knapsack methods, number-theoretic methods, and the Rivest-Shamir-Adelman public-key cryptosystem, digital signature, the Digital Signature Standard, and cryptanalysis of knapsacks. Other cryptologic problems, including threshold schemes, zero-knowledge protocols, mental poker, and implementations on uniprocessor machines, networks, and parallel machines.
- CSCI 6140 Formal Languages** 3 cr.  
Prerequisite: CSCI 4103 or consent of department. Theory and application of formal language systems and automata. Emphasis will be placed on formal systems, the languages they generate, and techniques used to parse strings in those languages.
- CSCI 6230 Distributed Database System** 3 cr.  
Prerequisites: Computer Science 4401 and, 4125 . A consideration of the problems and opportunities inherent in distributed databases on a network computer system. Includes distributed database design, optimization of access strategies, distributed concurrency control, recovery in distributed databases, distributed database administration, commercial systems.
- CSCI 6330 VLSI Circuit Design** 3 cr.  
Prerequisite: CSCI 4302 and 4401. A review of microelectronics and an introduction to MOS technology, basic electrical properties of MOS circuits, MOS circuit design processes, subsystem design and layout, scaling of MOS circuits, aspects of system design and timing, structured design and testing, MOS design projects.
- CSCI 6331 Advanced VLSI Design** 3 cr.  
Prerequisite: CSCI 6330 or consent of department. Design of large digital VLSI (Very Large Scale Integration) systems using modern CAD tools and state-of-the-art testing and characterization systems.
- CSCI 6340 Parallel Machines and non-von Neumann Architectures** 3 cr.  
Prerequisite: CSCI 4401 and 4302 or consent of department. An investigation of modern parallel processing computers and generally those designed on non-vonNeumann architectures.
- CSCI 6410 Performance Analysis of Computer Systems** 3 cr.  
Prerequisite: CSCI 4401 or consent of the department. This course will examine models for the analysis of performance of computer systems. Topics include stochastic processes, discrete and continuous Markov chains, queuing models, and stochastic Petri models. These models will be applied to uni- and multiprocessor systems, including crossbar multiprocessor architectures, single- and multi-bus multiprocessors with external and distributed common memory.
- CSCI 6450 Principles of Distributed Systems** 3 cr.  
Prerequisite: CSCI 4401. A study of the concepts and design principles used in the construction of distributed computer systems. Topics include architecture and design goals; distributed time management; state and deadlock detection; name resolution; synchronization, mutual exclusion, and communication; collaborating servers; protection and security; error recovery.
- CSCI 6501 Formal Methods in Programming Languages** 3 cr.  
Prerequisite: CSCI 4501. Formal definitions and specifications for the semantics of programming languages including lambda-calculus, domain theory, and denotational descriptions of common programming language concepts.
- CSCI 6510 Compiler Construction** 3 cr.  
Prerequisite: CSCI 4510 or consent of department. Emphasis will be placed on the implementation of programming languages. Review of lexical, syntactic and semantic analysis. Topics will include code generation, optimization, run-time structures and support, attribute grammars, table-driven code generators, and data flow analysis.
- CSCI 6601 Advanced Artificial Intelligence** 3 cr.  
Prerequisite: Computer Science 4525. This course will cover topics in machine learning and computer vision. The section on machine learning will cover such topics as learning from examples, modeling human learning strategies, knowledge acquisition for expert systems, learning by analogy, learning from instruction, and

- conceptual data analysis. The section on vision will discuss the early processing of visual data, edge detection, texture, shape, and representation and recognition of two- and three-dimensional structures.
- CSCI 6602 Expert Systems** 3 cr.  
Prerequisite: CSCI 4525 or consent of department. A study of the techniques, tools, and applications of expert systems. Topics include the architecture of expert systems, knowledge representation, drawing inferences, expert system tools, developing small and large knowledge systems, difficulties with expert system development, and the expert systems market. This course will also involve the design and implementation of a small expert system using a commercially available expert system shell.
- CSCI 6631 Advanced Computer Graphics** 3 cr.  
Prerequisite: CSCI 4631. Commonly-used data structures for graphics displays and raster scan graphics algorithms for line and circle drawing; polygon filling; antialiasing; curve fitting; surface fitting; two- and three-dimensional clipping, including clipping to arbitrary convex volumes; hidden-line and hidden-surface removal, including ray tracing; rendering, including local and global illumination models, texture shadows, transparency, and color effects.
- CSCI 6640 Computational Geometry** 3 cr.  
Prerequisite: CSCI 4101 or consent of department. Using the fields of pattern recognition, computer graphics, image processing, and algorithm design for source material, this course will concentrate on algorithms and techniques for geometric computations. Topics include: computation of convex hulls, decomposition of polygons, polygon approximation, planar visibility, and other current topics of research. Students will be required to design and analyze a number of algorithms.
- CSCI 6990 Topics In Advanced Computer Science** 3 cr.  
Prerequisite: consent of department. This is an advanced graduate-level course whose topics change from semester to semester. The prerequisites change as dictated by the topic. This course may be repeated once for credit.
- CSCI 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- CSCI 7040 Examination or Thesis Only No Credit** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- CSCI 4101G Analysis of Algorithms** 3 cr.  
Prerequisite: CSCI 2125 or consent of department. Precise definition of the concept of an algorithm; techniques for algorithm verification; analyzing algorithm performance; applications to practical algorithms.
- CSCI 4103G Formal Languages and Automata** 3 cr.  
(Math 4527 and CSCI 4103 are cross-listed) Prerequisite: CSCI 2125 or MATH 3512 or consent of department. Introduction to formal languages and their relation to automata; the Chomsky hierarchy of classes of grammars; normal forms; recognition of languages by automata; parsing classes of context free languages; decidability problems.
- CSCI 4125G Data Models** 3 cr.  
Prerequisite: Computer Science 2125 and 2150 or consent of department. Methods, structures, and algorithms used for the organization, representation, and manipulation of large data bases; design and implementation of data base management systems.
- CSCI 4271G Advanced Mathematical Programming** 3 cr.  
(Same as Computer Science 4271) Prerequisites: Mathematics 2271 and either Mathematics 4102 or 4251 or consent of department. Algorithms and numerical techniques for advanced work in mathematical programming. Approximations by interpolation and least squares, orthogonal polynomials, matrix inversion and other selected topics. General information handling languages with applications to symbol manipulations and recursive formulas.
- CSCI 4302G Computer Systems Design** 3 cr.  
(ENEE 3583 and CSCI 4302 are cross-listed) Prerequisites: ENEE 2582 and 2586, or CSCI 3301 and 3401, or consent of department. The design process of digital computer systems is studied from the instruction set level, system architecture level, and digital logic level. Topics include machine organization, register transfer notation, processor design, memory design, and input/output considerations. Includes semester project.
- CSCI 4311G Computer Networks and Telecommunications** 3 cr.  
Prerequisites: Computer Science 2125 and 2450 or consent of department. A study of resource-sharing computer networks. Topics include network technology and topology, communications media and their impact on network performance, and resource sharing requirements and capabilities.
- CSCI 4401G Principles of Operating Systems I** 3 cr.  
Prerequisites: CSCI 3401 or consent of department. An introduction to the organization of various types of operating systems; machine structure and the functions of an operating system; multiprogramming and time-sharing environments; memory management and resource allocation; virtual memory concepts; the file system and IO device handling; protection and error recovery.
- CSCI 4402G Principles of Operating Systems II** 3 cr.  
Prerequisite: CSCI 4401 or consent of department. A continuation of CSCI 4401 with emphasis on time-sharing, multiprocessing, and virtual system environments; performance measurement and evaluation; system simulation; developments in Operating System theory.
- CSCI 4501G Programming Language Structure** 3 cr.  
Prerequisite: CSCI 2125 or consent of department. A study of the concepts of programming languages as realized in a variety of commonly used languages, with emphasis on language definition and structure.
- CSCI 4510G An Introduction to Translator Construction** 3 cr.  
Prerequisites: CSCI 4103 and 4501 or consent of department. The design and implementation of translators for programming languages. The course will cover the topics of lexical and syntactic analysis, translation, code generation, and code optimization, as well as the design and actual implementation of a compiler for a simple block-structured language such as a subset of Pascal or Ada.
- CSCI 4525G Introduction to Artificial Intelligence** 3 cr.  
Prerequisite: CSCI 2125 or consent of department. Introduction to the problem domain of artificial intelligence and the methods used to solve those problems. Topics include knowledge representation, search strategies, and surveys of principal subareas of artificial intelligence such as expert systems, natural language processing, reasoning systems, games, learning, and vision. Programming assignments in a current artificial intelligence language will be required.
- CSCI 4601G Data Base Management Systems** 3 cr.  
Prerequisite: CSCI 2120 or 2601 or consent of department. A study of the use, design, and implementation of data bases using data base management systems. Topics include current DBMS

implementations and data description, manipulation, and inquiry languages.

**CSCI 4621G Computer Security** 3 cr.  
Prerequisites: CSCI 2125 and any one of the following: CSCI 4401 or 4125 or consent of department. Overview of security problems; physical security methods; security in multi-user systems; password mechanisms; terminal security; file security; encryption major approaches including both private- and public-key encryption methods; security in data bases access control methods and encryption; statistical databases; operating systems security; security kernels; and the Bell-Lapadula Model.

**CSCI 4631G Principles of Computer Graphics** 3 cr.  
Prerequisite: CSCI 2125 and MATH 2511. Types of graphics hardware point plotting vector and raster technologies; techniques for defining images point vector and raster-based approaches; graphical data and program structures; image manipulation two- and three-dimensional transformations; techniques for producing perspective; hidden line removal; shading; clipping; and windowing. Applications in several fields.

**CSCI 4690G Topics in Applied Computing** 3 cr.  
Prerequisite: consent of department. Topics will vary from semester to semester. Offerings are of topical, pragmatic interest to computing practitioners. May not be used to satisfy the computer science elective requirement for the curriculum in Computer Science. (May be repeated for credit.)

**CSCI 4990G Special Topics in Computer Science** 3 cr.  
Prerequisite: CSCI 2125 and 2150 and consent of department. Topics will vary from semester to semester. This course may be repeated once for credit.

### Developmental Mathematics

**DEVM 106 From Arithmetic to Algebra** 3 cr.  
Offered each semester. Placement into DEVM 0106 is based on a student's performances on the ACT and on a departmental diagnostic test. A brief study of the arithmetic of signed numbers and an introduction to polynomial algebra. Operations with real numbers and with polynomials; linear equations and inequalities and their graphs; systems of linear equations; special products and factoring; word problems. DEVM 0106 will not be counted toward fulfillment of degree requirements.

**DEVM 107 Pre-College Algebra** 3 cr.  
Offered each semester. Prerequisite: DEVM 0106 or sufficiently high scores on the ACT and on a departmental diagnostic test. A brief review of certain topics selected from DEVM 0106; operations with algebraic fractions; fractional quadratic and quadratic-type equations; absolute value and absolute value equations and inequalities; exponents and radicals; word problems. DEVM 0107 will not be counted toward fulfillment of degree requirements.

### Drama and Communications

**DRCM 1000 The Theatre** 3 cr.  
An introductory study of drama and theatre. Focus is on the artists and technicians who create theatre the history of theatre, and the components involved in the production process. This class does not involve the actual production of a play or performance. Drama and Communications majors cannot receive degree credit for both DRCM 1000 and 1005.

**DRCM 1005 Introduction to Drama** 3 cr.  
Offered only in the fall semester. Primarily for those students with an emphasis in theatre. Study of different types of plays from the

Greek Theatre to the twentieth century. Emphasis on interpreting scripts for the stage. Must be taken concurrently with DRCM 1006.

**DRCM 1006 Introduction to Drama Laboratory** 1 cr.  
Offered only in the fall semester. Hands-on experience in one or more areas of departmental production -film, video, radio, theatre-(performance, technical production, production management). Areas will vary each semester. Must be taken concurrently with DRCM 1005.

**DRCM 1100 Technical Production I** 3 cr.  
Offered only in the spring semester. An introduction to the design elements of scenery and properties for the stage, technical drawing, techniques and execution. Three to five laboratory hours per week required in current departmental productions in addition to lecture.

**DRCM 1110 Basic Design for the Performing and Communication Arts** 3 cr.  
Prerequisite: DRCM 1600. Primarily for majors in communication and speech education. Introduction to the problems and principles of visual design in the performing and communication arts. Four to six laboratory hours per week required in studio design projects. Must be taken concurrently with DRCM 1111.

**DRCM 1111 Basic Design Laboratory** 1 cr.  
Hands-on experience in one or more areas of departmental production -film, video, radio, theatre- (performance, technical production, production management). Areas will vary each semester. Must be taken concurrently with DRCM 1110.

**DRCM 1300 Acting I-Beginning** 3 cr.  
An introduction to the art of acting through training imagination, discipline, body, and voice of the beginning actor. Emphasis is on improvisation, exercises related to specific acting techniques, auditions, and scene study.

**DRCM 1310 Stage Makeup** 3 cr.  
Offered only in fall semester. Prerequisite: consent of department. The study and practice in the techniques of types and styles of makeup for the stage and screen.

**DRCM 1600 Introduction to Mass Communications** 3 cr.  
History and development, structure, roles, and functions of mass media in society. Standards for evaluating mass media.

**DRCM 2000 Field Research in the Arts** 1-3 cr.  
(DRCM 2000, FA 2000, and MUS 2000 are cross-listed) Prerequisite: consent of department. Special research project in the arts involving field experience and study outside the city of New Orleans. Advance preparation for the project will include conference with or lecture by the faculty and readings in the specific areas to be studied. The study trip will consist of attendance at a minimum of four theatrical or musical performances or a minimum of eight hours spent in visits to exhibits or museums for each hour of credit. A follow-up paper on a research topic inspired by the trip will be required. May be repeated for up to six hours of credit. Credit will be given for only DRCM 2000, FA 2000, or MUS 2000 for the same trip.

**DRCM 2080 Summer Theatre Workshop** 3 cr.  
Prerequisite: consent of department. Concentrated study in connection with UNO summer theatre productions, including lectures, discussions, and practical experience on technical crews and in rehearsal. (DRCM 2080 and 2081 may not be taken simultaneously.)

**DRCM 2081 Summer Theatre Workshop** 3 cr.  
Prerequisites: consent of the department. Concentrated study in connection with UNO summer theatre productions, including lectures, discussions and practical experience on technical crews and in rehearsal. (DRCM 2080 and 2081 may not be taken simultaneously)

- DRCM 2100 Technical Production II** 3 cr.  
Offered only in the fall semester. Prerequisite: DRCM 1100. An introduction to the elements of design and execution of costumes and lighting for the stage. Three to five laboratory hours per week required in current departmental productions in addition to lecture.
- DRCM 2120 Methods and Materials of Stagecraft** 3 cr.  
Prerequisite: DRCM 1110 and 2100. Basic techniques in the practical use of tools, materials, and equipment for stage, screen, and television settings. Three to five laboratory hours per week required in current departmental productions in addition to lecture.
- DRCM 2160 Costume Crafts and Techniques** 3 cr.  
Prerequisite: DRCM 1100 and 2100. Techniques in construction of costumes for stage and screen including pattern drafting and cutting and work with various synthetic and experimental materials. Three to five laboratory hours per week required in current departmental productions in addition to lecture.
- DRCM 2200 Introduction to Playwriting** 3 cr.  
A consideration of the art and craft of writing for the theatre. Study of playwriting as a literary genre; writing of one-act plays.
- DRCM 2250 Screenwriting** 3 cr.  
Prerequisite: DRCM 2510 or 2550 or consent of department. Writing for film and television, emphasizing the format and technical requirements of writing advertising, documentary, and dramatic scripts. Students will write scripts and in laboratory sessions will develop the visualization of their scripts using film and video equipment provided by the department.
- DRCM 2265 Introduction to Computered Aided Design for the Performing Arts** 3 cr.  
Prerequisites: DRCM 1100 and 2100 or consent of department. An introductory course for students with a background in technical production in theater, film, and video, using the computer to aid in drawing, drafting, designing, and printing. The course is structured around the Macintosh computer and will use MacDraw and CAD software along with a drafting plotter and laser printer to produce working drawings, ground plans, sketches, elevations, and a choice of scenic perspectives, lighting plots, or costume patterns. Students will also be allowed to explore CAD alternatives such as those available for IBM and compatible computers. The class will be a combination lecture and laboratory.
- DRCM 2300 Voice Training for the Actor - I** 3 cr.  
Prerequisite: DRCM 1300. The construction of an aesthetic philosophy of voice for the actor. This study will include exercises in the techniques of effective stage speech with an emphasis on discipline, self-awareness used to attain control, flexibility, and natural vocal abilities for use in media and on the stage.
- DRCM 2310 Oral Interpretation** 3 cr.  
Prerequisite: DRCM 1300. Introduction to the art of vocal interpretation of dramatic and non-dramatic literature. This course is particularly designed for developing the vocal skills of actors, broadcast journalists, and others who read material aloud.
- DRCM 2330 Acting II Intermediate** 3 cr.  
Prerequisite: DRCM 1300 and 2320 or consent of department. Intensive training in the fundamental process of preparing a role including self-knowledge, script analysis, and the application of techniques of objective/action/motivation in characterization. Improvisation, critiques, exercises, performance attendance, and scene study.
- DRCM 2335 Performance for Broadcast Media** 3 cr.  
Prerequisite: DRCM 1300. A study devoted to the development of on-camera and on-microphone techniques and skills for television and radio performers. This course is designed for students who plan to seek careers as on-air broadcast performers. Past and current presentational styles and techniques are explored through lectures, demonstrations, and analysis of current professionals on the local, regional, and network levels of television and radio.
- DRCM 2380 Directing I - Beginning** 3 cr.  
Prerequisite: DRCM 1300 and 2320 or consent of department. Fundamentals of script interpretation and directing.
- DRCM 2510 Introduction to Cinema Techniques** 3 cr.  
Fundamentals of motion picture production. Super-8mm films are produced, edited, screened, and analyzed. Attention is also given to professional film-making techniques. Two hours lecture and two hours laboratory. A student may not receive credit for both DRCM 2510 and 2511.
- DRCM 2511 Introduction to Professional Motion Picture Production** 3 cr.  
An introduction to motion picture production with an emphasis on professional techniques of feature and commercial film making. Lectures, demonstrations, analyses of professional films. Three hours of lecture. A student may not receive credit for both DRCM 2510 and 2511.
- DRCM 2550 Introduction to Television Techniques** 3 cr.  
Prerequisite: DRCM 1600 or equivalent. Fundamentals of television programming and production. Scripting, camera, and directing techniques are stressed. Short video tapes are produced and analyzed by the class. One hour of lecture and four hours of laboratory.
- DRCM 2600 Language, Speech, and Hearing for Teachers** 3 cr.  
(DRCM 2600 and EDSP 2600 are cross-listed). A survey of the normal development and the common disorders of speech, language, and hearing. Designed to enable teachers a) to treat those disorders which can be handled in the classroom and b) to recognize those that should be referred to other professionals.
- DRCM 2650 Oral Communications** 3 cr.  
An introductory course in oral communications. Chief emphasis is on communication to the small group. Attention is given to public speaking, interpersonal communication, interviewing, and group discussion.
- DRCM 2660 Discussion and Debate** 3 cr.  
Prerequisite: DRCM 2650. Introduction to the fundamentals of public debate and group discussion. Successful completion of this satisfies the general degree requirement for oral competency.
- DRCM 2670 Sign Language** 3 cr.  
An introduction to basic practices in sign language for the deaf. Individual areas of emphasis will include an introduction to Ameslan, natural signs, manual alphabet, cardinal and ordinal numbers, indexing, name signs, fingerspelling, word order, past and future tenses, gestures, pantomime, syntax, idioms, translation and vocabulary-building exercises. Periodically videotapes will be made of each student in performance.
- DRCM 2700 Introduction to Journalism** 3 cr.  
(DRCM 2700 and JOUR 2700 are cross-listed) Introduction to news gathering, copy, and continuity composition, basic skills and techniques of journalism in public relations, advertising, and the mass media. (Not available for credit for Speech-Education degree.)
- DRCM 2750 Broadcast News** 3 cr.  
Prerequisites: DRCM 1600 and 2550. An introduction to news segments in radio and television. Concentration on the effective use of sound and pictures to inform the public. A study of broadcast news style of writing. Lectures, demonstrations, and analysis of current

- trends. Course geared toward those seeking a career in broadcast journalism and/or media relations.
- DRCM 2755 Television News Packaging** 3 cr.  
Prerequisite: DRCM 2750. An advanced course for those having completed Introduction to Broadcast News. Concentration on assembling elements of the complete video news story; pictures and sound, including interviews and standups. Geared for hard news and features. Lectures, demonstrations, and analysis of current trends. Course designed for those seeking career opportunities in the broadcast-cable television news industry.
- DRCM 2770 Promotion, Publicity, and Propaganda in the Mass Media** 3 cr.  
Procedures and theories of mass persuasion in the media. Attention is given to the manner in which such devices as radio and television commercials and dramatic shows, films, and various print media are used to influence mass behavior.
- DRCM 2771 Media Graphics** 3 cr.  
Prerequisite: DRCM 1110 or FA 1011 or consent of department. An introductory study of the methods of design and layout for the mass media. Four to six laboratory hours per week required in studio design projects.
- DRCM 2791 Independent Study** 1 cr.  
(DRCM 2791 and JOUR 2791 are cross-listed) Admission by consent of department. Reading, conferences, and preparation of articles, reports, and special projects concerning print journalism under direction of a member of the journalism faculty.
- DRCM 2792 Independent Study** 1 cr.  
(DRCM 2791 and JOUR 2791 are cross-listed) Admission by consent of department. Reading, conferences, and preparation of articles, reports, and special projects concerning print journalism under direction of a member of the journalism faculty.
- DRCM 2793 Independent Study** 1 cr.  
(DRCM 2791 and JOUR 2791 are cross-listed) Admission by consent of department. Reading, conferences, and preparation of articles, reports, and special projects concerning print journalism under direction of a member of the journalism faculty.
- DRCM 2830 Stage Movement for the Actor - I** 3 cr.  
Prerequisite: DRCM 1300. The construction of an aesthetic philosophy of movement for the actor. Emphasis on relaxation, self-awareness, flexibility, and imagination to develop characterization for use in the media and on stage.
- DRCM 2900 Introduction to Theatre Management** 3 cr.  
This course is designed to provide an introduction to producing in the American theatre, especially in the areas of commercial resident theatre, non-commercial community, and educational theatre organizations. Special attention will be given to history of producing, planning, theatre architecture, staffing, budget control, and public relations. A laboratory project will be provided.
- DRCM 2950 Stage Management for the Theater** 3 cr.  
Traces the process and tools for the professional stage manager from pre-production work through closing night. The student will, upon completion of the course, be capable of steering a production through its various stages.
- DRCM 3090 Independent Study** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and reports under the direction of a member of the drama and communications faculty.
- DRCM 3091 Independent Study** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and reports under the direction of a member of the drama and communications faculty.
- DRCM 3092 Independent Study** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and reports under the direction of a member of the drama and communications faculty.
- DRCM 3098 Senior Practicum** 1 cr.  
Prerequisite: 21 hours of Drama and Communications courses. Required of all senior Drama and Communications majors. Practical work in theatre and media.
- DRCM 3099 Senior Honors Thesis** 3 cr.  
Prerequisite: consent of department and the honors program. Directed research under a Drama and Communications faculty member culminating in a written thesis to meet the requirements for graduation with Honors in Drama and Communications, and, if applicable, University Honors. May be repeated once for credit. Offered fall and spring semesters only.
- DRCM 3330 Acting III - Advanced** 3 cr.  
Fall semester. Prerequisite: DRCM 2330 or consent of department. Intensive training in actor's methods of character development, moment-to-moment reality, and rehearsal principles. Extensive critiques, exercises, and scene study. May be repeated once for credit.
- DRCM 3400 The Black Experience on Stage and Screen** 3 cr.  
An introduction to and survey of the development of the image of the Black American in the entertainment media.
- DRCM 3595 Academic Year Abroad: Special Topics in Drama and Communications** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.
- DRCM 3700 Advanced Journalism** 3 cr.  
Prerequisites: DRCM 1110, 1111, 2770, and 2771. This course uses the fundamental principles of communication theory and develops the skills needed to solve communication problems through the design of persuasive verbal, written, and visual messages. The major emphasis is placed on the development of message design strategies appropriate for audiences within the mass media.
- DRCM 3760 Educational Journalism** 3 cr.  
(DRCM 3760 and JOUR 3760 are cross-listed) The editorial, business, and mechanical techniques of producing school publications. Designed for school publications advisers.
- DRCM 3770 Message Design for the Mass Media** 3 cr.  
Prerequisites: DRCM 1110, 1111, 2770, and 2771. This course uses the fundamental principles of communication theory and develops the skills needed to solve communication problems through the design of persuasive verbal, written, and visual messages. The major emphasis is placed on the development of message design strategies appropriate for audiences within the mass media.
- DRCM 3771 UNO Communications Group** 1 cr.  
Prerequisites: DRCM 1110, 1111, 2770, 3770, and consent of department. The UNO Communications Group is a lab counterpart to UNO Video and Radio UNO. The objective of the course is practical application of the theories of verbal and visual communication through the development of strategies and messages. May be repeated once.
- DRCM 4080 Advanced Summer Theatre Workshop** 3 cr.  
Study and participation in UNO summer theatre productions. Lectures, discussion, and practical experience either backstage, on-stage, or both. Enrollment by consent of department. (DRCM 4080 and 4081 may not be taken simultaneously.) Required weekly

laboratory hours on current departmental productions vary according to responsibilities.

**DRCM 4081 Advanced Summer Theatre Workshop** 3 cr.  
Study and participation in UNO summer theatre productions. Lectures, discussion, and practical experience either backstage, on-stage, or both. Enrollment by consent of department. (DRCM 4080 and 4081 may not be taken simultaneously.) Required weekly laboratory hours on current departmental productions vary according to responsibilities.

**DRCM 4090 Special Topics in Drama** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned from the entire Special Topics group, 4090-2, 4093-5.

**DRCM 4091 Special Topics in Drama** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned from the entire Special Topics group, 4090-2, 4093-5.

**DRCM 4092 Special Topics in Drama** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned from the entire Special Topics group, 4090-2, 4093-5.

**DRCM 4093 Special Topics in Communications** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned for the entire Special Topics group, 4090-2, 4093-5.

**DRCM 4094 Special Topics in Communications** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned for the entire Special Topics group, 4090-2, 4093-5.

**DRCM 4095 Special Topics in Communications** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned for the entire Special Topics group, 4090-2, 4093-5.

**DRCM 4096 Special Topics in Film Production** 3 cr.  
Prerequisite: DRCM 2510 and 4510 or consent of department. The course will meet for three hours of lecture or six hours of laboratory each week, depending upon the topic. Topics will vary from semester to semester, and the course may be repeated once for credit.

**DRCM 4110 Scene Design** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Principles and techniques of design as related to stage scenery, including the planning and

execution of the design. Four to six laboratory hours per week required in studio design projects.

**DRCM 4120 Scene Painting** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Studio projects in the painting of architectural and natural styles of stage scenery. Four to six laboratory hours per week required in studio design projects.

**DRCM 4125 Styles of Scene Design** 3 cr.  
Prerequisites: Drama and Communications 1100 and 2100. The study of production and selected designers from the Renaissance through the present.

**DRCM 4130 Period Costume Construction** 3 cr.  
Prerequisite: DRCM 2160 or consent of department. Studies in the construction of historic costumes for stage and screen, including period drafting, corseting, draping, and tailoring. Four to six laboratory hours per week required in studio design projects.

**DRCM 4135 Rendering Techniques** 3 cr.  
An exploration of styles and techniques for rendering designs for scenery, costumes, and lights.

**DRCM 4140 Costume Design** 3 cr.  
Principles and techniques for the design of costumes, including the planning and execution of the design. Four to six hours per week required in studio design projects.

**DRCM 4150 Development of Theatrical Costume** 3 cr.  
A survey of the history of fashion and its influence on stage costume.

**DRCM 4160 Lighting Crafts and Techniques** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Basic principles and techniques for use of lighting instruments, filters, and control technology. Three to six laboratory hours per week required in current departmental productions in addition to lecture.

**DRCM 4170 Lighting Design** 3 cr.  
Prerequisites: DRCM 1110 and 2100. The study of the use and capabilities of light in dramatic production. Four to six laboratory hours per week required in current departmental productions in addition to lecture.

**DRCM 4180 Sound Design and Techniques** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Basic principles and techniques of sound for the stage and studio; study of electronic equipment, operating procedures, and acoustical theory. Three laboratory hours per week required in current departmental productions in addition to lecture.

**DRCM 4200 Advanced Playwriting** 3 cr.  
Prerequisite: DRCM 2200 or consent of department. Advanced studies in playwriting. Writing of original scripts for possible production. May be repeated once for credit.

**DRCM 4251 Advanced Screenwriting** 3 cr.  
Prerequisite: DRCM 2250 or 4500 or consent of department. Advanced studies in screenwriting. Writing original scripts for film and television. May be repeated once for credit.

**DRCM 4260 Styles in Theatrical Production** 3 cr.  
The influence of major stylistic schools of dramatic writing on the modern actor, designer, and director. Analysis and discussion of selected dramatic scripts with emphasis on problems of style and production technique.

**DRCM 4265 Computer Aided Drafting and Design for the Performing Arts** 3 cr.  
Prerequisites: DRCM 2265 or equivalent course work or consent of department. A course for students with a background in technical production, in theater, film, and video. Students will learn how

- to use the computer to aid in drawing, drafting, designing, and printing their work. The course is structured around the Macintosh computer and will use the MacDraw and CAD software along with plans, sketches, elevations, and a choice of scenic perspectives, lighting plots, or costume patterns. Students will also be allowed to explore CAD alternatives such as those available for IBM and compatible computers. The class will be a combination lecture and laboratory. Graduate students are required to complete original design projects and have a public showing of their work in a portfolio presentation.
- DRCM 4300 Voice Training for Actor II** 3 cr.  
Prerequisite: DRCM 2300 or equivalent. Advanced work in vocal artistry for the actor. Attention is given to work in oral characterization ethnic dialects historical modes and styles of delivery and special vocal problems such as the actor-singer and the actor in chorus reading.
- DRCM 4310 Oral Interpretation of Literature** 3 cr.  
Prerequisite: DRCM 2310.
- DRCM 4330 Acting IV Styles** 3 cr.  
Prerequisite: DRCM 2300 and 3330 or consent of department. Examination of actor's methods of characterization and script analysis of the major styles including Elizabethan, Ancient Greek, Comedy, and Absurdist, among others. Content of course varies. May be repeated once for credit.
- DRCM 4331 Acting VI Styles** 3 cr.  
Prerequisite: Drama and Communications 4330 or consent of department. Continued study of the actor's method of characterization and script analysis of the major styles. Content of course varies. May be repeated once for credit.
- DRCM 4333 Stage Combat for the Theater** 3 cr.  
Prerequisite: DRCM 1300. Performance class that allows the student to learn the fundamentals for hand-to-hand combat techniques. These techniques will be taught within an atmosphere of safety that is essential for the stage.
- DRCM 4380 Directing II Advanced** 3 cr.  
Prerequisite: DRCM 2380 and one credit from any University Theatre Lab or consent of department. Intensive study of director's methods of rehearsal techniques, script analysis, casting and interpretation. Direction of scenes and/or one-act play. May be repeated once for credit.
- DRCM 4400 Development of the Theatre** 3 cr.  
The history of theatrical architecture, modes of production, major figures, and tendencies in the theatre through the Renaissance. Offered only in the fall semester of even-numbered calendar years.
- DRCM 4410 Development of the Theatre** 3 cr.  
From the Renaissance to the present, with principal attention to European theatre. Offered only in the spring semester of odd-numbered calendar years.
- DRCM 4450 Advanced Studies in the Modern Theatre** 3 cr.  
Consent of department required for non-drama majors. Intensive study of the pioneers of the modern stage, from Chekhov to Strindberg through Brecht. Emphasis on plays in performance.
- DRCM 4455 Advanced Studies in the Contemporary Theatre** 3 cr.  
Consent of department required for non-drama majors. Intensive study of the contemporary theatre, from Artaud and Beckett to the avant-garde stage.
- DRCM 4530 Advanced Project in Media Production** 3 cr.  
Offered each semester. Prerequisite: DRCM 4500 and 4520, or 4560 or consent of department. Students will produce a major film or video project, prepare a critical analysis of their production, and present a public screening of the production. Six hours of studio work.
- DRCM 4540 The Development of the Cinema** 3 cr.  
Offered only in the fall semester. A history of the development of the cinema from its beginnings to the present day. Emphasis on the artistic, social, economic, and technical phenomena which have influenced the growth of international films. Important representative films will be screened and discussed.
- DRCM 4545 Film Theory and Criticism** 3 cr.  
Offered only in the spring semester. Basic theories of film modes and structures will be analyzed. Development of bases for the study of film as a communicative and aesthetic form.
- DRCM 4560 Advanced Television Production** 3 cr.  
Offered only in the spring semester. Prerequisite: DRCM 2550. Advanced problems in television production with special consideration to the work of the television producer-director. Attention will be paid to the types of TV informational programs including news programs, documentaries, broadcast magazines, interviews, press conferences, talk shows, and instructional programs.
- DRCM 4591 Film Styles and Genres** 3 cr.  
Prerequisites: DRCM 4545 or consent of department. An examination of the Motion Picture in terms of various groupings such as Genre, Style, and Authorship. Topic will differ from semester to semester. A laboratory fee is required for this course. May be repeated once for credit.
- DRCM 4670 Mass Media and the Law** 3 cr.  
Offered only in the fall semester. Social, ethical, and legal responsibilities of the mass media and entertainment arts.
- DRCM 4675 Mass Media in Society** 3 cr.  
Offered only in the spring semester. Prerequisite: DRCM 1600 or consent of department. Mass media as a force in society. Emphasis on cultural, economic, political, and social effects.
- DRCM 4696 Washington Center Internship** 6 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- DRCM 4697 Washington Center Internship** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- DRCM 4698 Washington Center Ind Research** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants

- can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- DRCM 4830 Movement Training for Actor II** 3 cr.  
Prerequisite: DRCM 2800 or consent of department. Demonstration and practice of mimetic techniques from the French, Italian and Japanese schools. Creation of original mimes and choreographic patterns for performance.
- DRCM 4840 Creative Dramatics** 3 cr.  
Prerequisite: consent of department. An examination of current trends and teaching methods basic to the creative process inherent in creative dramatics story theatre and theatre games designed to dramatize plot setting character and theme.
- DRCM 4900 Internship in Drama and Communications** 3 cr.  
Offered in the fall and spring semesters only. Prerequisite: consent of department. Each semester the department makes available a limited number of internships with theatres, radio and television stations, film studios, the city of New Orleans, and other drama and communications-related agencies. Interns usually work 15 hours a week at times mutually agreeable to the individual and the agency. In addition, interns must attend discussion sessions on campus and complete written assignments. The intern's work will be evaluated by both the agency supervisor and the course instructor.
- DRCM 6000 Practicum in Research** 3 cr.  
Practical work in research tools in preparation for written thesis requirements.
- DRCM 6001 Practicum in Production** 3 cr.  
Participation in weekly seminar and independent practical work in acting, design, directing, stage management, cinematography, and television.
- DRCM 6010 An Overview to the Field of Theatre Arts** 3 cr.  
Prerequisite: admission to the Master of Arts in Arts Administration or consent of department. Included in the survey will be aesthetics of the theatre, the types of theatre organizations, division of responsibilities within the organization, and problems associated with the management of a theatre. Not open to drama and communications graduate students. For students with little or no background in theatre.
- DRCM 6020 Form and Idea in the Media** 3 cr.  
An exploration of the relationship between the creative idea, the form of its expression and the medium for its presentation. Examples will be studied from theatre, film and television. The collaboration of the contributing artists will be investigated and the process of script analysis, directing methods, and production techniques for the different media will be compared and contrasted.
- DRCM 6090 Directed Independent Study** 3 cr.  
Prerequisite: consent of department. Specialized study and research on some aspect of drama, film, or television. This course may be repeated up to six hours.
- DRCM 6100 Visual Design for Stage Screen and Television** 3 cr.  
Prerequisite: consent of department. Specialized study and research on some aspect of drama, film, or television. This course may be repeated up to six hours.
- DRCM 6110 Seminar in Scenic Design** 3 cr.  
Studies and practice in modern design techniques, which will include portfolio preparation, rendering techniques, and a survey of current job market possibilities for scenic designers.
- DRCM 6140 Seminar in Theatrical Costuming** 3 cr.  
Studies and practice in modern costume techniques which will include portfolio preparation, contemporary techniques, and a survey of current job practices and marketability.
- DRCM 6160 Seminar in Theatrical Lighting** 3 cr.  
Studies and practice in modern lighting techniques, which will include portfolio preparation, contemporary techniques in design, and a survey of current job practices and marketability.
- DRCM 6200 Seminar in Playwriting** 3 cr.  
Prerequisite: DRCM 4200 or consent of department. Studies and practice in writing plays for the live theatre stage. Students should have written at least one play before enrolling in this class. May be repeated for credit.
- DRCM 6250 Seminar in Screenwriting** 3 cr.  
Prerequisite: DRCM 4500 or 4251 or consent of department. Studies and practice in writing scripts for film and television. Students should have written at least one screenplay before enrolling in this class. May be repeated once for credit.
- DRCM 6330 Seminar in Acting I** 3 cr.  
Prerequisite: Drama and Communications 4331 or consent of department. Training in performance techniques. Content of course varies each semester. May be repeated once for credit.
- DRCM 6331 Seminar in Acting II** 3 cr.  
Prerequisite: Drama and Communications 6330 or consent of the department. Further studies and practice in performance techniques.
- DRCM 6380 Seminar in Directing I** 3 cr.  
Training in directing methods. May include technical assignments in department productions. Direction of scene and/or one-act plays in laboratory production.
- DRCM 6600 Mass Communications** 3 cr.  
Study of the meaning and impact of mass communications on selected areas of human activity.
- DRCM 6601 Mass Communications** 3 cr.  
Study of the meaning and impact of mass communications on selected areas of human activity.
- DRCM 6800 Seminar in Stage Movement** 3 cr.  
An examination and practice of various techniques of stage movement for the performer. May include dance, gymnastics, and stage combat. Material varies each semester. May be repeated once for credit.
- DRCM 6910 Studio I** 3 cr.  
Prerequisite: consent of department. Independent work in theatrical or media production.
- DRCM 6911 Studio II** 3 cr.  
Prerequisite: consent of department. Independent work in theatrical or media production.
- DRCM 6912 Studio III** 3 cr.  
Prerequisite: consent of department. Independent work in theatrical or media production.
- DRCM 7000 Thesis Research** 1-9 cr.  
Creative or written project. To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- DRCM 7040 Examination or Thesis Only** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- DRCM 4080G Advanced Summer Theatre Workshop** 3 cr.  
Study and participation in UNO summer theatre productions. Lectures, discussion, and practical experience either backstage, on-stage, or both. Enrollment by consent of department. (DRCM 4080

- and 4081 may not be taken simultaneously.) Required weekly laboratory hours on current departmental productions vary according to responsibilities.
- DRCM 4081G Advanced Summer Theatre Workshop** 3 cr.  
Study and participation in UNO summer theatre productions. Lectures, discussion, and practical experience either backstage, on-stage, or both. Enrollment by consent of department. (DRCM 4080 and 4081 may not be taken simultaneously.) Required weekly laboratory hours on current departmental productions vary according to responsibilities.
- DRCM 4090G Special Topics in Drama** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned from the entire Special Topics group, 4090-2, 4093-5.
- DRCM 4091G Special Topics in Drama** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned from the entire Special Topics group, 4090-2, 4093-5.
- DRCM 4092G Special Topics in Drama** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned from the entire Special Topics group, 4090-2, 4093-5.
- DRCM 4093G Special Topics in Communications** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned for the entire Special Topics group, 4090-2, 4093-5.
- DRCM 4094G Special Topics in Communications** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned for the entire Special Topics group, 4090-2, 4093-5.
- DRCM 4095G Special Topics in Communications** 1 cr.  
Prerequisite: consent of department. Each course is offered for one-third of a semester. Three hours of lecture or six hours of laboratory weekly depending on topic. Topics vary from semester to semester, therefore, individual course numbers may be repeated. A maximum total number of no more than six hours credit may be earned for the entire Special Topics group, 4090-2, 4093-5.
- DRCM 4096G Special Topics in Film Production** 3 cr.  
Prerequisite: DRCM 2510 and 4510 or consent of department. The course will meet for three hours of lecture or six hours of laboratory each week, depending upon the topic. Topics will vary from semester to semester, and the course may be repeated once for credit.
- DRCM 4110G Scene Design** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Principles and techniques of design as related to stage scenery, including the planning and execution of the design. Four to six laboratory hours per week required in studio design projects.
- DRCM 4120G Scene Painting** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Studio projects in the painting of architectural and natural styles of stage scenery. Four to six laboratory hours per week required in studio design projects.
- DRCM 4125G Styles of Scene Design** 3 cr.  
Prerequisites: Drama and Communications 1100 and 2100. The study of production and selected designers from the Renaissance through the present.
- DRCM 4130G Period Costume Construction** 3 cr.  
Prerequisite: DRCM 2160 or consent of department. Studies in the construction of historic costumes for stage and screen, including period drafting, corseting, draping, and tailoring. Four to six laboratory hours per week required in studio design projects.
- DRCM 4135G Rendering Techniques** 3 cr.  
An exploration of styles and techniques for rendering designs for scenery, costumes, and lights.
- DRCM 4140G Costume Design** 3 cr.  
Principles and techniques for the design of costumes, including the planning and execution of the design. Four to six hours per week required in studio design projects.
- DRCM 4150G Development of Theatrical Costume** 3 cr.  
A survey of the history of fashion and its influence on stage costume.
- DRCM 4160G Lighting Crafts and Techniques** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Basic principles and techniques for use of lighting instruments, filters, and control technology. Three to six laboratory hours per week required in current departmental productions in addition to lecture.
- DRCM 4170G Lighting Design** 3 cr.  
Prerequisites: DRCM 1110 and 2100. The study of the use and capabilities of light in dramatic production. Four to six laboratory hours per week required in current departmental productions in addition to lecture.
- DRCM 4180G Sound Design and Techniques** 3 cr.  
Prerequisites: DRCM 1100 and 2100. Basic principles and techniques of sound for the stage and studio; study of electronic equipment, operating procedures, and acoustical theory. Three laboratory hours per week required in current departmental productions in addition to lecture.
- DRCM 4200G Advanced Playwriting** 3 cr.  
Prerequisite: DRCM 2200 or consent of department. Advanced studies in playwriting. Writing of original scripts for possible production. May be repeated once for credit.
- DRCM 4251G Advanced Screenwriting** 3 cr.  
Prerequisite: DRCM 2250 or 4500 or consent of department. Advanced studies in screenwriting. Writing original scripts for film and television. May be repeated once for credit.
- DRCM 4260G Styles in Theatrical Production** 3 cr.  
The influence of major stylistic schools of dramatic writing on the modern actor, designer, and director. Analysis and discussion of selected dramatic scripts with emphasis on problems of style and production technique.
- DRCM 4265G Computer Aided Drafting and Design for the Performing Arts** 3 cr.  
Prerequisites: DRCM 2265 or equivalent course work or consent of department. A course for students with a background in technical production, in theater, film, and video. Students will learn how

- to use the computer to aid in drawing, drafting, designing, and printing their work. The course is structured around the Macintosh computer and will use the MacDraw and CAD software along with plans, sketches, elevations, and a choice of scenic perspectives, lighting plots, or costume patterns. Students will also be allowed to explore CAD alternatives such as those available for IBM and compatible computers. The class will be a combination lecture and laboratory. Graduate students are required to complete original design projects and have a public showing of their work in a portfolio presentation.
- DRCM 4300G Voice Training for Actor II** 3 cr.  
Prerequisite: DRCM 2300 or equivalent. Advanced work in vocal artistry for the actor. Attention is given to work in oral characterization ethnic dialects historical modes and styles of delivery and special vocal problems such as the actor-singer and the actor in chorus reading.
- DRCM 4310G Oral Interpretation of Literature** 3 cr.  
Prerequisite: DRCM 2310.
- DRCM 4330G Acting IV Styles** 3 cr.  
Prerequisite: DRCM 2300 and 3330 or consent of department. Examination of actor's methods of characterization and script analysis of the major styles including Elizabethan, Ancient Greek, Comedy, and Absurdist, among others. Content of course varies. May be repeated once for credit.
- DRCM 4331G Acting VI Styles** 3 cr.  
Prerequisite: Drama and Communications 4330 or consent of department. Continued study of the actor's method of characterization and script analysis of the major styles. Content of course varies. May be repeated once for credit.
- DRCM 4333G Stage Combat for the Theater** 3 cr.  
Prerequisite: DRCM 1300. Performance class that allows the student to learn the fundamentals for hand-to-hand combat techniques. These techniques will be taught within an atmosphere of safety that is essential for the stage.
- DRCM 4380G Directing II Advanced** 3 cr.  
Prerequisite: DRCM 2380 and one credit from any University Theatre Lab or consent of department. Intensive study of director's methods of rehearsal techniques, script analysis, casting and interpretation. Direction of scenes and/or one-act play. May be repeated once for credit.
- DRCM 4400G Development of the Theatre** 3 cr.  
The history of theatrical architecture, modes of production, major figures, and tendencies in the theatre through the Renaissance. Offered only in the fall semester of even-numbered calendar years.
- DRCM 4410G Development of the Theatre** 3 cr.  
From the Renaissance to the present, with principal attention to European theatre. Offered only in the spring semester of odd-numbered calendar years.
- DRCM 4450G Advanced Studies in the Modern Theatre** 3 cr.  
Consent of department required for non-drama majors. Intensive study of the pioneers of the modern stage, from Chekhov to Strindberg through Brecht. Emphasis on plays in performance.
- DRCM 4455G Advanced Studies in the Contemporary Theatre** 3 cr.  
Consent of department required for non-drama majors. Intensive study of the contemporary theatre, from Artaud and Beckett to the avant-garde stage.
- DRCM 4530G Advanced Project in Media Production** 3 cr.  
Offered each semester. Prerequisite: DRCM 4500 and 4520, or 4560 or consent of department. Students will produce a major film or video project, prepare a critical analysis of their production, and present a public screening of the production. Six hours of studio work.
- DRCM 4540G The Development of the Cinema** 3 cr.  
Offered only in the fall semester. A history of the development of the cinema from its beginnings to the present day. Emphasis on the artistic, social, economic, and technical phenomena which have influenced the growth of international films. Important representative films will be screened and discussed.
- DRCM 4545G Film Theory and Criticism** 3 cr.  
Offered only in the spring semester. Basic theories of film modes and structures will be analyzed. Development of bases for the study of film as a communicative and aesthetic form.
- DRCM 4560G Advanced Television Production** 3 cr.  
Offered only in the spring semester. Prerequisite: DRCM 2550. Advanced problems in television production with special consideration to the work of the television producer-director. Attention will be paid to the types of TV informational programs including news programs, documentaries, broadcast magazines, interviews, press conferences, talk shows, and instructional programs.
- DRCM 4591G Film Styles and Genres** 3 cr.  
Prerequisites: DRCM 4545 or consent of department. An examination of the Motion Picture in terms of various groupings such as Genre, Style, and Authorship. Topic will differ from semester to semester. A laboratory fee is required for this course. May be repeated once for credit.
- DRCM 4670G Mass Media and the Law** 3 cr.  
Offered only in the fall semester. Social, ethical, and legal responsibilities of the mass media and entertainment arts.
- DRCM 4675G Mass Media in Society** 3 cr.  
Offered only in the spring semester. Prerequisite: DRCM 1600 or consent of department. Mass media as a force in society. Emphasis on cultural, economic, political, and social effects.
- DRCM 4696G Washington Center Internship** 6 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- DRCM 4697G Washington Center Internship** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- DRCM 4698G Washington Center Ind Research** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants

can earn 12 credit hours during a fall or spring semester (nine hours in summer).

**DRCM 4830G Movement Training for Actor II** 3 cr.  
Prerequisite: DRCM 2800 or consent of department. Demonstration and practice of mimetic techniques from the French, Italian and Japanese schools. Creation of original mimes and choreographic patterns for performance.

**DRCM 4840G Creative Dramatics** 3 cr.  
Prerequisite: consent of department. An examination of current trends and teaching methods basic to the creative process inherent in creative dramatics story theatre and theatre games designed to dramatize plot setting character and theme.

**DRCM 4900G Internship in Drama and Communications** 3 cr.  
Offered in the fall and spring semesters only. Prerequisite: consent of department. Each semester the department makes available a limited number of internships with theatres, radio and television stations, film studios, the city of New Orleans, and other drama and communications-related agencies. Interns usually work 15 hours a week at times mutually agreeable to the individual and the agency. In addition, interns must attend discussion sessions on campus and complete written assignments. The intern's work will be evaluated by both the agency supervisor and the course instructor.

## Earth Sciences

**EASC 2259 Introductory Petrology** 3 cr.  
Prerequisites: Geology 1100 1110 2300. An introduction to the study of rocks. Origin and occurrence of igneous sedimentary and metamorphic rocks. Megascopic and microscopic examination of rock specimens. Two hours of lecture and three hours of laboratory.

## Economics

**ECON 1000 An Introduction to Current Economic Issues** 3 cr.  
Offered each semester. An elementary study and analysis of current economic issues for both the beginning business and the non-business student. Introduces a minimum of economic concepts to allow the student to understand and to cope with national, international, regional, and/or local issues. The principal goal of the course is to attain a level of economic understanding sufficient for a citizen to analyze and evaluate economic issues. Not open to students enrolled in the College of Business Administration who have completed 30 semester hours (or more) of University credit.

**ECON 1273 Development of the Economic System in the United States** 3 cr.  
Offered each semester. A study and an analysis of the major forces of the American economic system from colonial times to present times. Attention will be given to forces leading the United States into internationalism.

**ECON 2000 Engineering Economics** 3 cr.  
Offered each semester. (Not for credit toward a degree in business administration) Planning economic studies for decision making including considerations of rate of return, cost and yield studies, depreciation and tax relationships, increment costs, replacement, and introduction to multivariate alternative studies.

**ECON 2221 Money and Banking** 3 cr.  
Offered each semester. Prerequisite: ECON 1203, 1204, or 2200. A survey of money, commercial banking, financial institutions, the Federal Reserve System, and the formulation and execution of monetary and economic stabilization policy.

**ECON 3099 Senior Honors Thesis** 1-6 cr.  
Offered each semester. Prerequisites: consent of department and Honors Program director. Senior honors thesis under the direction

of a faculty member. Section number will correspond with credit to be earned. Must be repeated for a total of six credit hours.

**ECON 3203 Intermediate Microeconomic Theory** 3 cr.  
Offered each semester. Prerequisite: ECON 1203 or 2200. A study of resource allocation and of factor pricing in an enterprise economy.

**ECON 3204 Intermediate Macroeconomic Theory** 3 cr.  
Offered each semester. Prerequisite: ECON 1203, 1204, or 2200. A course in macroeconomic analysis which covers modern income and employment theory. Special attention will be given to macroeconomic problems and economic stabilization.

**ECON 3211 The Evolution of Economic Thought** 3 cr.  
Designed to acquaint the student with the leading economic theorists who have influenced economics as a body of scientifically developed propositions.

**ECON 3231 Labor Economics** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. A survey of the nature and causes of the economic problems of the American wage earner (insecurity, wages, hours, and substandard workers) and of the attempts of wage earners and society through organization and legislation to alleviate and solve these problems.

**ECON 3233 Comparative Industrial Relations** 3 cr.  
Prerequisite: Economics 3231 or 3232 or consent of department. A survey of trade unionism and collective bargaining throughout the world, with particular attention to the development and functioning of these institutions in western Europe.

**ECON 3292 Internship in Business and Economics** 3 cr.  
Prerequisites: BA 2780 or equivalent, QMBE 2786 or equivalent, or consent of department. Student intern is engaged ten hours per week at the site of an assigned participating organization which directs the intern in a specific research project. Students wishing to take this course should apply a semester in advance since enrollment is limited by internships available.

**ECON 3299 Honors Colloquium** 1 cr.  
Prerequisites: sophomore, junior, or senior standing; recommendation of a student's dean; and approval of department. Study of primal and pivotal personages, works, and ideas in economics. Readings, papers, and examinations at the discretion of the coordinator.

**ECON 3595 Academic Year Abroad: Special Topics in Economics** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.

**ECON 3999 Special Topics in Economics** 3 cr.  
Prerequisite: Consent of Department. Topic will vary from semester to semester. (May be repeated once for credit.) The course content and materials will vary depending upon the professor and course title. Enrollment as well as when it is to be offered will be contingent upon same.

**ECON 4205 Business Cycles and Forecasting** 3 cr.  
(ECON 4205 and FIN 4305 are cross-listed) Prerequisite: ECON 1203, 1204, and QMBE 2786. Univariate forecasting models; multiple time series model building. Applications to business trends and business cycles.

**ECON 4241 Public Finance** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. This is a general course in the principles of public finance. It covers the economic effects of public revenues, public expenditures, and intergovernmental fiscal relations. Special attention is given to problems of fiscal policy and debt management at the federal level.

- ECON 4242 The Economics of State and Local Finance** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. This is a course designed to analyze the functions of state and local governments relating to the provision of public goods. The demand for and the supply of public goods as well as the production of these goods will be examined. Optimal methods of financing these government services will be investigated. The tax incidence and the equity of various financing forms will be presented. Grants-in-aid, revenue sharing, and other federal policies affecting intergovernmental relations in a federal system will also be analyzed.
- ECON 4251 The Economics of Government Regulation** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. Analysis of the economic bases, policies, and consequences of government regulation of economic activity, with particular emphasis upon government regulation directed toward mobilization of the economy.
- ECON 4252 Law and Economics** 3 cr.  
Prerequisite: ECON 3203 or consent of department. A study of the theory of law and economics, including the economics of property rights and public choice theory. The course concentrates on the impact of the legal system on the allocation and distribution of resources in a wide variety of areas including antitrust, public utility regulation, money and banking, zoning, the environment, and others.
- ECON 4253 Environmental Economics** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. A study of the economic theory of environmental externalities as applied to air and water pollution and solid waste management; economic analysis of alternative environmental policies and programs.
- ECON 4254 Economics of the Arts** 3 cr.  
Prerequisite: Economics 2000, or 1203, and 1204. Investigates the arts as economic activities. Considers the labor, capital, and other resources used to generate arts goods and services in drama, music, the visual arts, and related areas. Investigates the distinctive positions of profit versus non-profit activities. Surveys public versus private subsidization of arts activities. Studies the effects of changing technology, leisure habits, and art forms themselves on the future of arts in the economic setting. May not be taken for graduate credit.
- ECON 4255 Forensic Economics** 3 cr.  
Prerequisites: Quantitative Methods of Business and Economics 2785 and 2786 and Economics 1203 and 1204 or consent of department. (Economics 1200 may be substituted for both Economics 1203 and 1204.) Financial economics as applied to judicial constraints, exploring selected legal problems, evaluating alternative legal and quantitative solutions, illustrative topics include antitrust, earning capacity analysis, affirmative actions and employment discrimination, and business and property valuation. May not be taken for graduate credit.
- ECON 4261 International Trade Theory** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. An introduction to the classical and modern theories of international trade, international payments, and adjustment of international disequilibrium.
- ECON 4262 International Finance** 3 cr.  
(ECON 4262 and FIN 4362 are cross-listed) Prerequisite: ECON 1203 and 1204. This course examines the financial operations of the firm from an international point of view. It draws upon topics such as exchange rate determination, foreign exchange exposures (risks) for the multinational firm and techniques to hedge such exposures, international bond, equity and currency markets, trade documentation, and international capital budgeting. Students may not receive graduate credit for both ECON 4262, FIN 4362, and FIN 6367.
- ECON 4263 Transportation** 3 cr.  
Prerequisite: ECON 1203, 1204, or 2200. A generalized view of the development of transportation systems in the United States, the economic significance of transportation in an industrial society, and principles and problems of transport regulation.
- ECON 4264 Economics of Natural Resources** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. An economic analysis of the practices and problems in man's utilization of land, water, air, forest, soil, and mineral resources.
- ECON 4265 Regional Economics** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200 or consent of department. Analysis of theoretical models and empirical studies of regional economic development. It covers classical location theory and introduces export base, regional multiplier theory, and input-output analysis.
- ECON 4266 Urban Economics** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200 or consent of department. Nature, function, and economic foundation of cities; resource allocation in an urban context; urban economic growth; spatial structure land-use patterns; central business district functions; centralizing and decentralizing forces; urban public services; government decision making in metropolitan areas; housing, transportation, racial discrimination, poverty problems, and pollution.
- ECON 4271 Economic Development** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. Explanation of the determinants of sustained economic growth. Study of past and present development theories and experience. Consideration of policy measures to promote economic growth, with reference to both underdeveloped and advanced countries.
- ECON 4272 Comparative Economic Systems** 3 cr.  
Prerequisite: ECON 1203, 1204, and 2200. A survey and comparison of differing systems of economic organization. May not be taken for graduate credit.
- ECON 4273 Economic Development of the United States** 3 cr.  
Prerequisite: ECON 1203, 1204, or 2200. An historical consideration of economic institutions, their characteristics, and the determinants of their change. An explanation of the changes in economic structure is presented, with special regard to the role of capital formation, technology, enterprise, government, financial institutions, and internal trade.
- ECON 4274 Latin American Trade and Economic Development** 3 cr.  
Prerequisite: ECON 1203, 1204, or 2200. An analysis and survey of Latin American Development, with special emphasis on trade, payments, and investment relationships with the United States.
- ECON 4277 Economics of the Soviet Union and Eastern Europe** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. A study of Marxian and neo-Marxian economic theory as well as of various models of market socialism. Theories applicable to centralized and decentralized socialist economies will be related to planning and economic management in the Soviet Union and East-Central Europe.
- ECON 4291 Undergraduate Directed Individual Study** 3 cr.  
(ECON 4291 and FIN 4391 are cross-listed) Offered each semester. Prerequisites: Approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The student should refer to the College of Business Administration Policy On Undergraduate Directed Individual Study available in the Department of Economics and Finance. This course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member.

Progress reports, readings, conferences, and a research paper are required. May be repeated.

- ECON 6200 Managerial Economics** 3 cr.  
Prerequisite: ECON 1203 and 1204, QMBE 2785 and 2786 (Statistics) or equivalent. Offered each semester. Survey of work assignments expected from economists in industry and government; stress is laid upon practical case applications of economic analysis in solving business, labor, and government problems.
- ECON 6203 Microeconomic Theory** 3 cr.  
Prerequisite: QMBE 6280 and ECON 3203, or consent of department. Analysis of pricing and distribution under perfect and imperfect market structures, social welfare concepts, and other current microeconomic topics.
- ECON 6204 Macroeconomic Theory** 3 cr.  
Prerequisite: ECON 3204 and QMBE 6280 or consent of department. Analysis of Keynesian and classical models with comparative statics. Permanent and transitory shocks. New classical macroeconomic issues including signal extraction, policy ineffectiveness, observational equivalence, and Lucas's critique. Overlapping generations models and multiple equilibria. Growth theory with comparative dynamics.
- ECON 6206 Welfare Economics** 3 cr.  
Prerequisite: ECON 6203. Welfare economics in a general equilibrium framework; Pareto optimality and the efficiency of perfect and imperfect competition; external effects in production and consumption; taxes subsidies and compensation; social welfare functions; the theory of second best; and externalities and free enterprise.
- ECON 6207 Seminar in Microeconomics** 3 cr.  
Prerequisite: ECON 6203. The course will use the models and concepts developed in ECON 6203 to examine the properties of general equilibrium in a market economy. Also the course will introduce state preference models and expose students to selected topics in production theory the economics of information and game theory.
- ECON 6208 Seminar in Macroeconomics** 3 cr.  
Prerequisite: QMBE 6280 and ECON 6204. This course will examine extensions and alternatives to the models presented in ECON 6204. Emphasis will be given to 1) disequilibrium models and 2) growth models. Also the course will survey current topics in macroeconomics.
- ECON 6209 Economics of Risk and Uncertainty** 3 cr.  
Prerequisites: ECON 6207. Methods used to introduce risk and uncertainty into various economic and financial models; analysis of behavior in individuals, firms and markets in risky situations.
- ECON 6211 Seminar in the History of Early Economic Thought** 3 cr.  
A critical study of the chronological development of economic doctrines and theories in the Western World through an examination of prime material and articles, from the ancient economists to the socialists.
- ECON 6212 Seminar in the History of Modern Economic Thought** 3 cr.  
A critical study of the chronological development of economic doctrines and theories in the Western World through an examination of prime materials and articles from the marginalists to contemporary thought.
- ECON 6220 International Monetary Economics** 3 cr.  
Prerequisite: ECON 2221. Topics include the balance of payments and adjustment mechanisms, exchange markets, international capital markets, macroeconomic policies in the open economy, and international reserves and liquidity. Special attention is given to the
- roles of asset markets and expectations in exchange rate determination and international macroeconomic policies.
- ECON 6221 Monetary Theory** 3 cr.  
Prerequisite: ECON 6204, QMBE 6281. An examination of the development of monetary theory, the implementation of policy, and the current controversies in theory and policy.
- ECON 6235 Collective Bargaining in Education** 3 cr.  
(EDAD 6823 and ECON 6235 are cross-listed) A study of the collective bargaining process as it affects elementary secondary and higher educational institutions. Special attention will be given to teachers from kindergarten through grade 12. This course is not available for credit for graduate students in the economics program.
- ECON 6241 Public Finance and Taxation** 3 cr.  
A study of the theory of public finance and problems of taxation, with special attention to the recent literature.
- ECON 6251 Seminar in Industrial Organization** 3 cr.  
A survey of the organization of industry in the American economy with emphasis on the empirical and analytical techniques used in investigating structure and performance in the manufacturing sector of the economy.
- ECON 6253 Theory of Environmental Economics** 3 cr.  
Prerequisite: Economics 6200 or 6203. Analytics of welfare economics, Pareto optimality, social welfare functions, externality theory, theory of public goods, compensation principle, theory of market failure as applied to air and water pollution and land use. Alternative environmental policy programs.
- ECON 6254 Seminar in Environmental Economics** 3 cr.  
Survey of environmental issues within the context of the structure and function of natural ecosystems; disruption of natural ecosystems; alternative views of the market and the market's relationship to the natural ecosystem; energy use, natural resource depletion, and entropic processes. Alternative environment policy programs.
- ECON 6260 International Trade Theory and Policy** 3 cr.  
Prerequisite: Economics 6203. Pure theory of international trade (classical and modern), trade policy, and strategic settings.
- ECON 6261 Seminar in International Economics** 3 cr.  
Prerequisite: ECON 6220 and QMBE 6282. Advanced topics and readings in International Financial Economics.
- ECON 6266 Urban Economics and Spatial Structures** 3 cr.  
Prerequisites: ECON 3781 or a calculus equivalent. Topics in the financial and economic theory of urban areas: cities as open regions in a larger economy, urban spatial structures within financial and externality limitations, urban transportation, land use controls, and the urban public economy.
- ECON 6272 Seminar in Comparative Economic Systems** 3 cr.  
Prerequisites: Economics 3203 and 3204 or 6200 or consent of department. Examination of the literature pertaining to contemporary economic theory, organization, and policies in other developed nations with emphasis on contrasts and similarities between capitalist systems, mixed economies, and socialist systems.
- ECON 6274 Seminar in Latin American Trade and Economic Development** 3 cr.  
Examination of the literature on development theory and its special relevance for Latin America. Analysis of structural and economic impediments to Latin American growth, study of regionalization and economic integration, public and private capital formation, and inter- and intraregional trade flows.
- ECON 6276 Seminar in the Economy of New Orleans** 3 cr.  
A critical study of the post-World War II development of the New Orleans economy.

- ECON 6292 Directed Individual Studies** 3 cr.  
Prerequisite: consent of department. This tutorial is arranged individually in order to provide latitude for specialized study and research. May be repeated for credit.
- ECON 6366 Seminar in Urban Financial Economics** 3 cr.  
Prerequisite: Economics 6266. The course combines the economics of urban areas with financial analysis, especially mortgage finance. Emphasis will be placed on the methods of finance in a spatial context. Topics will include the economics of secondary mortgage markets, real estate sales, land and housing price determination models, local tax-exempt revenue bonds, federal urban policy, and additional current literature.
- ECON 7000 Thesis Research** 1-9 cr.  
Offered each semester. To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- ECON 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- ECON 7050 Dissertation Research** 1-9 cr.  
(ECON 7050 and FIN 7050 are cross-listed)Preparation of dissertation by Ph.D. candidate under direction of major professor and dissertation committee. Section number will correspond with credit to be earned. To be repeated for credit until dissertation is accepted.
- ECON 4205G Business Cycles and Forecasting** 3 cr.  
(ECON 4205 and FIN 4305 are cross-listed) Prerequisite: ECON 1203, 1204, and QMBE 2786. Univariate forecasting models; multiple time series model building. Applications to business trends and business cycles.
- ECON 4241G Public Finance** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. This is a general course in the principles of public finance. It covers the economic effects of public revenues, public expenditures, and intergovernmental fiscal relations. Special attention is given to problems of fiscal policy and debt management at the federal level.
- ECON 4242G The Economics of State and Local Finance** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. This is a course designed to analyze the functions of state and local governments relating to the provision of public goods. The demand for and the supply of public goods as well as the production of these goods will be examined. Optimal methods of financing these government services will be investigated. The tax incidence and the equity of various financing forms will be presented. Grants-in-aid, revenue sharing, and other federal policies affecting intergovernmental relations in a federal system will also be analyzed.
- ECON 4251G The Economics of Government Regulation** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. Analysis of the economic bases, policies, and consequences of government regulation of economic activity, with particular emphasis upon government regulation directed toward mobilization of the economy.
- ECON 4252G Law and Economics** 3 cr.  
Prerequisite: ECON 3203 or consent of department. A study of the theory of law and economics, including the economics of property rights and public choice theory. The course concentrates on the impact of the legal system on the allocation and distribution of resources in a wide variety of areas including antitrust, public utility regulation, money and banking, zoning, the environment, and others.
- ECON 4253G Environmental Economics** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. A study of the economic theory of environmental externalities as applied to air and water pollution and solid waste management; economic analysis of alternative environmental policies and programs.  
**ECON 4254G Economics of the Arts** 3 cr.  
Prerequisite: Economics 2000, or 1203, and 1204. Investigates the arts as economic activities. Considers the labor, capital, and other resources used to generate arts goods and services in drama, music, the visual arts, and related areas. Investigates the distinctive positions of profit versus non-profit activities. Surveys public versus private subsidization of arts activities. Studies the effects of changing technology, leisure habits, and art forms themselves on the future of arts in the economic setting. May not be taken for graduate credit.
- ECON 4255G Forensic Economics** 3 cr.  
Prerequisites: Quantitative Methods of Business and Economics 2785 and 2786 and Economics 1203 and 1204 or consent of department. (Economics 1200 may be substituted for both Economics 1203 and 1204.) Financial economics as applied to judicial constraints, exploring selected legal problems, evaluating alternative legal and quantitative solutions, illustrative topics include antitrust, earning capacity analysis, affirmative actions and employment discrimination, and business and property valuation. May not be taken for graduate credit.
- ECON 4261G International Trade Theory** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. An introduction to the classical and modern theories of international trade, international payments, and adjustment of international disequilibrium.
- ECON 4262G International Finance** 3 cr.  
(ECON 4262 and FIN 4362 are cross-listed) Prerequisite: ECON 1203 and 1204. This course examines the financial operations of the firm from an international point of view. It draws upon topics such as exchange rate determination, foreign exchange exposures (risks) for the multinational firm and techniques to hedge such exposures, international bond, equity and currency markets, trade documentation, and international capital budgeting. Students may not receive graduate credit for both ECON 4262, FIN 4362, and FIN 6367.
- ECON 4263G Transportation** 3 cr.  
Prerequisite: ECON 1203, 1204, or 2200. A generalized view of the development of transportation systems in the United States, the economic significance of transportation in an industrial society, and principles and problems of transport regulation.
- ECON 4264G Economics of Natural Resources** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. An economic analysis of the practices and problems in man's utilization of land, water, air, forest, soil, and mineral resources.
- ECON 4265G Regional Economics** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200 or consent of department. Analysis of theoretical models and empirical studies of regional economic development. It covers classical location theory and introduces export base, regional multiplier theory, and input-output analysis.
- ECON 4266G Urban Economics** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200 or consent of department. Nature, function, and economic foundation of cities; resource allocation in an urban context; urban economic growth; spatial structure land-use patterns; central business district functions; centralizing and decentralizing forces; urban public services; government decision making in metropolitan areas; housing, transportation, racial discrimination, poverty problems, and pollution.

- ECON 4271G Economic Development** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. Explanation of the determinants of sustained economic growth. Study of past and present development theories and experience. Consideration of policy measures to promote economic growth, with reference to both underdeveloped and advanced countries.
- ECON 4272G Comparative Economic Systems** 3 cr.  
Prerequisite: ECON 1203, 1204, and 2200. A survey and comparison of differing systems of economic organization. May not be taken for graduate credit.
- ECON 4273G Economic Development of the United States** 3 cr.  
Prerequisite: ECON 1203, 1204, or 2200. An historical consideration of economic institutions, their characteristics, and the determinants of their change. An explanation of the changes in economic structure is presented, with special regard to the role of capital formation, technology, enterprise, government, financial institutions, and internal trade.
- ECON 4274G Latin American Trade and Economic Development** 3 cr.  
Prerequisite: ECON 1203, 1204, or 2200. An analysis and survey of Latin American Development, with special emphasis on trade, payments, and investment relationships with the United States.
- ECON 4277G Economics of the Soviet Union and Eastern Europe** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. A study of Marxian and neo-Marxian economic theory as well as of various models of market socialism. Theories applicable to centralized and decentralized socialist economies will be related to planning and economic management in the Soviet Union and East-Central Europe.
- ECON 4291G Undergraduate Directed Individual Study** 3 cr.  
(ECON 4291 and FIN 4391 are cross-listed) Offered each semester. Prerequisites: Approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The student should refer to the College of Business Administration Policy On Undergraduate Directed Individual Study available in the Department of Economics and Finance. This course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and a research paper are required. May be repeated.
- Educational Administration**
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- EDAD 2000 Introduction to Leadership** 2 cr.  
This course will help students recognize and enhance their leadership potential for current and future involvement on campus and in the community. Students will examine definitions and theories of leadership, leadership styles from an interdisciplinary perspective, leadership in organizations, and contemporary leadership issues.
- EDAD 6090 Independent Research in Educational Administration** 1-3 cr.  
Prerequisites: consent of department and major professor. Independent research under the supervision of a faculty member. The student is responsible for the selection of the area of research. The course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.
- EDAD 6600 The Governance of the American College and University** 3 cr.  
Prerequisite: consent of department. Introduction to contemporary United States higher education, with special emphasis on historical development, emerging trends, roles of the several kinds of institutions, the composition and character of governing boards, administrative hierarchy, and their coordination for colleges and universities.
- EDAD 6610 Legal Aspects of Higher Education** 3 cr.  
Prerequisite: Educational Administration 6600 or consent of department. This course provides an overview of the historic and contemporary influence of the U.S. Constitution, federal and state statutes, case law, and agency regulations that apply to the governance of higher education.
- EDAD 6615 Financial Management in Higher Education** 3 cr.  
This course will provide an overview of the basic concepts, procedures, and applications used to finance higher education both in the public and private sectors. Financial management techniques and procedures currently in use in higher education institutions will be discussed and analyzed.
- EDAD 6620 History and Philosophy of Higher Education** 3 cr.  
Prerequisite: EDAD 6600 or consent of department. Overview of the development of the American system of post-secondary education its origins, philosophical perspectives, major characteristics, distinctive features, and trends.
- EDAD 6630 Student Choice in Higher Education** 3 cr.  
Factors that influence student choice in higher education, including decisions about attending college, choosing a school, choosing a major, and persisting in college are identified. The ways in which student choice research can inform the development and refinement of institutional enrollment management strategies and government finance policies are also analyzed and discussed.
- EDAD 6640 College Teaching** 3 cr.  
(EDCI 6758 AND EDAD 6640 are cross listed) This course provides an overview of the issues principles and practices associated with effective college teaching. Topics examined include learning and diversity; teaching models and strategies teacher and student behaviors and learning outcomes; and instructional improvement strategies. The interaction of theory and practice is an important theme of the course.
- EDAD 6650 College Curriculum** 3 cr.  
(EDCI 6658 and EDAD 6650 are cross listed) This course provides an over-view of the issues, principles, and practices associated with college curriculum development. Topics include the diversity of philosophical foundations for college curricula; perspectives and models of the college curriculum in higher education. The interaction of theory and practice is an important theme of the course.
- EDAD 6810 School Law** 3 cr.  
The evolution, principles, and practices of school law and court decisions, with emphasis on school law of Louisiana and policy implementation of legal decisions.
- EDAD 6811 Advanced School Law** 3 cr.  
Prerequisite: EDAD 6810 or consent of department. This course provides for the development of legal analytical skills for the solution of law-related problems. Current issues in school law will be examined. Students will be expected to conduct a legal study that solves some aspect of a school law problem.
- EDAD 6815 Public School Finance** 3 cr.  
A survey of the financial and business management in public education with special reference to the study of state and local sources of revenue, budgeting, and accounting procedures.
- EDAD 6820 Administration of School Personnel** 3 cr.  
A study of personnel theory and management and the interrelationship of the individual the organization and the processes of education.

- EDAD 6823 Collective Bargaining in Education** 3 cr.  
(EDAD 6823 and ECON 6235 are cross-listed) A study of the collective bargaining process as it affects elementary secondary and higher educational institutions. Special attention will be given to teachers from kindergarten through grade 12. This course is not available for credit for graduate students in the economics program.
- EDAD 6825 Administration of Pupil Personnel Services** 3 cr.  
A study of the organization and administration of pupil services as they relate to the instructional program.
- EDAD 6830 Educational Facility Planning** 3 cr.  
Designed to provide educational administrators with opportunities to study problems in the planning and construction of educational facilities.
- EDAD 6835 Computer Applications in Education** 3 cr.  
This course will provide an overview of some of the current uses of microcomputers in education and an evaluation of educational software. Applications in the areas of administration, instruction, and pupil personnel services will be examined.
- EDAD 6845 School Community Relationships** 3 cr.  
Implementation of effective school/community programs, including public relations and parent involvement
- EDAD 6850 Supervision of Instruction** 3 cr.  
Theories and practices for instructional improvement, with emphasis on clinical supervision. Skills in classroom observation, conferencing and group facilitation.
- EDAD 6851 Seminar in Supervision of Instruction** 3 cr.  
Prerequisite: Educational Administration 6850 Educational change theory with emphasis on planning for curriculum innovation and instructional improvement.
- EDAD 6855 The Supervision of Student Teaching** 3 cr.  
Designed to assist students in the techniques of supervising student teachers.
- EDAD 6858 Practicum in Clinical Supervision of Instruction** 3 cr.  
Prerequisite: completion of 12 semester hours of School Administration courses including EDAD 6851 or consent of department. Supervisory experience is provided in an elementary or secondary school or in the central office of a school system under the direction and guidance of an accomplished supervisor. Seminars conferences field work written reports.
- EDAD 6860 Elementary School Principalship** 3 cr.  
Prerequisites: EDFR 6700, EDAD 6800 and 6 additional hours of EDAD courses. Theories skills and practices for elementary school building leadership and management.
- EDAD 6865 Secondary School Principalship** 3 cr.  
Prerequisite: EDFR 6700, EDAD 6800 and 6 additional hours of EDAD courses. Theories skills and practices for secondary school building leadership and management.
- EDAD 6875 School Effectiveness and School Improvement** 3 cr.  
Prerequisites: EDFR 6700 EDAD 6800 and 6 additional hours of EDAD courses. Review of the school effectiveness research with related topics including teacher effectiveness, principal effectiveness, and school improvement models.
- EDAD 6890 Seminar in Educational Administration** 3 cr.  
Prerequisite: consent of department. This course is designed to analyze in depth contemporary administrative problems of urban and suburban educational systems.
- EDAD 6893 Practicum In School Leadership** 3 cr.  
Administrative experience is provided in an elementary or secondary school under the direction and guidance of an accomplished principal.
- EDAD 6895 Internship in School Leadership** 3 cr.  
Prerequisite: EDFR 6700 EDAD 6800 and 12 additional hours of EDAD courses. Observation and participation in administration in schools central office special projects allied organizations or other clinical settings.
- EDAD 6910 Strategic Approaches to Educational Administration** 3 cr.  
Prerequisite: admission to the doctoral program in educational administration. The course provides an overview of the development and use of strategic approaches to planning and management in education. The analysis of case studies is used to build skills in strategic analysis and understanding of the role of strategic decisions in organizational change in all levels of education.
- EDAD 6920 Advanced Theories in Educational Administration** 3 cr.  
Prerequisite: admission to doctoral program in educational administration. An examination of administrative theories and their applicability to educational administration.
- EDAD 6930 Leader Behavior in Educational Administration** 3 cr.  
Prerequisite: admission to doctoral program in educational administration. Survey of theories of leadership and leader behavior in educational administration. Students will organize this knowledge into a set of generalizations based on reason and experimentation.
- EDAD 6940 Power and Politics in Educational Administration** 3 cr.  
Prerequisite: admission to UNO doctoral program in Educational Administration or consent of department. This course provides a theoretical overview of the relationship between power and politics as applied to education. It is concerned with the impact of policy and the influence of politics in educational organizations at both the macro and micro levels.
- EDAD 6980 Independent Study in Educational Administration** 1-3 cr.  
Prerequisite: advanced graduate standing with consent of department and major professor. Investigation of pertinent problems under the direction of a graduate faculty member. This course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.
- EDAD 6991 Selected Topics in Educational Administration** 1-3 cr.  
Prerequisite: consent of department. The content of the course will be varied from semester to semester. Section number will correspond with credit to be earned. A total of six semester hours may be earned toward a degree.
- EDAD 6992 Selected Topics in Educational Administration** 1-3 cr.  
Prerequisite: consent of department. The content of the course will be varied from semester to semester. Section number will correspond with credit to be earned. A total of six semester hours may be earned toward a degree.
- EDAD 6993 Selected Topics in Educational Administration** 1-3 cr.  
Prerequisite: consent of department. The content of the course will be varied from semester to semester. Section number will correspond with credit to be earned. A total of six semester hours may be earned toward a degree.
- EDAD 6997 Research Seminar in Educational Administration** 3 cr.  
Prerequisite: admission to doctoral program in educational administration. This course will provide an overview of critical issues in

the research design and analysis of data in educational administration. Current publications in educational administration will be reviewed and critiqued. Readings discussions and an analysis of educational methodologies and research in school administration will be critically examined.

**EDAD 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned

**EDAD 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.

**EDAD 7050 Dissertation Research** 1-9 cr.  
Prerequisite: approval by the candidate's graduate committee. To be repeated for credit until the dissertation is accepted. Section number will correspond with credit to be earned.

### **Curriculum and Instruction**

**EDCI 2100 Methods and Materials of Teaching in Elementary Schools** 3 cr.  
Primarily for education and fine arts majors. Practical experience with media basic to the arts and crafts activities for children. One hour of lecture and four hours of studio work involve the student in lesson development and the presentation of materials and techniques adequate to the developmental needs of children. Readings, discussions, and studio activities.

**EDCI 2740 Introduction to Educational Media** 3 cr.  
A basic course designed to provide a broad overview of instructional equipment and materials and their contribution in improving the educational experiences of the learner.

**EDCI 2750 The Upper Elementary School Learner** 3 cr.  
Characteristics of the upper elementary school child

**EDCI 3100 Principles of Teaching in the Elementary School** 3 cr.  
Offered each semester and summer session. Prerequisites: EDFR 2051, PSYC 2200 and 2110.

**EDCI 3140 Materials and Methods in Elementary School Mathematics** 3 cr.  
Prerequisites: EDCI 3100, MATH 1021 and 1022 or consent of department. This course is designed to develop competencies in planning, conducting, and evaluating instruction in elementary school mathematics. Appropriate field experiences may be required.

**EDCI 3150 Materials and Methods in Elementary School Science** 3 cr.  
Prerequisites: EDCI 3100 and completion of or enrollment in the last four of the 12 required hours of science. Introduction to newer programs and instructional strategies in the teaching of elementary school science. Laboratory experience in the university and elementary school classroom is provided.

**EDCI 3160 Materials and Methods in Elementary School Social Studies** 3 cr.  
Prerequisite: EDCI 3100 or consent of department. This course is designed to investigate the purposes of social studies, understand and evaluate recent developments in content and instructional procedure, and develop competencies in planning and conducting instruction in elementary school social studies. Appropriate field experiences may be required.

**EDCI 3180 Materials and Methods in Elementary School Music** 3 cr.  
This course is designed to improve understanding of music fundamentals and provide an introduction to classroom methodology in music through an exposure to a wide range of musical activities appropriate for children in the elementary grades.

**EDCI 3200 Principles and Practices in Secondary Education** 3 cr.  
Offered each semester and summer session. Prerequisites: EDFR 2051, PSYC 2200 and 2120.

**EDCI 3205 Professional Laboratory Experience in Secondary Education** 1 cr.  
Prerequisite: concurrent enrollment in EDCI 3200 or consent of department. Observational and participatory experiences under faculty direction. Seminar held on campus. Field experiences in junior high or senior high schools for a minimum of 25 hours. Required of all junior high, high school, and special teaching certificate candidates.

**EDCI 3210 Materials and Methods in Secondary School Business** 2 cr.  
Spring semester. Prerequisites: EDCI 3200 and consent of department. This course is designed to develop competencies in planning, conducting, and evaluating instruction in secretarial studies and general business. Appropriate field experiences may be required.

**EDCI 3230 Materials and Methods in Secondary School Foreign Languages** 3 cr.  
Spring semester. Prerequisites: EDCI 3200 and consent of department. Consideration of special and specific methods in teaching foreign languages. Appropriate field experiences may be required.

**EDCI 3240 Materials and Methods in Secondary School Mathematics** 3 cr.  
Offered fall semester only. Prerequisites: EDCI 3200 and consent of department. This course is designed to develop competencies in planning, conducting, and evaluating instruction in secondary school mathematics. Appropriate field experiences may be required.

**EDCI 3250 Materials and Methods in Secondary School Science** 3 cr.  
Offered fall semester only. Prerequisites: EDCI 3200 and consent of department. This course is designed to provide experiences with programs and instructional strategies oriented toward the teaching of biological and physical science by inquiry. Appropriate field experiences may be required.

**EDCI 3260 Introduction to Secondary School Social Studies** 3 cr.  
Prerequisites: EDCI 3200 and consent of department. This course is designed to investigate the definition and purposes of social studies, understand recent research, trends and issues related to social studies, and introduce instructional approaches practiced in social studies education. Appropriate field experience may be required.

**EDCI 3265 Teaching Social Studies Education** 3 cr.  
Prerequisite: Curriculum and Instruction 3260 or consent of department. This course is designed to develop the skills necessary for effective social studies classroom instruction. Included are skills related to planning instruction, using instructional strategies, dealing with classroom issues and problems, and assessing student achievement and teacher performance. Field experience will be required.

**EDCI 3270 Materials and Methods in Secondary School Speech** 2 cr.  
Spring semester. Prerequisites: EDCI 3200 and consent of department. Consideration of methods and materials in teaching oral

communication, mass communication, and drama as a medium of expression. Appropriate field experiences may be required.

**EDCI 3382 Materials and Methods of Teaching Vocal Music in the Elementary Classroom** 3 cr.  
(EDCI 3382 and MUS 3382 are cross-listed) Prerequisites: EDCI 3100 and 3200 and consent of department. Consideration of methods and material in teaching vocal music in grades Pre-K through 6. Appropriate field experiences may be required.

**EDCI 3383 Materials and Methods of Teaching Instrumental Music in Elementary and Secondary Schools** 3 cr.  
(EDCI 3383 and MUS 3383 are cross-listed) Prerequisites: EDCI 3100 and 3200 and consent of department. Consideration of methods and materials in teaching instrumental music. Appropriate field experiences may be required.

**EDCI 3384 Materials and Methods of Teaching Vocal Music in Secondary Schools** 3 cr.  
(EDCI 3384 and MUS 3384 are cross-listed) Prerequisites: EDCI 3100 or 3200 and consent of department. Considerations of methods and materials in teaching vocal music in grades 7-12. Appropriate field experiences may be required.

**EDCI 3420 Materials and Methods in Language Arts and Reading** 3 cr.  
Offered each semester and summer session. Prerequisites: EDCI 3100 or consent of department and concurrent registration in EDCI 3430. Required of all Elementary Education majors. A study of the communication skills and conditions which foster growth in listening, speaking, reading, writing, grammar, spelling, and vocabulary development. Each student will be required to participate in field experiences.

**EDCI 3430 Materials and Methods in Elementary Reading Instruction** 3 cr.  
Offered each semester and summer session. Prerequisites: EDCI 3100 or consent of department and concurrent registration in EDCI 3420. A study of the reading process, assessment, and development of word identification and comprehension skills, and the materials and methods used to teach reading. Each student will be required to participate in field experiences.

**EDCI 3440 Corrective Reading Techniques for the Classroom Teacher** 3 cr.  
Offered each semester and summer session. Prerequisites: EDCI 3420 and 3430 or consent of department. This course is designed to familiarize students with techniques and materials used to identify those children in the classroom who are performing below their potential in reading and provide students with the experience of developing appropriate instruction for these children. Each student will be required to participate in a supervised tutorial experience.

**EDCI 3450 Materials and Methods in Secondary Reading Instruction** 3 cr.  
Offered each semester and summer session. Prerequisites: EDCI 3200 or consent of department and concurrent registration in EDCI 4432. A study of methods and materials which foster growth in reading, study strategies, and communication skills for secondary school pupils. Each student will be required to participate in field experiences in a secondary school.

**EDCI 3910 Student Teaching in the Elementary School** 12 cr.  
Prerequisites: requirements listed under "Requirements for Student Teaching." This course is designed to provide the student with an opportunity to acquire and apply competencies essential for effective teaching and to create an awareness of the total school program. The student will be assigned to a school on a day-to-day basis for one semester. The student teacher will participate in classroom

teaching and observation, planning and evaluation conferences, school and community activities, and other school-related experiences. A seminar will be held in conjunction with this experience. The seminar will address the topics of classroom management and interpersonal skills.

**EDCI 3915 Student Teaching in the Elementary and Special Education Classroom** 12 cr.  
Prerequisites: requirements listed under "Requirements for Student Teaching" and concurrent enrollment in EDSP 3700. This course is designed to provide the student with an opportunity to acquire and apply competencies essential for effective teaching and to create an awareness of the total school program including mainstreaming practices and multicultural differences in students. The student will be assigned on an all-day basis to 1) a regular elementary classroom for half of the semester and 2) a special education classroom the other half of the semester. The student teacher will participate in classroom teaching and observation, planning, and evaluation conferences, school and community activities, and other school-related experiences. A seminar will be held in conjunction with this experience. The seminar will address the topics of classroom management and interpersonal skills.

**EDCI 3920 Student Teaching in the Secondary School** 12 cr.  
Prerequisites: requirements listed under "Requirements for Student Teaching." This course is designed to provide the student with an opportunity to acquire and apply competencies essential for effective teaching and to create an awareness of the total school program. The student will be assigned to a school on a full-day basis for one semester. The student teacher will participate in classroom teaching and observation, planning and evaluation conferences, school and community activities, and other school-related experiences. Seminars will be held in conjunction with this experience. Seminars will address the topics of classroom management and interpersonal skills of teaching.

**EDCI 3930 Student Teaching in the Elementary and Secondary Schools** 12 cr.  
Prerequisites: requirements listed under "Requirements for Student Teaching." The student will be assigned to a school on a full-day basis for one semester. This course is designed to provide the student with an opportunity to acquire and apply competencies essential for effective teaching and to create an awareness of the total school program. This course is open only to students with majors in either music education or physical education. The student teacher will participate in classroom teaching and observation, planning and evaluation conferences, school and community activities, and other school-related experiences. Seminars will be held in conjunction with this experience. Seminars will address the topics of classroom management and interpersonal skills of teaching.

**EDCI 3980 Independent Study in Curriculum and Instruction** 1-3 cr.  
Prerequisite: a minimum of 92 credit hours and consent of the department and major professor. Investigation of pertinent problems under the direction of a Curriculum and Instruction faculty member. More than three credit hours may not be applied to any degree program. Section number will correspond with credit to be earned.

**EDCI 3999 Honors Thesis** 3 cr.  
Prerequisites: consent of department and admission to Honors in Education program. Directed research with relevance to teacher education culminating in a written thesis to meet the requirements for graduation with Honors in Education and if appropriate University Honors. May be repeated for a total of six credits.

- EDCI 4140 Studies in the Teaching of Elementary School Mathematics** 3 cr.  
Prerequisites: EDCI 3100, MATH 1021 and MATH 1022 or consent of department. Investigation of current programs, teaching strategies, and instructional materials which relate to elementary school mathematics. Field-based experiences may be included.
- EDCI 4150 Studies in the Teaching of Elementary School Science** 3 cr.  
Prerequisites: EDCI 3100 and completion of or enrollment in the last four of the 12 required hours of science or consent of department. Investigation of current programs and instructional strategies that contribute to effective teaching of science in the elementary school.
- EDCI 4160 Studies in the Teaching of Elementary School Social Studies** 3 cr.  
Investigation of the rationale and purpose for social studies education, and examination of recent trends, issues, and practices in social studies at the elementary school level.
- EDCI 4255 Studies in the Teaching of the Life Sciences in the Middle and Secondary Schools** 3 cr.  
Studies of programs and instructional strategies in the life sciences for the middle and secondary school.
- EDCI 4421 Linguistic Applications in Reading-Language Arts** 3 cr.  
Prerequisite: EDCI 3420 or 3430 or consent of department. Designed to provide teachers of the English language arts with a basic understanding of linguistics in order to help them improve their capacity for making decisions about instruction.
- EDCI 4423 Teaching Reading-Language Arts in a Multicultural Society** 3 cr.  
Prerequisite: EDCI 3420 or consent of department. Designed to provide the student with an understanding of language differences in a multicultural society and with a variety of programs designed for teaching students having language and cultural differences.
- EDCI 4425 Materials and Methods for Teaching English as a Second Language** 3 cr.  
Intensive study of linguistic developments in second language acquisition and practices in teaching English to non-native speakers of the language.
- EDCI 4432 Teaching Reading in Content Areas** 3 cr.  
Offered each semester and summer session. Prerequisite: EDCI 3100 or 3200 or consent of department. A study of the skills of reading and of methods, materials, and practices which contribute to the effective teaching of reading the subject matter of content areas.
- EDCI 4500 Foundations of Early Childhood Education** 3 cr.  
A study of child development from infancy to seven years of age. Implications for children's learning and motivation suggest relevance for teachers in nursery schools and kindergartens.
- EDCI 4510 Curriculum Design in Early Childhood Education** 3 cr.  
Prerequisite: EDCI 4500. A study of the principles and practices underlying curriculum design in early childhood education.
- EDCI 4540 Methods and Materials of Early Childhood Education** 3 cr.  
Application of curriculum theory to educational practice through a variety of instructional media and methods.
- EDCI 4595 Practicum in Early Childhood Education** 3 cr.  
Prerequisite: EDCI 4500, EDCI 4510 and EDCI 4540. Supervised experiences in a variety of nursery school and kindergarten situations.
- EDCI 4605 Trends and Issues in Curriculum and Instruction** 3 cr.  
A systematic analysis and overview of the major trends and issues in curriculum and instruction
- EDCI 4620 Curriculum and Instruction for Multicultural Education** 3 cr.  
Analysis of principles of multicultural education as applied to curriculum and instruction. Designed to increase students' awareness and knowledge of cultural integrity and cultural diversity and to familiarize students with school programs, strategies, and materials for developing and implementing a multicultural curriculum.
- EDCI 4660 Global Education** 3 cr.  
Prerequisite: consent of department. Introduction to global education with an emphasis on both the development of a global perspective and the development of instructional ideas and strategies designed to integrate global education into the school curriculum.
- EDCI 4740 Utilization of Educational Media** 3 cr.  
Prerequisite: EDCI 2740 graduate standing or consent of department. Reviews structure and utilization of media and instructional systems in education and applies the basic concepts of communication to problems in teaching and learning.
- EDCI 4744 Introduction to the Computer in the Content Areas** 3 cr.  
Prerequisite: consent of department. Designed to prepare educators for the use and application of microcomputers in the content areas, especially in mathematics, language arts and English, social studies, and science. Evaluating and adapting hardware and software for classroom use. Introductory study of the BASIC and Logo languages.
- EDCI 4800 Principles and Practices of Instruction** 3 cr.  
A survey of instructional principles with emphasis on the interaction of theory and practice, including lesson design, classroom management, instructional strategies, and evaluative processes. Laboratory and field experiences required.
- EDCI 4850 Analysis of Teacher Questioning Behaviors for Cognitive Growth** 3 cr.  
Prerequisites: EDCI 3100 or EDCI 3200 or consent of the department. An intensive study of questioning theory, research, and practice in order to develop and refine teachers' questioning behaviors related to student cognitive development.
- EDCI 4910 Internship: Alternative Post-Baccalaureate Certification for Lower Elementary Teaching** 6 cr.  
Open only to graduate students admitted to Alternative Post-Baccalaureate Certification for Lower Elementary Education. Prerequisites: completion of a minimum of 12 semester hours of professional education courses in the Teacher Preparation Program at UNO and all appropriate methods courses prior to enrollment in this internship or consent of department. The participant must hold a teaching position in the area of desired certification. The intern will participate in lower elementary classroom teaching (grades one through four), observation, planning, and evaluation conferences, school and community activities, and other related experiences. Enrollment in the internship for two consecutive semesters (12 credits) is required. Not for graduate credit.
- EDCI 4990 Practicum in Teaching** 3 cr.  
Prerequisite: open only to certified teachers who are changing level of certification and who have a minimum of three years of teaching experience. The students in this course must meet student teaching requirements, at the selected level, as stipulated in the UNO General Catalog under "Requirements for Student Teaching." Classroom teaching, observation, planning, and evaluation conferences, school and community activities, and other school-related experiences to create an awareness of the total school program at the selected level. The time spent in the practicum will be computed on the basis of a minimum of eight hours per week per semester.

- EDCI 4991 Special Topics in Curriculum and Instruction** 1-3 cr.  
Prerequisite: consent of department. The content of the courses will be varied from semester to semester. These courses may be repeated but total credit may not exceed six semester hours in any degree program. Section number will correspond with credit to be earned.
- EDCI 4992 Special Topics in Curriculum and Instruction** 1-3 cr.  
Prerequisite: consent of department. The content of the courses will be varied from semester to semester. These courses may be repeated but total credit may not exceed six semester hours in any degree program. Section number will correspond with credit to be earned.
- EDCI 4993 Special Topics in Curriculum and Instruction** 1-3 cr.  
Prerequisite: consent of department. The content of the courses will be varied from semester to semester. These courses may be repeated but total credit may not exceed six semester hours in any degree program. Section number will correspond with credit to be earned.
- EDCI 4995 Internship in Secondary Teaching** 6 cr.  
Prerequisite: open only to students admitted to the Alternate Post-Baccalaureate Secondary Teacher Certification Program who have completed a minimum of 12 hours of professional education courses and all appropriate methods courses prior to enrollment in this internship and who presently hold a teaching position in their area of desired certification. The intern will participate in classroom teaching, observation, planning and evaluation conferences, school and community activities, and other school-related experiences. Enrollment in two consecutive semesters (12 cr.) is required.
- EDCI 6020 Writing Institute** 3-6 cr.  
(EDCI 6020 and ENGL 6151 are cross-listed) Offered during the summer session only. An invitational workshop designed for teachers interested in improving writing, theirs and their students'. An intensive exploration of the research and practice in the field. Section number will correspond with credit to be earned.
- EDCI 6060 Advanced Applied Behavior Analysis** 3 cr.  
Prerequisite: EDSP 4060 or consent of the department. Study of applied behavior analysis and single subject research designs to implement educational and habilitative programs in applied settings. Two hours of lecture and two hours of laboratory.
- EDCI 6220 Studies in the Teaching of English in Secondary Schools** 3 cr.  
Designed to assist teachers in developing instructional strategies related to the secondary English program
- EDCI 6240 Studies in the Teaching of Mathematics in Secondary Schools** 3 cr.  
Designed to assist teachers in developing instructional strategies related to the secondary school mathematics program.
- EDCI 6250 Studies in the Teaching of Science in Secondary Schools** 3 cr.  
An examination of recent trends, methods, issues, and research in middle/secondary school science instruction.
- EDCI 6260 Studies in the Teaching of Social Studies in Secondary Schools** 3 cr.  
An examination of recent trends, methods, problems, and literature in social studies instruction.
- EDCI 6310 Foundations of Adult Education** 3 cr.  
A study of the historical and philosophical foundations of adult education.
- EDCI 6320 Adult Learning and Development** 3 cr.  
An inquiry into adult learning theories, developmental stages, and the forces which motivate adults to participate in educational programs.
- EDCI 6370 Methods of Adult Education** 3 cr.  
A study of the variety of techniques and strategies to assess needs, present information, facilitate learning, organize the learning environment, and evaluate the performance of adult learners.
- EDCI 6390 Practicum in Adult Learning** 3 cr.  
Prerequisites: Curriculum and Instruction 6320 and completion of or concurrent enrollment in 6370 or consent of the department. Application of various learning theories in actual teaching-learning situations.
- EDCI 6434 Developmental Reading** 3 cr.  
A comprehensive treatment of methods, materials, principles, and practices of devising an effective developmental reading program, with emphasis on studies, research, and experimentation.
- EDCI 6436 Diagnostic and Remedial Reading** 3 cr.  
Prerequisite: EDCI 6434. Study of diagnostic and remedial techniques in reading. Practicum.
- EDCI 6438 Clinical Diagnosis of Reading Problems** 3 cr.  
Prerequisites: EDCI 6434 and 6436 or consent of department. A course designed for the reading specialist to develop the skills of diagnosing severe reading problems with emphasis on individual diagnostic testing.
- EDCI 6460 Psychology Of Reading** 3 cr.  
Prerequisite: EDCI 6434 or consent of the department. Explorations in the psychological processes involved in reading and learning to read.
- EDCI 6490 Seminar in Reading-Language Arts** 3 cr.  
Prerequisite: EDCI 6436 or consent of department. Explorations in recent trends and problems in specific areas of research and practice in reading and language arts. The topic will vary with the instructor. May be taken for graduate credit more than once.
- EDCI 6493 Practicum in Diagnostic and Remedial Reading** 3 cr.  
Prerequisite: EDCI 6436. A course designed for the practice of diagnosing and remediating reading disability.
- EDCI 6495 Practicum in Clinical Reading** 3 cr.  
Summer session only. Prerequisites: EDCI 6434, 6436 and 6438 or consent of department. A course designed for the reading specialist to develop the skills in treating severe reading problems with emphasis on individual and small groups.
- EDCI 6510 Advanced Curriculum Design in Early Childhood Education** 3 cr.  
Prerequisite: EDCI 4595 or consent of department. An analysis and application of techniques, planning and evaluative procedures in developing curricula for the preschool and kindergarten
- EDCI 6520 Contemporary Approaches in Early Childhood Education** 3 cr.  
Prerequisite: EDCI 4595 or consent of department. A critical analysis of the conceptual framework and implementation of contemporary programs in Early Childhood Education and their influences in preschool and kindergarten education.
- EDCI 6525 Community, Parent, and School Involvement in the Education of the Young Child** 3 cr.  
Prerequisite: EDCI 4595 or consent of department. The planning, selection, and utilization of human resources, activities, materials, and facilities relating to the education of the young child.
- EDCI 6530 Survey of Measurement in Early Childhood Education** 3 cr.  
Prerequisites: EDCI 4595 and EDFR 6700 or consent of department. A survey of instruments which measure the young child's growth in the affective, cognitive, and psychomotor domains.

- EDCI 6550 Effective Parenting and Understanding Child Behavior** 3 cr.  
Analysis of the nature and process of parent-child interaction through the child-rearing years of infancy and childhood.
- EDCI 6600 Foundations of Curriculum Development** 3 cr.  
A critical analysis of the fundamental principles and practices underlying curriculum development
- EDCI 6610 Elementary School Curriculum** 3 cr.  
A study of the critical issues in the elementary school curriculum and of desirable instructional practices in the major areas of instruction.
- EDCI 6620 Secondary School Curriculum** 3 cr.  
The study and critical evaluation of various designs of the curriculum as they apply to general and specialized education, including content and subject matter areas. There is particular emphasis on course development.
- EDCI 6658 College Curriculum** 3 cr.  
(EDCI 6658 and EDAD 6650 are cross listed) This course provides an over-view of the issues, principles, and practices associated with college curriculum development. Topics include the diversity of philosophical foundations for college curricula; perspectives and models of the college curriculum in higher education. The interaction of theory and practice is an important theme of the course.
- EDCI 6660 The Nature and Development of Social Studies Education** 3 cr.  
A survey of the development of social studies education and an investigation into the purpose of social studies as it relates to citizenship education in American schools.
- EDCI 6670 Evaluation of Curriculum Programs** 3 cr.  
Prerequisites: EDCI 6600 or 6610 or 6620 or consent of department  
A study of methods of gathering information and making decisions with respect to the development and modification of curriculum programs.
- EDCI 6675 Advanced Educational Program Evaluation** 3 cr.  
(EDFR 6675 and EDCI 6675 are cross-listed) Prerequisites EDCI 6670 and EDFR 6710 and 6711 or consent of department. This course is designed to provide students with the research and evaluation skills required to implement various program evaluation models. It is also intended to provide the skills necessary for effectively using the standards of the National Joint Committee on Standards for Program Evaluation as required by state certification guidelines.
- EDCI 6710 Nonfiction Across the Curriculum** 3 cr.  
(EDCI 6710 and LIBS 6710 are cross-listed) A critical examination of nonfiction books used in schools. Focus is on standards for evaluation and curricular uses for informational and biographical works.
- EDCI 6744 Intermediate Programming Techniques in BASIC and LOGO for Curriculum Development and Classroom Instruction** 3 cr.  
Prerequisite: EDCI 4744 or EDFR 6750 or consent of department. Students will study intermediate programming techniques in Logo and basic while developing courseware for classroom use. Additionally, they will learn to modify and, when necessary, expand existing software for improved educational applications.
- EDCI 6750 Instructional Systems** 3 cr.  
Prerequisite: consent of department. An examination of the systems approach in the analysis and development of instructional procedures.
- EDCI 6754 Curriculum Development for the Microprocessor Computer** 3 cr.  
Prerequisites: EDCI 6600, EDFR 6750 or consent of department. This course will relate curricular design processes to the development of software. Knowledge about learning theories, motivation, instructional methodologies, curricular designs, etc. will be applied in the development of instructional computing materials. Students will gain an understanding of how software can be made into courseware and into a part of a total curriculum.
- EDCI 6755 Content Applications of Instructional Strategies** 3 cr.  
Prerequisite: EDCI 4850 or consent of department. Over-view of instructional strategies as pertains to content areas and research on the effective teaching of content. Emphasis on lesson design implementation and assessment of content instruction and classroom management practices.
- EDCI 6758 College Teaching** 3 cr.  
(EDCI 6758 AND EDAD 6640 are cross listed) This course provides an overview of the issues principles and practices associated with effective college teaching. Topics examined include learning and diversity; teaching models and strategies teacher and student behaviors and learning outcomes; and instructional improvement strategies. The interaction of theory and practice is an important theme of the course.
- EDCI 6860 Teacher Development and Professional Leadership in the Content Areas** 3 cr.  
Prerequisite: EDCI 6755 or consent of the department. Survey if the literature on teacher development and teacher leadership. Special emphasis will be placed on the development of professional skills and collaborative processes necessary for mentoring teachers in various stages of teacher development. Such skills and processes help implement curriculum and acquire expertise in teaching content.
- EDCI 6940 Doctoral Seminar in Mathematics Education** 3 cr.  
Offered every other year. Prerequisite: Passage of the Doctoral Qualifying Examination or consent of the department. Critical analysis and discussion of issues and research topics related to mathematics teaching and learning. Topics will vary with each offering.
- EDCI 6950 Doctoral Seminar in Science Education** 3 cr.  
Offered every other year. Prerequisite: Passage of the Doctoral Qualifying Examination; and one of EDCI 6600 6610 6620; or consent of the department. Critical analysis and discussion of issues and research topics related to science teaching and learning. Topics will vary with each offering.
- EDCI 6980 Independent Study in Curriculum and Instruction** 1-3 cr.  
Prerequisite: advanced graduate standing with consent of department and major professor. Investigation of pertinent problems under the direction of a graduate faculty member. This course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.
- EDCI 6990 Doctoral Seminar in Curriculum and Instruction** 3 cr.  
Offered every Fall. Prerequisite: completions of the Qualifying Examination in Curriculum and Instruction; EDFR 6710 EDFR 6715 and an advanced research tools course; and EDCI 6900, EDCI 6902, EDCI 6904 and EDCI 6905 or consent of the department. Discussion of critical issues in writing and conduction dissertation research in curriculum and instruction. Required of all doctoral students.
- EDCI 6991 Practicum in Educational Evaluation** 3 cr.  
(EDFR 6991and EDCI 6991 are cross listed). Prerequisite: EDCI 6675 EDFR 6675 or consent of department. This course is intended to provide students with the opportunity to practice in an actual school

- setting the program evaluation skills learned in previous courses. The practicum will be conducted under the supervision of a graduate faculty member who is an experienced evaluator.
- EDCI 6992 Doctoral Research Seminar in Curriculum Theory** 3 cr.  
Offered every Spring. Prerequisite: Completion of the Qualifying Examination in Curriculum and Instruction; and EDCI 6900, EDCI 6902, and EDCI 6905; or consent of the department. Critical analysis of research affecting curriculum theory. Required of all doctoral students in General Curriculum and Literacy Studies and Language Education, optional for Teacher Development students.
- EDCI 6995 Practicum in Curriculum and Instruction** 3 cr.  
Prerequisite: consent of department. Supervised functional application of educational theory in the student's major area of concentration.
- EDCI 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned
- EDCI 7040 Examination or Thesis Only** 0 cr.  
No credit Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- EDCI 7050 Dissertation Research** 1-9 cr.  
Prerequisite: approval by the candidate's graduate committee. To be repeated for credit until the dissertation is accepted. Section number will correspond with credit to be earned.
- EDCI 4140G Studies in the Teaching of Elementary School Mathematics** 3 cr.  
Prerequisites: EDCI 3100, MATH 1021 and MATH 1022 or consent of department. Investigation of current programs, teaching strategies, and instructional materials which relate to elementary school mathematics. Field-based experiences may be included.
- EDCI 4150G Studies in the Teaching of Elementary School Science** 3 cr.  
Prerequisites: EDCI 3100 and completion of or enrollment in the last four of the 12 required hours of science or consent of department. Investigation of current programs and instructional strategies that contribute to effective teaching of science in the elementary school.
- EDCI 4160G Studies in the Teaching of Elementary School Social Studies** 3 cr.  
Investigation of the rationale and purpose for social studies education, and examination of recent trends, issues, and practices in social studies at the elementary school level.
- EDCI 4255G Studies in the Teaching of the Life Sciences in the Middle and Secondary Schools** 3 cr.  
Studies of programs and instructional strategies in the life sciences for the middle and secondary school.
- EDCI 4421G Linguistic Applications in Reading-Language Arts** 3 cr.  
Prerequisite: EDCI 3420 or 3430 or consent of department. Designed to provide teachers of the English language arts with a basic understanding of linguistics in order to help them improve their capacity for making decisions about instruction.
- EDCI 4423G Teaching Reading-Language Arts in a Multicultural Society** 3 cr.  
Prerequisite: EDCI 3420 or consent of department. Designed to provide the student with an understanding of language differences in a multicultural society and with a variety of programs designed for teaching students having language and cultural differences.
- EDCI 4425G Materials and Methods for Teaching English as a Second Language** 3 cr.  
Intensive study of linguistic developments in second language acquisition and practices in teaching English to non-native speakers of the language.
- EDCI 4432G Teaching Reading in Content Areas** 3 cr.  
Offered each semester and summer session. Prerequisite: EDCI 3100 or 3200 or consent of department. A study of the skills of reading and of methods, materials, and practices which contribute to the effective teaching of reading the subject matter of content areas.
- EDCI 4500G Foundations of Early Childhood Education** 3 cr.  
A study of child development from infancy to seven years of age. Implications for children's learning and motivation suggest relevance for teachers in nursery schools and kindergartens.
- EDCI 4510G Curriculum Design in Early Childhood Education** 3 cr.  
Prerequisite: EDCI 4500. A study of the principles and practices underlying curriculum design in early childhood education.
- EDCI 4540G Methods and Materials of Early Childhood Education** 3 cr.  
Application of curriculum theory to educational practice through a variety of instructional media and methods.
- EDCI 4595G Practicum in Early Childhood Education** 3 cr.  
Prerequisite: EDCI 4500, EDCI 4510 and EDCI 4540. Supervised experiences in a variety of nursery school and kindergarten situations.
- EDCI 4605G Trends and Issues in Curriculum and Instruction** 3 cr.  
A systematic analysis and overview of the major trends and issues in curriculum and instruction
- EDCI 4620G Curriculum and Instruction for Multicultural Education** 3 cr.  
Analysis of principles of multicultural education as applied to curriculum and instruction. Designed to increase students' awareness and knowledge of cultural integrity and cultural diversity and to familiarize students with school programs, strategies, and materials for developing and implementing a multicultural curriculum.
- EDCI 4660G Global Education** 3 cr.  
Prerequisite: consent of department. Introduction to global education with an emphasis on both the development of a global perspective and the development of instructional ideas and strategies designed to integrate global education into the school curriculum.
- EDCI 4740G Utilization of Educational Media** 3 cr.  
Prerequisite: EDCI 2740 graduate standing or consent of department. Reviews structure and utilization of media and instructional systems in education and applies the basic concepts of communication to problems in teaching and learning.
- EDCI 4744G Introduction to the Computer in the Content Areas** 3 cr.  
Prerequisite: consent of department. Designed to prepare educators for the use and application of microcomputers in the content areas, especially in mathematics, language arts and English, social studies, and science. Evaluating and adapting hardware and software for classroom use. Introductory study of the BASIC and Logo languages.
- EDCI 4800G Principles and Practices of Instruction** 3 cr.  
A survey of instructional principles with emphasis on the interaction of theory and practice, including lesson design, classroom management, instructional strategies, and evaluative processes. Laboratory and field experiences required.

**EDCI 4850G Analysis of Teacher Questioning Behaviors  
for Cognitive Growth** 3 cr.

Prerequisites: EDCI 3100 or EDCI 3200 or consent of the department. An intensive study of questioning theory, research, and practice in order to develop and refine teachers' questioning behaviors related to student cognitive development.

**EDCI 4910G Internship: Alternative Post-Baccalaureate  
Certification for Lower Elementary Teaching** 6 cr.

Open only to graduate students admitted to Alternative Post-Baccalaureate Certification for Lower Elementary Education. Prerequisites: completion of a minimum of 12 semester hours of professional education courses in the Teacher Preparation Program at UNO and all appropriate methods courses prior to enrollment in this internship or consent of department. The participant must hold a teaching position in the area of desired certification. The intern will participate in lower elementary classroom teaching (grades one through four), observation, planning, and evaluation conferences, school and community activities, and other related experiences. Enrollment in the internship for two consecutive semesters (12 credits) is required. Not for graduate credit.

**EDCI 4990G Practicum in Teaching** 3 cr.

Prerequisite: open only to certified teachers who are changing level of certification and who have a minimum of three years of teaching experience. The students in this course must meet student teaching requirements, at the selected level, as stipulated in the UNO General Catalog under "Requirements for Student Teaching." Classroom teaching, observation, planning, and evaluation conferences, school and community activities, and other school-related experiences to create an awareness of the total school program at the selected level. The time spent in the practicum will be computed on the basis of a minimum of eight hours per week per semester.

**EDCI 4991G Special Topics in Curriculum and Instruction** 1-3 cr.

Prerequisite: consent of department. The content of the courses will be varied from semester to semester. These courses may be repeated but total credit may not exceed six semester hours in any degree program. Section number will correspond with credit to be earned.

**EDCI 4992G Special Topics in Curriculum and Instruction** 1-3 cr.

Prerequisite: consent of department. The content of the courses will be varied from semester to semester. These courses may be repeated but total credit may not exceed six semester hours in any degree program. Section number will correspond with credit to be earned.

**EDCI 4993G Special Topics in Curriculum and Instruction** 1-3 cr.

Prerequisite: consent of department. The content of the courses will be varied from semester to semester. These courses may be repeated but total credit may not exceed six semester hours in any degree program. Section number will correspond with credit to be earned.

**EDCI 4995G Internship in Secondary Teaching** 6 cr.

Prerequisite: open only to students admitted to the Alternate Post-Baccalaureate Secondary Teacher Certification Program who have completed a minimum of 12 hours of professional education courses and all appropriate methods courses prior to enrollment in this internship and who presently hold a teaching position in their area of desired certification. The intern will participate in classroom teaching, observation, planning and evaluation conferences, school and community activities, and other school-related experiences. Enrollment in two consecutive semesters (12 cr.) is required.

**Educational Foundations and Research**

**EDFR 1000 Introduction to Computers in Education** 3 cr.

Study of basic computer terminology the utilization of computers in simple school applications and the exploration of problems and

issues confronting computer education. Students will also develop skills in the evaluation of software/courseware programs.

**EDFR 2051 Introduction to the Study of Education** 3 cr.

An introduction to the development, organization, and socio-political foundations of American education with emphasis on public elementary and secondary schools.

**EDFR 4990 Special Topics in Education** 3 cr.

Prerequisite: consent of department and major professor. Topic will vary from semester to semester. This course may be repeated once for credit.

**EDFR 6090 Independent Research in  
Educational Foundations** 1-3 cr.

(EDFR 6090 and EDGC 6090 are cross-listed) Prerequisites: consent of department and major professor. Independent research under the supervision of a graduate faculty member. The course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.

**EDFR 6400 History of American Education** 3 cr.

The historical evolution of educational thought and practice in the United States from the colonial period to the present with attention given to significant educational movements and European influences.

**EDFR 6420 Philosophy of American Education** 3 cr.

A study of trends in the philosophy of education with emphasis upon American education.

**EDFR 6430 Psychological Foundations of Education** 3 cr.

Application of principles of human growth and development to education.

**EDFR 6432 Analysis of Classroom Learning** 3 cr.

Application of learning principles and related research to classroom practice.

**EDFR 6440 Socio-Cultural Foundations of Education** 3 cr.

An examination of the social factors affecting learning and education as well as the changing relationship between the schools and other societal institutions. The course is also designed to develop an understanding and an appreciation of the broader social forces that play a major role in current issues and concerns in education.

**EDFR 6500 Contemporary Urban Education** 3 cr.

An understanding of the urbanization process in America and its effect upon education. Current problems that relate to education in metropolitan areas will be identified and analyzed.

**EDFR 6620 Educational Measurement and Evaluation** 3 cr.

Introduction to concepts important to measurement and evaluation in education. Discussion of types of informal and formal assessment; the purpose of assessment; the development and use of valid reliable objective assessment instruments including paper-and-pencil tests and performance assessment; grading; the selection of standardized tests and the interpretation of test scores; and the use of assessment information.

**EDFR 6675 Advanced Educational Program Evaluation** 3 cr.

(EDFR 6675 and EDCI 6675 are cross-listed) Prerequisites EDCI 6670 and EDFR 6710 and 6711 or consent of department. This course is designed to provide students with the research and evaluation skills required to implement various program evaluation models. It is also intended to provide the skills necessary for effectively using the standards of the National Joint Committee on Standards for Program Evaluation as required by state certification guidelines.

**EDFR 6700 Educational Research** 3 cr.

This course is an introductory research course for educators. It is designed to provide students with the basic information needed to

understand the process of systematically researching a problem and to enable students to evaluate and interpret the research of others.

**EDFR 6710 Introduction to and Application of Basic Statistical Methods in Education** 3 cr.

An introduction to statistical techniques with special attention placed on the interpretation of results. Topics discussed include descriptive statistics, the logic of inferential hypothesis testing, inferential statistics, and application of these concepts using representative tests. Concurrent registration in Educational Foundations and Research 6711 is required in order to receive credit for Educational Foundations and Research 6710.

**EDFR 6715 Qualitative Research Methods in Education** 3 cr.

Prerequisite: Educational Foundations and Research 6700 or consent of department. This course is designed to introduce graduate students to the application of qualitative research methods, the analysis of qualitative data, and the uses of qualitative research in education. Field research techniques will be reviewed and utilized by students.

**EDFR 6721 Advanced Qualitative Research in Education** 3 cr.

Prerequisites: successful completion of the doctoral qualifying examination Educational Foundations and Research 6715 or consent of instructor. This course explores the various theoretical traditions within the qualitative research paradigm; the methodological issues unique to qualitative research; and the implications of the various approaches for educational research.

**EDFR 6725 Methods in Multivariate Analysis** 3 cr.

Prerequisite: Educational Foundations 6720 or consent of department. Multivariate statistical techniques to include multiple regression multivariate analysis of variance discriminant canonical and factor analysis will be discussed in detail as they relate to educational research. Basic concepts of matrix algebra and multinormal distribution theory will also be discussed as they relate to multivariate methods.

**EDFR 6726 Advanced Educational Research Models** 3 cr.

Prerequisite: EDFR 6725. The course presents three advanced models employed in contemporary educational research: latent trait measurement generalizability theory and confirmatory covariance structure analysis. The purposes of these models are presented and use of computer software that implements the methods is explained.

**EDFR 6728 Quasi-Experimental Designs in Educational Research and Evaluation** 3 cr.

Prerequisite: EDFR 6720 or consent of department. This course reviews theories of causation and validity in quantitative social science methodology. Varieties of comparison designs and post-hoc analyses will be presented. Appropriate statistical analyses will be discussed.

**EDFR 6730 Research Design in Education** 3 cr.

Prerequisite: EDFR 6720 and successful completion of the doctoral qualifying examination, or consent of department. This course presents the purpose and principles of quantitative research design. Discussion emphasizes experimental, quasi-experimental, and non-experimental designs. Appropriate statistical analyses for these designs are presented.

**EDFR 6740 Psychometric Theory and Procedures in Educational Assessment Instruments** 3 cr.

Prerequisites: EDFR 6720 and Educational Leadership and Foundations 6620 or consent of department. This course presents the theory and practice in the construction of educational assessment instruments. Psychometric theory will be introduced and students

are expected to demonstrate all phases of the test development process for norm- and criterion-referenced measurement approaches. Appropriate statistical procedures for psychometric analysis will be presented.

**EDFR 6750 Computer Applications in Education** 3 cr.

This course will provide an overview of some of the current uses of microcomputers in education and an evaluation of educational software. Applications in the areas of administration, instruction, and pupil personnel services will be examined.

**EDFR 6990 Independent Study in Education** 1-3 cr.

Prerequisites: consent of department and major professor. Independent study under the direction of a graduate faculty member. This course may be repeated but the total credit may not exceed six semester hours. Section number will correspond with credit to be earned.

**EDFR 6991 Practicum in Educational Evaluation** 3 cr.

(EDFR 6991 and EDCI 6991 are cross listed). Prerequisite: EDCI 6675 EDFR 6675 or consent of department. This course is intended to provide students with the opportunity to practice in an actual school setting the program evaluation skills learned in previous courses. The practicum will be conducted under the supervision of a graduate faculty member who is an experienced evaluator.

**EDFR 6993 Special Topics in Educational Research** 1-3 cr.

Prerequisite: consent of department. Topic will vary from semester to semester. Course may be repeated for a maximum of nine semester hours credit. Section number will correspond with credit to be earned.

**EDFR 6995 Doctoral Seminar in Education** 1 cr.

Prerequisite: open only to doctoral students in residence. Each doctoral student is expected to attend seminar during each semester of required residence. The seminar will consider topics of interest from the major areas of professional education. May be repeated for credit.

**EDFR 7000 Thesis Research** 1-9 cr.

To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.

**EDFR 7040 Examination or Thesis Only** 0 cr.

No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.

**EDFR 7050 Dissertation Research** 1-9 cr.

Prerequisite: approval by the candidate's graduate committee. To be repeated for credit until the dissertation is accepted. Section number will correspond with credit to be earned.

**EDFR 4990G Special Topics in Education** 3 cr.

Prerequisite: consent of department and major professor. Topic will vary from semester to semester. This course may be repeated once for credit.

### Counselor Education

**EDGC 6090 Independent Research in Educational Foundations** 1-3 cr.

(EDFR 6090 and EDGC 6090 are cross-listed) Prerequisites: consent of department and major professor. Independent research under the supervision of a graduate faculty member. The course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.

- EDGC 6330 Career Counseling and Life Planning** 3 cr.  
Prerequisite: admission to degree program or consent of department. The theory, nature, and principles of career development and counseling.
- EDGC 6340 Career Counseling Techniques** 3 cr.  
Prerequisites: EDGC 6330, 6430 and admission to degree program or consent of department. The study of techniques for delivering and integrating career development and guidance services through a variety of methods including individual and group counseling workshops, self-study programs, computer programs, and telephone hotlines. Students practice career counseling techniques within a structured setting. This course combines lecture and lab work.
- EDGC 6400 Theories of Counseling** 3 cr.  
Examination of the major theoretical approaches to counseling and their relationship to the counseling process. Analysis and evaluation of the function of theoretical constructs and their impact on counseling practice.
- EDGC 6430 Counseling Techniques** 3 cr.  
An analysis of the theory, dynamics, and practice of counseling clients. Lab experience required.
- EDGC 6435 Substance Abuse Counseling** 3 cr.  
Prerequisites: EDGC 6400, 6430 and admission to a degree program or consent of department. Theories and techniques of counseling substance abusing clients, as well as an examination of the physiological and psychological aspects of substance abuse, will be covered in this course designed for students in counseling related fields. The course will also include practice in various counseling techniques utilized in the treatment of alcohol and drug abusing clients.
- EDGC 6439 Advanced Counseling Theories** 3 cr.  
Prerequisite: admission to degree program or consent of the department. This course provides advanced instruction in the major counseling theories introduced in EDGC 6400. Students examine the original works of major theorists and develop professional expertise in several approaches to the practice of counseling.
- EDGC 6440 Advanced Counseling Techniques** 3 cr.  
Prerequisites: EDGC 6400, 6430 and admission to a degree program or consent of department. This course includes an experiential approach to the development of counseling skills and the conceptualization of client concerns. The application of principles and techniques of major counseling theories will be presented. Skill practice will be included. Lab experience required.
- EDGC 6452 Multicultural Counseling** 3 cr.  
Prerequisite: EDGC 6430 and admission to a degree program or consent of department. The application of counseling techniques to special populations with culturally different backgrounds. The course is designed to help counselors maximize their effectiveness by understanding both similarities and differences of a multicultural population.
- EDGC 6500 Contemporary Urban Problems in Counseling** 3 cr.  
Prerequisite: admission to degree program or consent of department. The identification and investigation of contemporary counseling problems and the examination of trends and innovations particularly adaptive to the resolution of these problems.
- EDGC 6525 Employee Assistance Counseling** 3 cr.  
Prerequisites: EDGC 6330, 6400, 6430 and admission to a degree program or consent of department. Theories and techniques of counseling employees in business and industrial settings are covered in this course designed for students in counseling and counseling related fields. Additionally, this course will acquaint students with the history, development, functions and current research on employee assistance programs.
- EDGC 6535 Human Services Counseling** 3 cr.  
Prerequisites: EDGC 6400 and admission to degree program or consent of department. The theory and practice of counseling as applied to human services agencies. The role and function of the counselor in human services agencies are emphasized. A study of the diagnosis and treatment of mental and emotional disorders is required.
- EDGC 6550 School Counseling** 3 cr.  
Prerequisite: EDGC 6400 and admission to degree program or consent of department. This course will provide an introduction to current concepts relative to the school counseling profession. Practical application of concepts within the diverse range of school environments will be covered. Structuring and implementation of a feasible comprehensive counseling program will be emphasized.
- EDGC 6630 Analysis of the Individual** 3 cr.  
Prerequisites: admission to degree program or consent of department. Qualitative and quantitative assessment of the individual in various phases of development, traits, potentialities, and accomplishments. Assessment techniques are examined with regard to health development. Developing a case study and planning treatment are included.
- EDGC 6660 Crisis Intervention Counseling** 3 cr.  
Prerequisites: EDGC 6430 and admission to a degree program or consent of department. The theory and practical application of crisis intervention techniques. Special attention is given to counseling approaches for use with circumstantial and developmental life crises.
- EDGC 6820 Organization and Administration of Guidance Services** 3 cr.  
The organization and administration of guidance programs.
- EDGC 6840 Family Counseling** 3 cr.  
Prerequisite: admission to a degree program or consent of department. An introduction to the theoretical models and practitioner skills for counseling with families. The course includes specific emphasis on short-term approaches for family-related counseling problems.
- EDGC 6850 Ethical and Professional Issues in Counseling** 3 cr.  
Prerequisite: admission to degree program or consent of department. This course provides an overview of the critical professional issues in counseling with emphasis on current ethical and values-related questions and their relationship to the counselor's role in training, supervision, consultation, appraisal, and research.
- EDGC 6895 Internship in Counseling** 3 cr.  
Prerequisite: approved application and admission to degree program or consent of department. Observation and participation in counseling in schools, central offices, special projects, hospitals, community agencies, and other controlled clinical settings. Three hundred hours of supervised fieldwork is required. Course must be repeated for a total of six credits.
- EDGC 6990 Practicum in Counseling** 1-3 cr.  
Prerequisite: EDGC 6400, 6430, 6440 and admission to a degree program or consent of department. Observation and counseling in school, higher education, community, and controlled laboratory settings. Lectures, seminars, field work, and related research projects where applicable. One hundred hours of supervised fieldwork is required. Course may be repeated once for a total of six credits.
- EDGC 6993 Special Topics in Counselor Education** 1-3 cr.  
Prerequisite: consent of department. Topic will vary from semester to semester. Section number will correspond with the credit to be

earned. Course may be repeated for a maximum of six semester hours within a particular degree program.

**EDGC 6995 Independent Study in Counselor Education** 1-3 cr.  
Prerequisites: consent of department and major professor. Investigation of pertinent problems under the direction of a graduate faculty member. This course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.

**EDGC 6996 Techniques of Counselor Supervision** 3 cr.  
Prerequisites: doctoral standing or consent of department. Theory and techniques of supervising counselors in a variety of settings. Theory, research, and experience in monitoring and evaluating counselor performance during stages of the counseling process are emphasized. Field experience required.

**EDGC 6997 Research Seminar in Counselor Education** 3 cr.  
Prerequisite: consent of department. Doctoral students will complete their dissertation proposals under faculty supervision. Course must be completed for credit until dissertation proposal has been accepted by the student's committee. A maximum of three semester hours of credit may be counted in a degree program.

**EDGC 6998 Doctoral Seminar: Consultation in Counselor Education** 3 cr.  
Prerequisite: doctoral standing or consent of department. Discussion and analysis of the approaches and procedures of consultation services in counselor education with emphasis on applying skills to consultation problems in various counseling settings.

**EDGC 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.

**EDGC 7040 Examination or Thesis Only No credit** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.

**EDGC 7050 Dissertation Research** 1-9 cr.  
To be repeated for credit until the dissertation is accepted. Section number will correspond with credit to be earned.

## **Human Performance**

**EDHP 1002 Basketball and Softball for Women** 1 cr.  
Acquisition of knowledge and skills in basketball and softball. Three hours of laboratory.

**EDHP 1005 Flag Football, Track and Field** 1 cr.  
Acquisition of knowledge and skills in flag football and in track and field. Three hours of laboratory.

**EDHP 1010 Golf** 1 cr.  
A course designed to promote the acquisition of knowledge and skill in golf. Three hours of laboratory.

**EDHP 1011 Tennis I** 1 cr.  
Acquisition of knowledge and skill in tennis. Three hours of laboratory.

**EDHP 1021 Tennis II** 1 cr.  
Prerequisite: EDHP 1011 or consent of department. A course designed to provide tennis-stroke instruction for intermediate-level players. Three hours of laboratory.

**EDHP 1023 Racquetball and Badminton** 1 cr.  
Acquisition of knowledge and skill in racquetball and badminton. Three hours of laboratory.

**EDHP 1030 Basic Dance Movements** 1 cr.  
The study of basic dance movements with special emphasis upon such movement factors as shape, space, and force as well as basic skills involving locomotion, non-locomotion, and rhythm. Three hours of laboratory.

**EDHP 1031 Introduction to Folk, Square, Round and Social Dance** 1 cr.  
A course designed to promote the acquisition of knowledge and skill in folk, square, round, and social dance. Three hours of laboratory.

**EDHP 1033 Aerobic Dance** 1 cr.  
A total fitness program designed to strengthen the heart, lungs, and vascular system through continuous rhythmic movement. Three hours of laboratory.

**EDHP 1040 Beginning Gymnastics** 1 cr.  
A course designed to develop beginning skill in tumbling, gymnastics apparatus, and trampoline. Three hours of laboratory.

**EDHP 1050 Conditioning for Physical Fitness** 1 cr.  
A course designed to promote physical fitness with emphasis on cardio-respiratory endurance, muscular strength, flexibility, and body composition. Three hours of laboratory.

**EDHP 1060 Weight Training** 1 cr.  
Acquisition of knowledge and skill in weight training. Three hours of laboratory.

**EDHP 1070 Beginning Swimming** 1 cr.  
A course designed to provide the student with knowledge of swimming, basic swimming skills, and water safety aids. Three hours of laboratory.

**EDHP 1071 Advanced Swimming** 1 cr.  
Prerequisite: EDHP 1070 or consent of department. A course designed to provide the student with knowledge of advanced swimming techniques and basic water safety skills. Three hours of laboratory.

**EDHP 1072 Lifeguard Training Water Safety Instructor** 2 cr.  
Prerequisite: EDHP 1071 or consent of department. A course to provide the student with lifeguard training and water safety instruction skills in accordance with Red Cross Standards. One hour of lecture and three hours of lab.

**EDHP 2000 Theory and Practice of Coaching Volleyball** 2 cr.  
A course designed to provide the student with skills, technique, and knowledge relative to coaching volleyball.

**EDHP 2001 Theory and Practice of Coaching Baseball** 2 cr.  
A course designed to provide the student with skills, technique, and knowledge relative to coaching baseball.

**EDHP 2002 Theory and Practice of Coaching Softball** 2 cr.  
A course designed to provide the student with skills, technique, and knowledge relative to coaching softball.

**EDHP 2003 Theory and Practice of Coaching Basketball** 2 cr.  
A course designed to provide the student with skills, technique, and knowledge relative to coaching basketball.

**EDHP 2004 Theory and Practice of Coaching Track and Field** 2 cr.  
A course designed to provide the student with skills, technique, and knowledge relative to coaching track and field.

**EDHP 2005 Theory and Practice of Coaching Football** 2 cr.  
A course designed to provide the student with skills, technique, and knowledge relative to coaching football.

**EDHP 2032 Creative Dance** 1 cr.  
Prerequisite: Human Performance 1030 or consent of department. Creative dance with emphasis on musical structure, spatial relationships, and design and choreography. Three hours of laboratory.

- EDHP 2070 Psychology of Coaching** 2 cr.  
Psychological considerations applied to the athletic situation, including coaching personalities, athletic personalities, psychological injuries, motivation, mental preparation, relaxation techniques, and stereotypes in athletics.
- EDHP 2110 Foundations of Human Performance and Health Promotion** 3 cr.  
The study of the history, principles, philosophies, and social foundations of health and physical education.
- EDHP 2310 Methods and Materials in Physical Education in the Elementary Schools** 2 cr.  
A course designed for the physical education and elementary school teacher. One hour of lecture and two hours of laboratory.
- EDHP 2600 Leadership in Social Recreation** 2 cr.  
Techniques of leadership in recreational activities, crafts, group singing, party games and contests, dancing and outings. One hour of lecture and two hours of laboratory.
- EDHP 2700 Special Physical Education** 1 cr.  
Prerequisite: consent of department. A program of special activities and exercises for students when regular activities are not appropriate. (May be repeated for one semester hour credit.) Three hours of laboratory.
- EDHP 3200 Kinesiology and Biomechanics** 3 cr.  
Prerequisite: BIOS 1301, 1303, 1311, and 1313; EDHP 2110; or consent of the department. Special emphasis is given to factors influencing movement; mechanics of movable parts and means of voluntary control; action of joints and muscles in natural movements in daily life in gymnastics in dance and in sports; and the mechanics of posture and common abnormalities of spine and foot.
- EDHP 3210 Principles of Motor Development and Motor Learning** 3 cr.  
Prerequisite: Human Performance 3201 or consent of department. A study of the foundations of physical growth and development. The course focuses upon the emergence of motor patterns and skills as a result of growth, maturation, and learning during the period of infancy through adolescence.
- EDHP 3470 Intramural Sports and Officiating** 2 cr.  
Spring semester. Prerequisites: Human Performance 1100 and 2110. A study of problems in the organization and administration of intramural sports and officiating techniques of selected major and minor sports. One hour of lecture and two hours of laboratory.
- EDHP 4222 Physical Fitness Programming** 3 cr.  
Prerequisite: EDHP 3201 or consent of department. Provides skills for physical fitness programming in schools, hospitals, and fitness centers. Training will emphasize techniques used for implementing an individualized exercise program as well as strategies for behavior change.
- EDHP 4225 Applied Exercise Physiology: Cardio-respiratory Rehabilitation** 3 cr.  
Prerequisite: EDHP 3201 or 6220 or consent of department. Exercise principles and practices that have application for professionals that work for the prevention of cardio-respiratory diseases or for the rehabilitation of persons so affected.
- EDHP 4301 Advanced Theories and Techniques of Basketball and Volleyball** 3 cr.  
This course is designed to assist teachers in applying theories to develop proficiencies in the instruction of basketball and volleyball.
- EDHP 4302 Advanced Theories and Techniques of Softball and Soccer** 3 cr.  
This course is designed to assist teachers in applying theories to develop proficiencies in the instruction of softball and soccer.
- EDHP 4310 Advanced Theories and Techniques of Golf and Tennis** 3 cr.  
This course is designed to assist teachers or instructors in applying theories to develop proficiencies in teaching the sports of golf and tennis.
- EDHP 4320 Curriculum Development and Instructional Strategies in Human Performance** 3 cr.  
Prerequisite: EDHP 2110 or consent of department. Curriculum development and teaching methods involved in physical education. Two hours of lecture and two hours of laboratory.
- EDHP 4480 Evaluation and Treatment of Sports Injuries** 3 cr.  
Prerequisite: EDHP 3200 or consent of department. A study of the principles and practices related to the care of the injured. There is special emphasis on care of athletic injuries. One hour of lecture and four hours of laboratory.
- EDHP 4522 Sport Management** 3 cr.  
Prerequisite: EDHP 2201 or consent of department. Principles of sport and athletic administration for the private sector and for interscholastic and intercollegiate athletic programs. Sample topics include marketing, computer applications, legal knowledge, financing, facilities, and contest management.
- EDHP 4710 Introduction to Adapted Physical Education** 3 cr.  
Prerequisites: EDHP 3200 and 3210 or consent of department. This course examines the full range of special physical education - corrective, adapted, developmental. Motor abilities that are characteristic of individuals with disability will be described. Principles of "mainstreaming" and "least restrictive environments" will be emphasized. Two hours of lecture and two hours of laboratory.
- EDHP 4720 Adapted Physical Education for Individuals with Behavioral and Educational Disability** 3 cr.  
Prerequisite: EDHP 4710 or consent of department. This course will provide information appropriate for those who teach physical education or motor therapy to individuals with disability described as mentally retarded, learning disabled, or emotionally disturbed. Two hours of lecture and two hours of laboratory.
- EDHP 4730 Adapted Physical Education for Individuals with Chronic Disability** 3 cr.  
Prerequisite: EDHP 4710 or consent of department. A study of individuals with disability and techniques for adapting physical education to their unique needs. Two hours of lecture and two hours of laboratory.
- EDHP 4740 Adapted Physical Education Curriculum** 3 cr.  
Prerequisites: EDHP 4720 and 4730 or consent of department. A study of the processes of curriculum design, assessment, and program will be placed on curriculum needs, implementation, and Individualized Education Programs (IEPs) and Individualized Family Service Plans (IFSPs).
- EDHP 4990 Special Topics in Human Performance** 3 cr.  
Prerequisite: consent of department. Topics may vary from semester to semester. This course may be repeated once for credit.
- EDHP 4998 Practicum in Physical Education** 1-6 cr.  
Prerequisites: Junior standing or higher, completion of a minimum of 50 percent of the required EDHS/EDHP undergraduate courses and/or consent of department. Supervised experiences in cardiovascular fitness, physical education, physical fitness, coaching,

programs for the aging, or related topics. This course may be repeated but total credit may not exceed six semester hours.

- EDHP 6110 Current Issues and Trends in Human Performance** 3 cr.  
Prerequisite: consent of department. A study of current issues and trends in the field of physical education: origin, present status, possible future direction and impact.
- EDHP 6140 Sport and Society** 3 cr.  
Prerequisite: consent of department. Development of a theoretical framework and analysis of research relative to cultural-social influences on sports and conversely the impact of sports on society.
- EDHP 6170 Tests and Measurements in Human Performance and Health Promotion** 3 cr.  
A study of the construction, use, administration, and interpretation of evaluative instruments in Human Performance and Health Promotion.
- EDHP 6210 Principles of Motor Learning** 3 cr.  
A study of the relationship between learning theory and research in motor behavior with implications for teaching and performing motor skills.
- EDHP 6217 Psychology of Sport** 3 cr.  
Prerequisite: six hours of undergraduate psychology or consent of department. This course will explore sport psychology, particularly those parameters that are social in nature and which influence behavior and performance. Considerations include personality and the athlete, psychological motivation and athletic performance, nature and dynamics of leadership, group dynamics, group cohesion, and social facilitation.
- EDHP 6220 Foundations of Exercise Physiology** 3 cr.  
Prerequisite: consent of department. A study of the functional responses of the body in an exercise state and the specific adaptability of the body to training stimuli. Special consideration will be given to the practical applicability of scientific facts to teaching human performance and athletics.
- EDHP 6224 Exercise Physiology Laboratory Methods** 3 cr.  
Prerequisite: EDHP 6220 or consent of department. Includes an examination of laboratory methods with respect to exercise stress testing, body composition, flexibility, and muscular strength and endurance. Directed toward students seeking ACSM certification.
- EDHP 6230 The Biomechanics of Sport** 3 cr.  
Prerequisite: consent of department. A study of the mechanical aspects of performance in athletics and dance which affect the efficiency and effectiveness of human movement. Special consideration will be given to cinematographic and task analysis techniques to improve evaluation of movement.
- EDHP 6404 Fitness and Aging** 3 cr.  
Prerequisite: Human Performance 2201 or consent of department. Designed for individuals interested in working with the elderly in helping to reduce or retard the aging process and rehabilitate those with chronic conditions through an exercise wellness program.
- EDHP 6406 Adapted Physical Activity for Adults with Disabilities** 3 cr.  
Prerequisite: consent of department. This course examines the etiology, symptomatology, and characteristics of disabling conditions and their implications for therapeutic physical activity intervention in clinical and non-clinical settings. Emphasis is placed upon increasing the quality of life for frail and disabled adults.
- EDHP 6511 Curriculum Development in Physical Education** 3 cr.  
Prerequisite: consent of department. A study of curriculum development, analysis, and trends in physical education.

- EDHP 6712 Adapted Physical Activities and Health Management for Infants, Toddlers, and Preschoolers with Disabilities** 3 cr.  
Prerequisite: consent of department. This course is designed for educators and health professionals. Focus is on sensory and motor skills of children with delayed or abnormal development. Concepts for early intervention include assessment, reflex analysis, handling and positioning, and play. Also medical apparatus, adaptive equipment, nutrition, feeding techniques, and other IFSP health concerns will be included. Two hours lecture and two hours laboratory.
- EDHP 7000 Thesis Research in Human Performance** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- EDHP 7040 Examination or Thesis Only in Human Performance** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- EDHP 4222G Physical Fitness Programming** 3 cr.  
Prerequisite: EDHP 3201 or consent of department. Provides skills for physical fitness programming in schools, hospitals, and fitness centers. Training will emphasize techniques used for implementing an individualized exercise program as well as strategies for behavior change.
- EDHP 4225G Applied Exercise Physiology: Cardio-respiratory Rehabilitation** 3 cr.  
Prerequisite: EDHP 3201 or 6220 or consent of department. Exercise principles and practices that have application for professionals that work for the prevention of cardio-respiratory diseases or for the rehabilitation of persons so affected.
- EDHP 4301G Advanced Theories and Techniques of Basketball and Volleyball** 3 cr.  
This course is designed to assist teachers in applying theories to develop proficiencies in the instruction of basketball and volleyball.
- EDHP 4302G Advanced Theories and Techniques of Softball and Soccer** 3 cr.  
This course is designed to assist teachers in applying theories to develop proficiencies in the instruction of softball and soccer.
- EDHP 4310G Advanced Theories and Techniques of Golf and Tennis** 3 cr.  
This course is designed to assist teachers or instructors in applying theories to develop proficiencies in teaching the sports of golf and tennis.
- EDHP 4320G Curriculum Development and Instructional Strategies in Human Performance** 3 cr.  
Prerequisite: EDHP 2110 or consent of department. Curriculum development and teaching methods involved in physical education. Two hours of lecture and two hours of laboratory.
- EDHP 4480G Evaluation and Treatment of Sports Injuries** 3 cr.  
Prerequisite: EDHP 3200 or consent of department. A study of the principles and practices related to the care of the injured. There is special emphasis on care of athletic injuries. One hour of lecture and four hours of laboratory.
- EDHP 4522G Sport Management** 3 cr.  
Prerequisite: EDHP 2201 or consent of department. Principles of sport and athletic administration for the private sector and for interscholastic and intercollegiate athletic programs. Sample topics

include marketing, computer applications, legal knowledge, financing, facilities, and contest management.

**EDHP 4710G Introduction to Adapted Physical Education** 3 cr.  
Prerequisites: EDHP 3200 and 3210 or consent of department. This course examines the full range of special physical education - corrective, adapted, developmental. Motor abilities that are characteristic of individuals with disability will be described. Principles of "mainstreaming" and "least restrictive environments" will be emphasized. Two hours of lecture and two hours of laboratory.

**EDHP 4720G Adapted Physical Education for Individuals with Behavioral and Educational Disability** 3 cr.  
Prerequisite: EDHP 4710 or consent of department. This course will provide information appropriate for those who teach physical education or motor therapy to individuals with disability described as mentally retarded, learning disabled, or emotionally disturbed. Two hours of lecture and two hours of laboratory.

**EDHP 4730G Adapted Physical Education for Individuals with Chronic Disability** 3 cr.  
Prerequisite: EDHP 4710 or consent of department. A study of individuals with disability and techniques for adapting physical education to their unique needs. Two hours of lecture and two hours of laboratory.

**EDHP 4740G Adapted Physical Education Curriculum** 3 cr.  
Prerequisites: EDHP 4720 and 4730 or consent of department. A study of the processes of curriculum design, assessment, and program will be placed on curriculum needs, implementation, and Individualized Education Programs (IEPs) and Individualized Family Service Plans (IFSPs).

**EDHP 4990G Special Topics in Human Performance** 3 cr.  
Prerequisite: consent of department. Topics may vary from semester to semester. This course may be repeated once for credit.

**EDHP 4998G Practicum in Physical Education** 1-6 cr.  
Prerequisites: Junior standing or higher, completion of a minimum of 50 percent of the required EDHS/EDHP undergraduate courses and/or consent of department. Supervised experiences in cardiovascular fitness, physical education, physical fitness, coaching, programs for the aging, or related topics. This course may be repeated but total credit may not exceed six semester hours.

## Health Promotion

**EDHS 1110 Personal Health and Wellness** 3 cr.  
A survey of content areas that affect the overall health of the individual, with particular emphasis on health promotion (wellness), decision-making, and health behavior. Content areas include emotional health, sexuality, nutrition, exercise, weight control, environmental health, chronic diseases, consumerism, aging, death, and dying.

**EDHS 2420 Legal Aspects of Medical Coding** 3 cr.  
Provides general information about the structure and function of the American legal system and its relationship to the health care industry. Teaches the rules and regulations surrounding "fraud" and "abuse" as currently defined in the health care industry. It also provides information concerning medical office accounting procedures for billing, bad debt, insurance handling, and other monetary regulations. Also teaches students how to professionally instruct their supervisors to provide proper coding documentation.

**EDHS 2500 First Aid** 1 cr.  
A course dealing with CPR and other procedures to be employed in first aid treatment, including: wounds, shock, poisoning, and fractures. One hour of lecture and one hour of laboratory.

**EDHS 2610 Nutrition and Health** 2 cr.  
A study of the relationship of health and nutrition, with special emphasis on the investigation of the relationship of nutrition and educational problems. The course is designed to provide a basic understanding of nutrition science and human behavior in an attempt to make research findings applicable in daily nutrition in the lives of children. An effort will be made to bridge the gap between the science of nutrition and its practical application to food consumption and healthful selectivity.

**EDHS 2700 Drug Use and Abuse** 3 cr.  
Designed to provide information concerning drugs which affect the body and the action or reaction of the body to these drugs. In addition, societal as well as personal influences which contribute to drug use will be studied.

**EDHS 3101 The Health Aspects of Consumerism** 3 cr.  
This course is designed to provide students with an opportunity to gain knowledge about health-related products and services, recognize fraud and quackery, assess their attitudes about health consumerism, and alter their health consumer behaviors.

**EDHS 3400 Health and Safety Education** 3 cr.  
A course designed to teach health and safety principles with emphasis on organization, administration, and evaluation.

**EDHS 4111 Epidemiological Principles in Health Promotion** 3 cr.  
Prerequisite: EDHS 2170 or consent of department. The epidemiologic orientation to health and disease, as well as basic descriptive and analytic aspects of epidemiology, will be covered in this course designed for students in health education-related fields.

**EDHS 4190 Current Problems in Health Promotion** 3 cr.  
Prerequisite: consent of department. Topic may vary from semester to semester. This course may be repeated once for credit.

**EDHS 4201 The School Health Program** 3 cr.  
Prerequisite: EDHS 1110 or consent of department. A study of the total school health program - the school environment, health services, and health education. Roles and responsibilities of appropriate school personnel will be explored.

**EDHS 4301 Methods of Health Education** 3 cr.  
This is a preservice/in-service course designed for health educators. Emphasis will be on current health problems and the importance of developing positive healthy behavior patterns. Current research literature will be examined for selection and use of effective teaching strategies.

**EDHS 4610 Nutritional Aspects of Health and Physical Fitness** 3 cr.  
The role of nutrition in health promotion and physical fitness is considered through exploring general topics such as nutrient categories, dietary planning, and nutrition education. Also covered are specific areas such as energy balance, weight control, the role of nutrition in fitness and athletic performance, and community nutrition.

**EDHS 4701 Emotional Health and Critical Issues** 3 cr.  
A study of positive emotional health designed to enhance the student's own emotional health. Promotes the use of techniques to help self and others deal with problem areas having emotional content.

**EDHS 4702 Death and Dying** 3 cr.  
This course is designed to explore views toward death, dying, grief, and adjustment. Emphasis will be placed upon helping individuals confront fears and feelings related to death, dying, bereavement, and adjustment.

- EDHS 4703 Stress Management for Health Promotion** 3 cr.  
This course focuses upon the relationship between stress and health, disease and stress management techniques. Also, theory and practical applications for a variety of populations will be included.
- EDHS 4704 Health Issues of Aging** 3 cr.  
Focuses on strategies for developing and conducting health and fitness promotion programs for older adults. Topics include functional changes, nutrition, exercise, pharmacological aspects, and death and dying.
- EDHS 4801 Education for a Healthy Sexuality** 3 cr.  
A study of human sexuality as it affects and influences decisions and interactions relative to a healthy sexuality. This class promotes self-discovery and growth leading to greater personal comfort with sexuality and sexual issues.
- EDHS 4998 Practicum in Health Promotion** 1-6 cr.  
Prerequisites: junior standing or higher completion of a minimum of 50 percent of the required EDHS/EDHP undergraduate courses and/or consent of department. Supervised experiences in health promotion. This course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned. Graduate students cannot receive more than nine hours of graduate credit from the combined courses of EDHS 4998 and 6990, or EDHP 4998 and/or 6990.
- EDHS 6201 Health Promotion and Risk Reduction** 3 cr.  
Prerequisite: EDHP 6170 and EDFR 6700 or EDFR 6710 or the consent of department. This seminar will provide an opportunity for students to learn about health promotion by evaluating the current professional literature in health education and health promotion. The basics of scientific investigation, scientific writing, risk appraisal, intervention strategies, and behavior change on an individual, group, and community level will be explored.
- EDHS 6801 Sexuality and Aging** 3 cr.  
Focus on sexuality and the process of aging in contemporary culture.
- EDHS 6803 Nutrition and Aging** 3 cr.  
The focus of the course is on the nutritional need of the aging. It includes methods on how best to meet the dietary and nutritional requirements of the growing older population.
- EDHS 6990 Independent Study in Health Promotion** 1-3 cr.  
Prerequisite: advanced graduate standing in the Department of Human Performance and Health Promotion and consent of major professor. Investigation of pertinent health-related problems under the direction of a graduate faculty member. Student must have completed Educational Foundations and Research 6700 or equivalent and Health Promotion 6170. This course may be repeated but total credit for all independent study (Health-Safety and Health Promotion) may not exceed six semester hours toward a Master's degree in the Department of Human Performance and Health Promotion. Section number will correspond with credit to be earned.
- EDHS 7000 Thesis Research in Health Promotion** 1-6 cr.  
May be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- EDHS 7040 Examination or Thesis Only** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- EDHS 4111G Epidemiological Principles in Health Promotion** 3 cr.  
Prerequisite: EDHS 2170 or consent of department. The epidemiologic orientation to health and disease, as well as basic descriptive and analytic aspects of epidemiology, will be covered in this course designed for students in health education-related fields.
- EDHS 4190G Current Problems in Health Promotion** 3 cr.  
Prerequisite: consent of department. Topic may vary from semester to semester. This course may be repeated once for credit.
- EDHS 4201G The School Health Program** 3 cr.  
Prerequisite: EDHS 1110 or consent of department. A study of the total school health program - the school environment, health services, and health education. Roles and responsibilities of appropriate school personnel will be explored.
- EDHS 4301G Methods of Health Education** 3 cr.  
This is a preservice/in-service course designed for health educators. Emphasis will be on current health problems and the importance of developing positive healthy behavior patterns. Current research literature will be examined for selection and use of effective teaching strategies.
- EDHS 4610G Nutritional Aspects of Health and Physical Fitness** 3 cr.  
The role of nutrition in health promotion and physical fitness is considered through exploring general topics such as nutrient categories, dietary planning, and nutrition education. Also covered are specific areas such as energy balance, weight control, the role of nutrition in fitness and athletic performance, and community nutrition.
- EDHS 4701G Emotional Health and Critical Issues** 3 cr.  
A study of positive emotional health designed to enhance the student's own emotional health. Promotes the use of techniques to help self and others deal with problem areas having emotional content.
- EDHS 4702G Death and Dying** 3 cr.  
This course is designed to explore views toward death, dying, grief, and adjustment. Emphasis will be placed upon helping individuals confront fears and feelings related to death, dying, bereavement, and adjustment.
- EDHS 4703G Stress Management for Health Promotion** 3 cr.  
This course focuses upon the relationship between stress and health, disease and stress management techniques. Also, theory and practical applications for a variety of populations will be included.
- EDHS 4704G Health Issues of Aging** 3 cr.  
Focuses on strategies for developing and conducting health and fitness promotion programs for older adults. Topics include functional changes, nutrition, exercise, pharmacological aspects, and death and dying.
- EDHS 4801G Education for a Healthy Sexuality** 3 cr.  
A study of human sexuality as it affects and influences decisions and interactions relative to a healthy sexuality. This class promotes self-discovery and growth leading to greater personal comfort with sexuality and sexual issues.
- EDHS 4998G Practicum in Health Promotion** 1-6 cr.  
Prerequisites: junior standing or higher completion of a minimum of 50 percent of the required EDHS/EDHP undergraduate courses and/or consent of department. Supervised experiences in health promotion. This course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned. Graduate students cannot receive more than

nine hours of graduate credit from the combined courses of EDHS 4998 and 6990, or EDHP 4998 and/or 6990.

## **Special Education and Habilitative Services**

### **EDSP 1000 Orientation to Special Education 3 cr.**

An orientation to areas of exceptionality with an emphasis on field placement experience. Two hours of lecture and two hours of laboratory.

### **EDSP 2600 Language, Speech, and Hearing for Teachers 3 cr.**

(DCRM 2600 and EDSP 2600 are cross-listed). A survey of the normal development and the common disorders of speech, language, and hearing. Designed to enable teachers a) to treat those disorders which can be handled in the classroom and b) to recognize those that should be referred to other professionals.

### **EDSP 2601 Introduction to the Study of Students with Mild-Moderate Handicaps 3 cr.**

Prerequisite: EDSP 1000 or consent of department. Definitions, etiologies, and description of areas of exceptionality. Emphasis upon educationally relevant learner characteristics and model program delivery system for students with mild moderate handicaps.

### **EDSP 3630 Methods of Designing and Assessing Materials for Individuals with Mild Moderate Handicaps 3 cr.**

Prerequisite: EDSP 3610 or consent of department. The emphasis of the course is on designing and assessing materials to meet the individual educational needs of individuals with mild moderate handicaps.

### **EDSP 4000 Introduction to the Study of People with Exceptionalities 3 cr.**

A survey of all areas of exceptionality. Mental, physical, psychological, and social characteristics in an educational frame of reference.

### **EDSP 4060 Behavior Modification in Applied Settings 3 cr.**

The study of and use of behavior modification techniques in applied settings. In conjunction with coursework students must complete a behavior change project in an applied setting.

### **EDSP 4430 Resource Rooms and Mainstreaming for the Hearing Impaired 3 cr.**

One-time waiver

### **EDSP 4510 Introduction to the Gifted and Talented 3 cr.**

Characteristics, identification, needs, teacher qualifications, and organizational patterns for the gifted and talented.

### **EDSP 4630 Humanistic Approaches to Managing Students with Behavioral Problems 3 cr.**

Group and individual interventions and classroom management techniques for students with behavioral problems. Emphasis on humanistic conceptual models of student variance.

### **EDSP 4775 Tests and Measurements for Exceptional Individuals 3 cr.**

Prerequisite: Minimum grade of C in EDCI 3140 or consent of department. Definition and terminology in tests and measurements as employed with exceptional individuals. Description, analysis, and interpretation of various formal and informal evaluation instruments and practices.

### **EDSP 4776 Practicum in Tests and Measurements for Individuals with Exceptionalities 3 cr.**

Prerequisites: EDSP 3620, 4775, or consent of the department. Conducted under the supervision of university personnel. Required activities include exposure to and experience with informal testing, use of formal evaluation results to generate Individual Education Plans (IEP's), and participation in IEP conferences.

### **EDSP 4800 Introduction to Individuals who have Visual Impairments 3 cr.**

Prerequisite: EDSP 4000 or consent of department. A survey of the development of the visual system and the needs of individuals with a visual impairment. Designed to assist teachers and other service providers in the knowledge of 1) intervention strategies to be used with students who are visually impaired and 2) various service delivery systems for individuals with a visual impairment.

### **EDSP 4810 Structure and Foundation of the Eye 3 cr.**

Designed to provide an orientation to the parts of the eye and their functions; abnormalities and conditions that result in varying degrees of visual loss; and general considerations which these losses require in educational programming.

### **EDSP 4820 Introduction to Braille 3 cr.**

Mastery of the English Braille Code Grade II (Literacy Braille Format); emphasis will be placed on transcribing through the visual modality.

### **EDSP 4830 Orientation and Mobility Training for Individuals who are Visually Impaired 3 cr.**

Concepts and techniques involved in orientation, mobility, and daily living skills for individuals with a visual impairment.

### **EDSP 6000 A Study of Severe Communication Disorders 3 cr.**

Prerequisite: EDSP 6040 or consent of department. A study of assessment and instructional strategies for nonsymbolic communication and prelanguage/language skills. Design of alternative and augmentative communication systems for learners with severe disabilities. Emphasis on strategies to increase meaningful communication opportunities across multiple partners situations and settings.

### **EDSP 6010 Strategies for Managing Group Behaviors of Exceptional Populations 3 cr.**

Prerequisite: EDSP 4000 or consent of department. Effective strategies for group and whole school management with an emphasis on exceptional populations.

### **EDSP 6060 Advanced Applied Behavior Analysis 3 cr.**

Prerequisite: EDSP 4060 or consent of the department. Study of applied behavior analysis and single subject research designs to implement educational and habilitative programs in applied settings. Two hours of lecture and two hours of laboratory.

### **EDSP 6080 Organization and Administration of Special Education and Habilitative Services 3 cr.**

An analysis of procedures, supervisory techniques, and applications of communication media to provide services for individuals with exceptionalities by using local, state, and national resources.

### **EDSP 6210 Introduction to People with Autism 3 cr.**

An exploration of how the diagnosis of autism is established a review of current research and a consideration of the management of people with autism in schools and in the community.

### **EDSP 6420 Educational Audiology 3 cr.**

The application of current audiological technology and techniques to deaf education and speech therapy for the deaf. A basic course in audiology for teachers in all areas of Special Education, but particularly for those in deaf education, assessment, and supervision of Special Education.

### **EDSP 6460 Methods of Teaching Speech and Speechreading to Deaf and Hard of Hearing Students 3 cr.**

No prerequisites. The courses in the area of Deaf Education can be taken independently of one another.

- EDSP 6470 Home School Education for Deaf Infants and Toddlers** 3 cr.  
Theories of early childhood development and related instructional methodologies for hearing impaired infants and toddlers and their parents.
- EDSP 6480 Instruction Strategies and Curriculum Development for Deaf and Hard of Hearing Students** 3 cr.  
Utilization of curricular and language theories and principles of deaf education to create or choose a practical sequence of learning activities for deaf and hard of hearing students. Includes methods of teaching basic subjects to deaf students.
- EDSP 6510 Social and Emotional Needs of the Gifted** 3 cr.  
Prerequisites: EDSP 4510 or consent of department. Defines the distinctive emotional needs of the gifted and presents strategies that educators can use to help the gifted meet those needs at school and at home.
- EDSP 6540 Educational Strategies for the Gifted and Talented** 3 cr.  
Prerequisite: EDSP 4510 or consent of department. Curricular methods, materials, and resources for teaching the gifted and talented.
- EDSP 6545 Literature for the Gifted and Talented** 3 cr.  
(LIBS 6545 and EDSP 6545 are cross-listed) An exploration of research relating to reading behavior of gifted youngsters, examination of criteria for assessing books useful in promoting cognitive growth of high-ability children, and selection and utilization of literature with this population.
- EDSP 6550 Gifted Talented: Curriculum Development and Program Organization** 3 cr.  
Prerequisites: EDSP 4510 and EDCI 6600 or consent of department. Procedures for curriculum development and program organization for the gifted and talented.
- EDSP 6560 Language Development and Language Disabilities of Children from Birth to Five Years** 3 cr.  
Typical and atypical language development and appropriate prevention and intervention procedures for children during the first five years of development.
- EDSP 6610 Advanced Methods of Teaching Students with Learning and Behavior Problems** 3 cr.  
Prerequisite: EDSP 4601 or consent of department. Explores the theory and research underlying the various approaches used in teaching students with mild/moderate handicaps.
- EDSP 6620 Advanced Methods of Teaching Basic Subjects to Students with Mild/Moderate Disabilities** 3 cr.  
Prerequisite: EDSP 6610 or consent of department. Advanced study and application of recommended practices related to teaching language arts, mathematics, science, and social studies to students with mild/moderate disabilities.
- EDSP 6630 Advanced Methods of Designing and Assessing Materials for Mild Moderate Handicapped Students** 3 cr.  
Prerequisite: EDSP 6620 or consent of the department. An in-depth study of the selection, use, analysis, adaptation and development of instructional materials and curricula. Emphasis will also be placed on research and trends in materials and curricula development.
- EDSP 6640 Language Development Diagnosis Intervention: Mild Moderate Disabilities** 3 cr.  
Language development, diagnosis, and intervention with students who have mild/moderate language learning disabilities.
- EDSP 6775 Individual Intelligence Testing** 3 cr.  
Rationale and practicum for those individual intelligence tests most frequently used in educational assessment.
- EDSP 6780 Psychoeducational Assessment of Individuals with Exceptionalities** 3 cr.  
Prerequisite: EDSP 4775 or consent of department. Rationale for and clinical application of psychoeducational assessment procedures. Analysis and synthesis of diagnostic information used in designing appropriate educational programs and planning for individuals with exceptionalities.
- EDSP 6785 Diagnostic Prescriptive Strategies for Individuals with Exceptionalities** 3 cr.  
Prerequisites: EDSP 4775 and 6780 or consent of department. Precision assessment of and programming for individuals with exceptionalities; administration of informal and selected formal evaluation instruments; and interpretation and application of results to instructional programming for individuals in a variety of settings.
- EDSP 6840 Instructional Strategies for Individuals with Visual Impairments** 3 cr.  
Prerequisite: EDSP 4800 or consent of the department. The utilization, development, and evaluation of methods and materials for persons with visual impairments and the study of the organization of program components and priorities for individuals with visual impairments.
- EDSP 6850 Advanced Educational Procedures for Students with Visual Impairments** 3 cr.  
Prerequisites: EDSP 4800, 4820, 4830, or consent of the department. A study of advanced educational strategies utilized in teaching students with visual impairments. Examination of procedures for teaching braille reading, the Nemeth braille code for mathematics and science, and the use of electronic devices for reading and orientation and mobility.
- EDSP 6860 Low Vision and Its Educational Implications** 3 cr.  
Prerequisites: EDSP 4800 and 4810 or consent of the department. A study of the educational strategies utilized in teaching students with low vision. Examination of the procedures and equipment used for educating students who are partially sighted.
- EDSP 6900 Practicum in Education Habilitation of Individuals with Severe Profound Handicaps** 3 cr.  
Prerequisite: consent of department. Field work, observations, seminars, lectures, and/or empirical research projects in programs that provide services for individuals with severe profound handicapping conditions.
- EDSP 6945 Practicum in Education of the Hearing-Impaired Student** 3 cr.  
Prerequisite: consent of department. Field work, observations, seminars, lectures, and/or empirical research projects with hearing impaired children or adults in an academic or rehabilitation setting.
- EDSP 6950 Practicum in Gifted and Talented** 3 cr.  
Prerequisites: EDSP 6540 and consent of department. Field work, observations, seminars, lectures, and/or empirical research project in gifted and talented.
- EDSP 6955 Practicum in Early Intervention** 3-6 cr.  
Offered each semester. Prerequisite: consent of department. Field work, observations, seminars, lectures, and/or empirical research project in early intervention programs for the children with disabilities. Section number will correspond with the credit hours to be earned. Course may be repeated for a maximum of six credit hours.
- EDSP 6960 Practicum in Mild Moderate Special Education and Habilitative Services** 3 cr.  
Prerequisite: EDSP 6620 and consent of department. Field work, observations, seminars, lectures and/or empirical research projects

- in programs that provide services for individuals with mild moderate conditions.
- EDSP 6961 Practicum in Mainstreaming Students with Mild Moderate Handicapping Conditions** 3 cr.  
The Practicum in Mainstreaming Students with Mild Moderate Handicapping Conditions will provide students with field work, observation, seminars, lectures, and applied research projects in education students. Students should have completed all courses required for certification in mild moderate special education. Consent of the department is required.
- EDSP 6962 Student Teaching in Special Education** 9 cr.  
Student Teaching in Special Education is open to those graduate students who are working toward certification in special education and who do not currently hold a teaching position. Field work, observations, seminars, lectures, and applied research projects in programs that provide services for individuals with handicapping conditions. Consent of the department is required. Students should have completed all courses required for certification in special education area of concentration.
- EDSP 6963 Internship in Special Education** 6 cr.  
The internship is open only to those students who presently hold a teaching position in a special education classroom and are under teaching contract for an academic school year. Professional teaching responsibilities, observations, seminars, lectures, and applied research projects are required. Students should have completed all courses required for certification in special education area of concentration. The approval of the Department of Special Education and Habilitative Services is required. (6 credits per semester for a total of 12 for the academic year)
- EDSP 6964 Computers and Assistive Technology in Special Education** 3 cr.  
Critical issues related to using computers and assistive technology to accommodate educational, social, and vocational needs of people with exceptionalities.
- EDSP 6970 Practicum in Psychoeducational Diagnosis** 3 cr.  
Prerequisite: consent of the department. Conducted under the direct supervision of certified educational consultants or certified assessment teachers in on-site settings. Required activities include observation, preparation, testing, scoring and interpretation, staffing, report writing, and participation in Individual Educational Plan conferences.
- EDSP 6980 Practicum in Visual Impairment** 3 cr.  
Prerequisites: EDSP 4810, 4820, 4830, 6840, and 6850 or consent of department. The course consists of supervised field work, observations, seminars, lectures, and/or empirical research in the area of visual impairment.
- EDSP 6981 Seminar in Special Education and Habilitative Services** 3 cr.  
Prerequisite: admission by permission of the Department of Special Education and Habilitative Services. Discussion of critical issues, critique of literature, development of theories, models with respect to handicapping conditions.
- EDSP 6982 Independent Study in Special Education and Habilitative Services** 1-3 cr.  
Prerequisite: consent of the department and major professor. Investigations of pertinent problems under the direction of a graduate faculty member. This course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.
- EDSP 6985 Internship in Special Education and Habilitative Services** 3 cr.  
Prerequisite: consent of the department. Assignment to a variety of educational clinical and service settings that are concerned with the diagnosis remediation and/or treatment of individuals with exceptional needs.
- EDSP 6990 Selected Topics in Special Education and Habilitative Services** 1-3 cr.  
Prerequisite: consent of the department. Topic will vary from semester to semester. Section number will correspond with the credit hours to be earned. Course may be repeated for a maximum of six semester hours within particular degree program.
- EDSP 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- EDSP 7010 Introductory Doctoral Seminar: Leadership Roles in Special Education and Habilitative Services** 3 cr.  
Prerequisite: doctoral student standing in the Department of Special Education and Habilitative Services or consent of department. An initial study of the roles and issues related to personnel preparation research and systems intervention in the field of special education and habilitative services.
- EDSP 7015 Doctoral Seminar in Systems Intervention** 3 cr.  
Prerequisite: EDSP 7010 and doctoral student standing in the Department of Special Education and Habilitative Services or consent of department. An examination of the leadership roles and requisite skills for a systems change agent within the field of special education and habilitative services.
- EDSP 7020 Doctoral Seminar in Personnel Preparation** 3 cr.  
Prerequisite: doctoral student standing in the Department of Special Education and Habilitative Services or consent of department. An examination of the role of the university faculty member involved in the preparation of special education personnel.
- EDSP 7025 Doctoral Seminar in Special Education Research** 3 cr.  
Prerequisite: doctoral student standing in the Department of Special Education and Habilitative Services or consent of department. An examination of the leadership roles for a researcher within special education and habilitative services.
- EDSP 7030 Advanced Doctoral Seminar: Leadership Roles in Special Education and Habilitative Services** 3 cr.  
Prerequisites: EDSP 7010, 7015, 7020, and 7025 and doctoral student standing in the Department of Special Education and Habilitative Service or consent of the department. Advanced study of the roles and issues related to personnel preparation, research, and systems intervention in the field of special education and habilitative services.
- EDSP 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- EDSP 7050 Dissertation Research** 1-9 cr.  
Offered each semester. Prerequisite: approval by the candidate's graduate committee. To be repeated for credit until the dissertation is accepted. Section number will correspond with credit to be earned.

- EDSP 4000G Introduction to the Study of People with Exceptionalities** 3 cr.  
A survey of all areas of exceptionality. Mental, physical, psychological, and social characteristics in an educational frame of reference.
- EDSP 4060G Behavior Modification in Applied Settings** 3 cr.  
The study of and use of behavior modification techniques in applied settings. In conjunction with coursework students must complete a behavior change project in an applied setting.
- EDSP 4430G Resource Rooms and Mainstreaming for the Hearing Impaired** 3 cr.  
One-time waiver
- EDSP 4510G Introduction to the Gifted and Talented** 3 cr.  
Characteristics, identification, needs, teacher qualifications, and organizational patterns for the gifted and talented.
- EDSP 4630G Humanistic Approaches to Managing Students with Behavioral Problems** 3 cr.  
Group and individual interventions and classroom management techniques for students with behavioral problems. Emphasis on humanistic conceptual models of student variance.
- EDSP 4775G Tests and Measurements for Exceptional Individuals** 3 cr.  
Prerequisite: Minimum grade of C in EDCI 3140 or consent of department. Definition and terminology in tests and measurements as employed with exceptional individuals. Description, analysis, and interpretation of various formal and informal evaluation instruments and practices.
- EDSP 4776G Practicum in Tests and Measurements for Individuals with Exceptionalities** 3 cr.  
Prerequisites: EDSP 3620, 4775, or consent of the department. Conducted under the supervision of university personnel. Required activities include exposure to and experience with informal testing, use of formal evaluation results to generate Individual Education Plans (IEP's), and participation in IEP conferences.
- EDSP 4800G Introduction to Individuals who have Visual Impairments** 3 cr.  
Prerequisite: EDSP 4000 or consent of department. A survey of the development of the visual system and the needs of individuals with a visual impairment. Designed to assist teachers and other service providers in the knowledge of 1) intervention strategies to be used with students who are visually impaired and 2) various service delivery systems for individuals with a visual impairment.
- EDSP 4810G Structure and Foundation of the Eye** 3 cr.  
Designed to provide an orientation to the parts of the eye and their functions; abnormalities and conditions that result in varying degrees of visual loss; and general considerations which these losses require in educational programming.
- EDSP 4820G Introduction to Braille** 3 cr.  
Mastery of the English Braille Code Grade II (Literacy Braille Format); emphasis will be placed on transcribing through the visual modality.
- EDSP 4830G Orientation and Mobility Training for Individuals who are Visually Impaired** 3 cr.  
Concepts and techniques involved in orientation, mobility, and daily living skills for individuals with a visual impairment.

## Education

- EDUC 278G Current Trends in Social Studies Education** 3 cr.  
Current Trends in Social Studies Education

## Civil Engineering

- ENCE 2310 Elementary Surveying Measurements** 3 cr.  
Prerequisites: MATH 1126 and credit or registration in ENCE 2301. Practical surveying measurement techniques are presented with suitable office computation methods for boundary, construction, and topographic surveys. State coordinate systems are introduced with proper use of geodetic datums (NAD 1927 to NAD 1983). Two hours of lecture and three hours of laboratory.
- ENCE 2311 Mechanics of Materials Laboratory** 1 cr.  
Offered each semester. Prerequisite: credit or registration in ENCE 2351. Selected experiments in mechanics of materials: mechanical extensometers, electric strain gauges, photoelasticity, stress concentration, surface hardness. Three hours of laboratory.
- ENCE 2312 Advanced Surveying** 3 cr.  
Prerequisite: ENCE 2310 or consent of department. Elementary vertical and horizontal control surveying with least-squares adjustment and analysis. Practical geodetic transformations are used as well as instrument adjustments and calibration. Two hours of lecture and three hours of laboratory.
- ENCE 2350 Statics** 3 cr.  
Offered each semester. Prerequisites: MATH 2108 or 2111 and PHYS 1061; credit or registration in ENCE 2301 or CSCI 1201. Vectors; two-dimensional and three-dimensional force systems; equilibrium; friction; centroids; mass moments of inertia; second moments of areas.
- ENCE 2351 Mechanics of Materials** 3 cr.  
Offered each semester. Prerequisite: ENCE 2350. Simple stress and strain; shear, moments, stresses and deflections in beams; combined stresses; thermal stresses; statically indeterminate members; columns.
- ENCE 2355 Engineering Mechanics** 3 cr.  
Prerequisites: CSCI 1201, MATH 2108 or 2111, and PHYS 1061. Vectors; equilibrium of force systems; friction; centroids; moment of inertia; kinematics and kinetics; work and energy; impulse and momentum.
- ENCE 3093 Special Problems in Civil Engineering** 1 cr.  
Prerequisite: senior standing in engineering. Seminar, independent study, and research participation in civil engineering.
- ENCE 3094 Special Problems in Civil Engineering** 1 cr.  
Prerequisite: senior standing in engineering. Seminar, independent study, and research participation in civil engineering.
- ENCE 3095 Special Problems in Civil Engineering** 1 cr.  
Prerequisite: senior standing in engineering. Seminar, independent study, and research participation in civil engineering.
- ENCE 3321 Hydraulic Engineering Laboratory** 1 cr.  
Prerequisite: credit or registration in ENCE 3320. Experimental analysis of hydraulic engineering systems; coastal engineering, river mechanics, hydraulic structures, and hydrological processes.
- ENCE 3340 Geotechnical Engineering** 3 cr.  
Fall semester. Prerequisites: GEOL 1001, ENCE 2351 and 3318 or ENME 3720; credit or registration in ENCE 3300 and ENCE 3341. Properties and behavior of soils as engineering materials; the origin and classification of soils; permeability of soils; compressibility and strength characteristics of soils; elementary treatment of consolidation, earth pressure, and bearing capacity. Determination of engineering properties of soils in the laboratory. Two hours of lecture and three hours of laboratory.
- ENCE 3341 Soil Mechanics Laboratory** 1 cr.  
Prerequisite: credit or registration in ENCE 3340 or consent of department. Properties and behavior of soils as engineering materials. Data collection, computations, and presentation of results.

- ENCE 3356 Structural Analysis** 4 cr.  
Prerequisites: ENCE 2351 and 2301. Analysis of structures using manual and computer methods. Analysis of determinate and indeterminate structures subjected to static loads by the following methods: moment-area principles, virtual work, conjugate beam, moment distribution, displacement method.
- ENCE 3900 Senior Honors Thesis** 1-6 cr.  
Prerequisites: admission to the Honors Program, and approval by the director of the Honors Program and the chair of the department. Senior level research and/or design project in civil engineering. Thesis and oral examination required. May be repeated for credit with total hours not to exceed six.
- ENCE 4096 Special Topics in Civil Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENCE 4096 and 4097.
- ENCE 4097 Special Topics in Civil Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENCE 4096 and 4097.
- ENCE 4310 Photogrammetry and Control Surveying** 3 cr.  
Prerequisite: ENCE 2310 or consent of department. Photographic measurements and refinement, vertical and tilted photographs, planning for aerial photography, conformal coordinate systems and grids, horizontal and vertical control for photogrammetric mapping, ellipsoidal datum shifts, stereoscopic plotting instruments, orthophotos, panoramic and orbital photography, terrestrial and close-range photogrammetric control extension, and analytical rectification by single ray.
- ENCE 4312 Topographic Engineering Design** 3 cr.  
Prerequisite: ENCE 2310 or consent of department. Design of projects requiring advanced topics in surveying and mapping disciplines. Coordinate systems, horizontal and vertical control, geodetic astronomy, inertial Surveying, geodetic satellites, and photogrammetry.
- ENCE 4320 Water Resources Engineering Systems** 3 cr.  
Prerequisite: ENGL 2152, ENCE 2301 and 4318. Hydrological processes and computations; groundwater flow and hydraulics of wells; probability concepts in hydraulic design; reservoirs; hydro-machinery; drainage and urban collection systems; flood mitigation; navigation; water law; economics of water resources; water resources development and systems approach. Two hours of lecture and three hours of laboratory.
- ENCE 4321 Hydrology** 3 cr.  
Prerequisite: ENCE 3318 or ENME 3720 and credit or registration in ENCE 3300. The hydrologic cycle, runoff relations, unit hydrographs, flood routing, probability in hydrology, hydrologic simulation, and stochastic methods in hydrology.
- ENCE 4322 Design of Water Supply and Sewer Systems** 3 cr.  
Prerequisite: ENCE 3320. Design of water supply systems including surface water intakes, groundwater wells, pumping, pipelines, storage reservoirs, and water distribution systems. Design of urban drainage systems including: sanitary sewer systems, storm water collection systems, sewage pumping stations, and appurtenances and special structures.
- ENCE 4323 Design of Water and Wastewater Treatment Systems** 3 cr.  
Prerequisite: ENCE 3323. Design and analysis of unit operations and processes for water and wastewater treatment processes. Topics include physical, chemical, and biological unit processes. Course will focus on water and wastewater treatment plant design including comparisons of alternate treatment processes.
- ENCE 4325 Waste Management** 3 cr.  
Prerequisite: Senior standing in science or engineering or consent of the department. Solid waste management principles and practices including engineering design of integrated solid waste systems. Methods of predicting waste generation, composition, and characterization are covered. Collection, handling, treatment, and disposal of solid waste is also addressed. Recycling and reuse, engineering cost estimation, and regulatory/legal aspects of waste management are included.
- ENCE 4328 Air Pollution Control** 3 cr.  
Prerequisite: Senior standing in Science or Engineering or consent of department. Air pollutants and their sources, air pollution meteorology, effect of air pollution on man, vegetation and materials, air quality standards, atmospheric sampling and analysis, dispersion of pollutants, technology of air pollution control, and combustion evaluation.
- ENCE 4329 Modeling and Design in Environmental Hydraulics** 3 cr.  
Prerequisite: Senior standing and approval of department. The hydrologic cycle and water quality; systems engineering and environmental pollution control; mathematical and statistical concepts; optimization techniques; and applications in surface subsurface water waste treatment and environmental management.
- ENCE 4330 Groundwater Engineering** 3 cr.  
Prerequisite: senior classification in Civil Engineering or Geology or consent of department. Fundamentals of fluid mechanics and geotechnical engineering applied to flow in porous media. Elements of the hydrologic cycle. Occurrence of groundwater. Hydraulics of aquifers and groundwater development.
- ENCE 4340 Foundation Engineering** 3 cr.  
Spring semester. Prerequisite: ENCE 3340 or consent of department. Application of soil mechanics principles to the design of footings, foundations, embankments, and retaining walls. Subsurfaces investigations, dewatering, deep excavations, piles, caissons and cofferdams. Case histories will be cited.
- ENCE 4363 Structural Design with Wood, Masonry, Aluminum and Plastics** 3 cr.  
Prerequisites: ENCE 3356, 4358, and 4359. Introductions to structural design with wood, masonry, aluminum, and plastics; material behavior, loading, analysis, design codes.
- ENCE 4387 Traffic Engineering** 3 cr.  
Prerequisites: ECNE 3386 and MATH 2314. Definition and measurement of traffic stream variables, statistical distributions, traffic stream models, and capacity of roadway and intersections.
- ENCE 4723 Ocean and Coastal Engineering** 3 cr.  
(ENCE 4723, ENME 4723, and NAME 4723 are cross-listed). Prerequisite: ENME 3720 or ENCE 3310 or consent of the department. Elements of wind and wave generation and forecasting, tidal phenomena, hurricanes, storm surge, tsunamis, interaction of waves and wind with coastal and offshore structures, coastal and estuary processes. Design aspects of various topics are discussed and analyzed: e.g., offshore structures, spar buoys, underwater pipelines, oil production risers, coastal protection, mooring cables, vortex shedding, gas flares, beach formation, harbor resonance, structure resonance, etc. A design project is required.
- ENCE 6095 Advanced Civil Engineering Problems** 1-6 cr.  
Individual projects in selected fields of civil engineering. Independent work under the direction of a faculty member on a subject of mutual interest. Students must find faculty sponsor. A written report will usually be required. Course may be repeated for credit

- but no more than a total of six credit hours may be applied towards a degree. Section number will correspond with credit to be earned.
- ENCE 6096 Advanced Special Topics in Civil Engineering** 3 cr.  
Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of civil engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENCE 4096, 4097, 6096, 6097, and 6098.
- ENCE 6097 Advanced Special Topics in Civil Engineering** 3 cr.  
Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of civil engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENCE 4096, 4097, 6096, 6097, and 6098.
- ENCE 6098 Advanced Special Topics in Civil Engineering** 3 cr.  
Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of civil engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENCE 4096, 4097, 6096, 6097, and 6098.
- ENCE 6312 Coordinate Systems in Cartography and Geodesy** 3 cr.  
Prerequisite: consent of department. Geometric Geodesy and ellipsoidal transformations. Conformal mapping of the ellipsoid, Gauss-Kruger Transverse Mercator, Lambert Conformal Conic, Normal Mercator, Oblique Stereographic, Rectified Skew Orthomorphic, Laborde, and conformal variations. Authalic, Aphylactic, and Azimuthal Projections with computation of the geodesic. Grids and Datums of the world are covered with emphasis on Lease-Block computation legal requirements in foreign nations for geophysical and mineral exploration. Advanced theory and design computations for senior cartographers, surveyors, and civil engineers.
- ENCE 6318 Water Quality Simulations** 3 cr.  
Prerequisite: ENCE 3320. Water quality modeling from a perspective of practicality and reliability; emphasis on model calibration and verification procedures and methodologies for quantifying uncertainties associated with model predictions.
- ENCE 6319 Hydraulics of Free Surface Flow** 3 cr.  
Prerequisite: ENCE 3320. Natural and artificial open channels, steady and unsteady flow, water surface profiles, channel transitions, hydraulic jump, secondary flow, and application of energy and momentum principles.
- ENCE 6320 Design of Hydraulic Structures and Systems** 3 cr.  
Prerequisite: ENCE 3320 or equivalent. Design of hydraulic structures including consideration of types and functions of dams; hydraulic design of spillways, crest gates, outlet works, and stilling basins; design considerations for hydraulic machinery, hydroelectric power, canals, and navigation locks.
- ENCE 6321 Advanced Hydrology** 3 cr.  
Prerequisites: ENCE 4321 or equivalent CSCI 1201 or knowledge of computer programming. Application of hydrologic model simulation and stochastic methods in hydrology. Computer application for modeling of large scale problems. Emphasis upon problems of local interest such as flood control and urban drainage with examination of design alternatives.
- ENCE 6322 Hydraulics and Environmental Modeling** 3 cr.  
Prerequisite: ENME 3020 or equivalent. Hydraulic and environmental variables; dimensional analysis; design of experiments and physical models; formulation of numerical models for flow problems; and application of numerical and mathematical methods to surface and subsurface flow and environmental problems.
- ENCE 6323 Sediment Transport** 3 cr.  
Prerequisite: ENCE 3320 or consent of department. Particle size analysis, fluid-particle systems, incipient motion. Suspended and total loads, bedforms, sediment measurements. Physical and numerical modeling of sediment transport. Transport of liquid-solid mixtures in pipes.
- ENCE 6324 Groundwater Hydraulics** 3 cr.  
Prerequisite: ECNE 3340 and 4330 or equivalent. Groundwater systems and groundwater flow relationships; well hydraulics. Environmental aspects of groundwater. Hydraulic modeling of groundwater systems. Management models in groundwater.
- ENCE 6325 Solid Waste Management** 3 cr.  
Prerequisite: consent of department. Solid waste management practices, including generation, composition, collection, handling, and disposal. Recycling and reuse together with costs, marketing, and legal regulatory aspects are included.
- ENCE 6328 Advanced Hazardous Waste Materials Management** 3 cr.  
Prerequisite: ENCE 6327. Management methods for treatment storage and disposal of hazardous materials and wastes with emphasis on current industry practices. Six field trips to commercial hazardous waste treatment and disposal facilities possibly including superfund sites.
- ENCE 6330 Treatment Plant Process Microbiology** 4 cr.  
Prerequisites: ENCE 4323; Consent of the Department. An advanced lecture and laboratory course for the biological process design engineer which will focus upon cellular microbiology and biochemistry as it directly relates to biological treatment and stabilization processes. It will address aerobic treatment anaerobic treatment and stabilization of toxic and hazardous wastes.
- ENCE 6331 Treatment Plant Process Chemistry** 4 cr.  
Prerequisites: CHEM 1011 or 1018; ECCE 4323; consent of the department. An advanced lecture and laboratory course for the process of design engineer which focuses upon aquatic chemistry as it directly relates to engineered water and wastewater treatment and stabilization processes. It includes chemical equilibria, thermodynamics, acid-base equilibria, solubility equilibria, oxidation-reduction equilibria, process kinetics, surface and colloidal chemistry, water treatment, stabilization, softening and neutralization, ion exchange, carbon adsorption, and applications of redox chemistry.
- ENCE 6332 Water Treatment Processes and Design** 3 cr.  
Prerequisites: ENCE 4322, 4323, and 6331. A comprehensive presentation of water treatment processes with their application to treatment plant design. Laboratory experiments on the principal water treatment processes. Three hours of lecture and two hours of laboratory.
- ENCE 6333 Waste Water Treatment Processes and Design** 3 cr.  
Prerequisites: ENCE 4322, 4323, and 6330. A comprehensive presentation of wastewater treatment processes with their application to treatment plant design. Laboratory experiments on biological wastewater treatment processes. Three hours of lecture and two hours of laboratory.
- ENCE 6335 Pollution Prevention** 3 cr.  
Prerequisite: ECON 2000. Identification of pollution prevention opportunities and implementation of proven methodology as defined by the United States Environmental Protection Agency. Emphasis on economic evaluation of pollution prevention practices and investments for various manufacturing and post-consumer processes.
- ENCE 6340 Mechanical Behavior of Soils** 3 cr.  
Prerequisite: ENCE 3340 or equivalent. Re-examination of basic principles of soil mechanics; detailed study of physicochemical nature

- of soils; stress states and stress-strain-time behavior; advanced theories and detailed study of shear strength of cohesionless and cohesive soils; in-depth evaluation of the strength compressibility and permeability of natural soils.
- ENCE 6341 Earth Structures** 3 cr.  
Prerequisite: ENCE 3340 or equivalent. Design of projects involving earth dams, embankments, and natural slopes; site investigation, soil properties and compaction, analysis of seepage and slope stability; seepage control and landslide prevention; performance observations and practical consideration in design and construction; and case studies of types of failures.
- ENCE 6343 Advanced Soil Mechanics Laboratory** 1 cr.  
Prerequisite: ENCE 3340 or equivalent. Laboratory measurement of soil properties from introductory to advanced techniques. Emphasis on strength, compressibility, and permeability tests.
- ENCE 6344 Geotechnical Engineering for Waste Management** 3 cr.  
Prerequisites: ENCE 3320, 3340 or equivalent. An overview of the theoretical and practical aspects of the site selection, design, construction, and performance of waste disposal facilities, state and federal regulations governing solid and hazardous waste.
- ENCE 6345 Numerical Methods in Geotechnical Engineering I** 3 cr.  
Prerequisite: ENCE 4340, ENME 3020 or consent of department. Re-examination of basic concepts from solid mechanics; constitutive models, strain-displacement relations; and use of finite difference methods, finite element methods and other numerical methods, with application to beams, slabs, and pavements.
- ENCE 6346 Numerical Methods in Geotechnical Engineering II** 3 cr.  
Prerequisite: ENCE 6345. Consolidation, flow through porous media, advanced methods applied to design and analysis of soil-structure systems; shallow and pile foundations, earth retaining structures, and limit design.
- ENCE 6348 Numerical Methods in Civil Engineering** 3 cr.  
Prerequisites: Computer programming skills ENME 3020 or equivalent; or consent of instructor. Numerical techniques for the formulation and solution of both discrete and continuous systems of equilibrium propagation eigenvalue and optimization problems.
- ENCE 6350 Matrix Methods in Structural Engineering** 3 cr.  
Prerequisites: ENCE 3356 or equivalent, CSCI 1201 or knowledge of computer programming. Review of basic matrix operations; classical methods of structural analysis in matrix formulation; work and energy principles; analysis of structures by the flexibility and stiffness methods; development and application of computer programs for matrix methods of analysis; introduction to finite element method.
- ENCE 6351 Advanced Design of Structural Systems** 3 cr.  
Prerequisite: consent of department. Advanced design course offered on a demand basis with registration only by demonstration of adequate preparation. Design of pressure vessels, tanks, folded plates, and shell roofs; design of advanced bridge systems including orthotropic decks, box-girder bridges, and post-tensioned sectional bridges; selected advanced design topics.
- ENCE 6352 Reliability Analysis in Civil Engineering** 3 cr.  
Prerequisites: ENCE 3356, 3320, and 3340, and MATH 2314. Analysis of failure probability for civil engineering systems. Construction of load and capacity probability distributions from data. Introduction to decision theory. Applications to structures, soils, planning, hydraulics, and other civil subareas.
- ENCE 6353 Advanced Mechanics of Materials** 3 cr.  
Prerequisite: ENCE 2351. Advanced topics in mechanics of materials, including torsion of non-circular prismatic bars, shear center, unsymmetrical bending, curved beams, flat plates, elastic strain energy, and theories of failure and application to machine and structural design. One-third of course is devoted to analysis and two-thirds to synthesis and design.
- ENCE 6355 Theory of Plates and Shells** 3 cr.  
(ENCE 6355 and ENME 6355 are cross-listed) Prerequisites: ENCE 6353 and MATH 2221. Laterally loaded plates with various boundary conditions; elastic stability of plates; differential geometry of surfaces; equilibrium and strain equations; membrane theory of shells; shells of revolution with emphasis on cylindrical and spherical shells.
- ENCE 6358 Advanced Steel Design** 3 cr.  
Prerequisites: ENME 3356 and 4358. Design of plate girders, composite beams, and connections; plastic hinges and introduction to plastic analysis of steel structures; and computer-aided design of steel space frame and introduction to steel bridge design.
- ENCE 6359 Advanced Concrete Design** 3 cr.  
Prerequisite: ENCE 3356 and 4359. Structural systems for buildings; lateral load analysis and design of shear walls; design of two-way slabs; design of biaxially loaded columns; torsion in concrete beams; introduction of prestressed concrete design; and general aspects of design.
- ENCE 6360 Plastic Design of Steel Structures** 3 cr.  
Prerequisite: ENCE 4358. Collapse mechanism and plastic analysis; stability and deformation considerations; plastic design and methods of optimization; shakedown analysis; introduction to load and resistance factor design.
- ENCE 6361 Prestressed Concrete Design** 3 cr.  
Prerequisite: ENCE 4359. Principles and methods of prestressing; design for flexure, shear, temperature, and fatigue; roof and floor framing systems, bridge construction, columns, and piles; connections and erection methods for precast members; pretensioning and posttensioning systems and procedures; and special design topics.
- ENCE 6371 Structural Stability** 3 cr.  
Prerequisites: ENCE 4358 and MATH 2221. Review of elastic column buckling; basic consideration of bifurcation; stability of frames; analysis of lateral torsional stability of beams and columns; and inelastic buckling of columns.
- ENCE 6375 Design of Fixed Offshore Platforms** 3 cr.  
(ENCE 6375 and NAME 6175 are cross-listed) Prerequisites: ENCE 3356 (or NAME 3120), ENCE 4358 (or NAME 3120), ENCE 4340, or permission of Department. Design of fixed offshore platform structures and their foundations; loadings, materials, design codes; design examples.
- ENCE 6384 Traffic System Analysis** 3 cr.  
Prerequisite: ENCE 4387. Basic concepts in traffic flow theory; generalized demand, price, and capacity relationships applied to traffic flow prediction; flow in transportation networks; and the evaluation of alternative highways and traffic engineering designs.
- ENCE 6385 Design of Highways** 3 cr.  
Prerequisite: ENCE 3386. Location of routes, vertical and horizontal alignment, mass curve computations, design of drainage structures, intersection design, pavement design, and computer applications. Each student will complete a design project.
- ENCE 6386 Mass Transportation** 3 cr.  
Prerequisite: ENCE 6384. A study of the different public transportation systems and technologies, comparison of different modes,

- mass transit operations, models for basic operational parameters, optimal model choice.
- ENCE 4096G Special Topics in Civil Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENCE 4096 and 4097.
- ENCE 4097G Special Topics in Civil Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENCE 4096 and 4097.
- ENCE 4310G Photogrammetry and Control Surveying** 3 cr.  
Prerequisite: ENCE 2310 or consent of department. Photographic measurements and refinement, vertical and tilted photographs, planning for aerial photography, conformal coordinate systems and grids, horizontal and vertical control for photogrammetric mapping, ellipsoidal datum shifts, stereoscopic plotting instruments, orthophotos, panoramic and orbital photography, terrestrial and close-range photogrammetric control extension, and analytical rectification by single ray.
- ENCE 4312G Topographic Engineering Design** 3 cr.  
Prerequisite: ENCE 2310 or consent of department. Design of projects requiring advanced topics in surveying and mapping disciplines. Coordinate systems, horizontal and vertical control, geodetic astronomy, inertial Surveying, geodetic satellites, and photogrammetry.
- ENCE 4320G Water Resources Engineering Systems** 3 cr.  
Prerequisite: ENGL 2152, ENCE 2301 and 4318. Hydrological processes and computations; groundwater flow and hydraulics of wells; probability concepts in hydraulic design; reservoirs; hydro-machinery; drainage and urban collection systems; flood mitigation; navigation; water law; economics of water resources; water resources development and systems approach. Two hours of lecture and three hours of laboratory.
- ENCE 4321G Hydrology** 3 cr.  
Prerequisite: ENCE 3318 or ENME 3720 and credit or registration in ENCE 3300. The hydrologic cycle, runoff relations, unit hydrographs, flood routing, probability in hydrology, hydrologic simulation, and stochastic methods in hydrology.
- ENCE 4322G Design of Water Supply and Sewer Systems** 3 cr.  
Prerequisite: ENCE 3320. Design of water supply systems including surface water intakes, groundwater wells, pumping, pipelines, storage reservoirs, and water distribution systems. Design of urban drainage systems including: sanitary sewer systems, storm water collection systems, sewage pumping stations, and appurtenances and special structures.
- ENCE 4323G Design of Water and Wastewater Treatment Systems** 3 cr.  
Prerequisite: ENCE 3323. Design and analysis of unit operations and processes for water and wastewater treatment processes. Topics include physical, chemical, and biological unit processes. Course will focus on water and wastewater treatment plant design including comparisons of alternate treatment processes.
- ENCE 4325G Waste Management** 3 cr.  
Prerequisite: Senior standing in science or engineering or consent of the department. Solid waste management principles and practices including engineering design of integrated solid waste systems. Methods of predicting waste generation, composition, and characterization are covered. Collection, handling, treatment, and disposal of solid waste is also addressed. Recycling and reuse, engineering cost estimation, and regulatory/legal aspects of waste management are included.
- ENCE 4328G Air Pollution Control** 3 cr.  
Prerequisite: Senior standing in Science or Engineering or consent of department. Air pollutants and their sources, air pollution meteorology, effect of air pollution on man, vegetation and materials, air quality standards, atmospheric sampling and analysis, dispersion of pollutants, technology of air pollution control, and combustion evaluation.
- ENCE 4329G Modeling and Design in Environmental Hydraulics** 3 cr.  
Prerequisite: Senior standing and approval of department. The hydrologic cycle and water quality; systems engineering and environmental pollution control; mathematical and statistical concepts; optimization techniques; and applications in surface subsurface water waste treatment and environmental management.
- ENCE 4330G Groundwater Engineering** 3 cr.  
Prerequisite: senior classification in Civil Engineering or Geology or consent of department. Fundamentals of fluid mechanics and geotechnical engineering applied to flow in porous media. Elements of the hydrologic cycle. Occurrence of groundwater. Hydraulics of aquifers and groundwater development.
- ENCE 4340G Foundation Engineering** 3 cr.  
Spring semester. Prerequisite: ENCE 3340 or consent of department. Application of soil mechanics principles to the design of footings, foundations, embankments, and retaining walls. Subsurface investigations, dewatering, deep excavations, piles, caissons and cofferdams. Case histories will be cited.
- ENCE 4363G Structural Design with Wood, Masonry Aluminum and Plastics** 3 cr.  
Prerequisites: ENCE 3356, 4358, and 4359. Introductions to structural design with wood, masonry, aluminum, and plastics; material behavior, loading, analysis, design codes.
- ENCE 4387G Traffic Engineering** 3 cr.  
Prerequisites: ENCE 3386 and MATH 2314. Definition and measurement of traffic stream variables, statistical distributions, traffic stream models, and capacity of roadway and intersections.
- ENCE 4723G Ocean and Coastal Engineering** 3 cr.  
(ENCE 4723, ENME 4723, and NAME 4723 are cross-listed). Prerequisite: ENME 3720 or ENCE 3310 or consent of the department. Elements of wind and wave generation and forecasting, tidal phenomena, hurricanes, storm surge, tsunamis, interaction of waves and wind with coastal and offshore structures, coastal and estuary processes. Design aspects of various topics are discussed and analyzed: e.g., offshore structures, spar buoys, underwater pipelines, oil production risers, coastal protection, mooring cables, vortex shedding, gas flares, beach formation, harbor resonance, structure resonance, etc. A design project is required.
- Electrical Engineering**
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- ESEE 2500 Basic Electrical Circuits** 3 cr.  
Offered each semester and summer session. Prerequisites: PHYS 1062 or consent of department. Introduction to basic electrical circuit analysis. This course carries no degree credit in the electrical engineering curriculum.
- ESEE 2510 Circuits Laboratory** 1 cr.  
Prerequisite: Concurrent registration in ESEE 2551 An introduction to electrical measurements, instruments, and circuit phenomena complementing the lecture course ESEE 2551. Three hours of laboratory. Note that this laboratory must be taken concurrently with the course ESEE 2551.

- ENEE 2550 Circuits I** 3 cr.  
Prerequisites: MATH 2111 (or MATH 2108). Introduction to linear, time-invariant, and lumped circuits. Kirchhoff's laws, DC analysis of resistive circuits, and transient analysis of RLC circuits.
- ENEE 2551 Circuits II** 3 cr.  
Prerequisite: ENEE 2550, PHYS 1062 and concurrent registration in ENEE 2510. AC steady-state analysis of RLC circuits and frequency response; three-phase circuits and transformers; Laplace transform methods.
- ENEE 2582 Digital Logic Design** 3 cr.  
Prerequisite: Mathematics 2111 (or MATH 2108) and concurrent registration in ENEE 2586. The characterization and design of digital, logic, and switching networks with emphasis on integrated circuits. Concurrent registration in Electrical Engineering 2586 is required.
- ENEE 2586 Logic Circuits Laboratory** 1 cr.  
Prerequisite: Concurrent registration in ENEE 2582. Selected experiments examining logic devices and circuits, and including a final design project, to accompany and complement the lecture course ENEE 2582. Three hours of laboratory.
- ENEE 3092 Senior Electrical Engineering Design Project** 3 cr.  
Prerequisite: Final semester before graduation and approval of the Department Chairman. Individual or team study and evolution of a project, involving engineering design, synthesis, or systems in electrical engineering. Comprehensive written and oral reports are required.
- ENEE 3093 Special Problems in Electrical Engineering** 1 cr.  
Prerequisite: Senior standing in engineering. Seminar, independent study, and research participation in electrical engineering.
- ENEE 3094 Special Problems in Electrical Engineering** 1 cr.  
Prerequisite: Senior standing in engineering. Seminar, independent study, and research participation in electrical engineering.
- ENEE 3095 Special Problems in Electrical Engineering** 1 cr.  
Prerequisite: Senior standing in engineering. Seminar, independent study, and research participation in electrical engineering.
- ENEE 3501 Basic Electrical Machinery** 3 cr.  
Prerequisite: ENEE 2500. Review of electric circuit theory and its application to electro-mechanical energy conversion, including the operation of dc, induction, and synchronous machines and transformers. This course carries no degree credit in the electrical engineering curriculum.
- ENEE 3511 Energy Conversion Laboratory** 1 cr.  
Prerequisite: Concurrent registration in ENEE 3540. Selected experiments to accompany the lecture course ENEE 3540. This laboratory must be taken at the same time as ENEE 3540. Three hours of laboratory.
- ENEE 3516 Engineering Electronics Laboratory I** 1 cr.  
Prerequisite: Concurrent registration in ENEE 3540. Selected experiments and design projects in electronic systems to accompany the lecture course ENEE 3540. Three hours of laboratory.
- ENEE 3517 Engineering Electronics Laboratory II** 1 cr.  
Prerequisite: Concurrent registration in ENEE 3543. Selected experiments to accompany the lecture course ENEE 3543. This laboratory must be taken at the same time as ENEE 3543. Three hours of laboratory.
- ENEE 3518 Electrical Engineering Laboratory** 1 cr.  
Offered each semester and summer session. Prerequisite: credit or registration in ENEE 3501. A laboratory in basic electronics, instrumentation, and electric power devices for students not majoring in electrical engineering. Three hours of laboratory.
- ENEE 3521 Electric Machinery** 3 cr.  
Prerequisite: ENEE 2551. Introduction to the theory of electromechanical energy conversion with special application to the theory and operation of electrical machines and machine control systems.
- ENEE 3522 Electrical Power Systems** 3 cr.  
Prerequisite: ENEE 2551. Introduction to industrial and utilities electric power systems, poly-phase systems, fault conditions, per-unit values, and the method of symmetrical components.
- ENEE 3530 Continuous and Discrete Signal and System Analysis** 3 cr.  
Prerequisite: ENEE 2551 and MATH 2511 and 2221. Fundamental techniques for the analysis of electrical and electronic signals and systems are introduced and include: signal representation, Fourier series, Fourier transform, Laplace transform, discrete Fourier transform, and the Z-transform. Emphasis will be placed on the application of the above techniques to engineering problems.
- ENEE 3535 Communication System Design** 3 cr.  
Prerequisites: ENEE 3530 concurrent registration in ENEE 3574. Concurrent registration in ENEE 3574, the accompanying laboratory, is highly recommended. Design, characterization, and selection of communication methods and systems.
- ENEE 3540 Engineering Electronics** 3 cr.  
Prerequisite: ENEE 2551. The characteristics of modern solid-state non-linear and active devices, representative circuit models, and the analysis and design of typical circuits using these devices.
- ENEE 3543 Engineering Electronic Systems** 3 cr.  
Prerequisite: ENEE 3540 and concurrent registration in ENEE 3517. Use of solid-state devices as basic system building blocks. Multi-stage amplifiers, feedback amplifiers, stability and oscillators, analog systems, power circuits and systems. The accompanying laboratory, ENEE 3517, must be taken with this course.
- ENEE 3560 Engineering Electromagnetics I** 3 cr.  
Offered each semester. Prerequisites: MATH 2115, MATH 2221, and ENEE 2551. Electrostatics and magnetostatics and their applications to analysis and design in various fields of electrical engineering. Formulation of Maxwell's equation for electromagnetic fields in free space and in material media. The wave equation and plane-wave propagation.
- ENEE 3561 Engineering Electromagnetics II** 3 cr.  
Prerequisite: ENEE 3560. Maxwell's equations for time-varying electromagnetic fields and their applications; wave propagation through different media; design of transmission lines and waveguides; introduction to electromagnetic radiation; and antennas.
- ENEE 3572 Probabilistic Methods of Signal and System Analysis** 3 cr.  
Prerequisites: ENEE 3530. The fundamentals of probability theory are introduced. Application of probability theory to signal and system analysis is considered and includes correlation functions, spectral density, linear system response to random input signals, and system parameter optimization.
- ENEE 3574 Communication Systems Design Laboratory** 1 cr.  
Prerequisites: ENEE 3535. Selected experiments examining fundamental performance and design concepts of modulation systems, and including a design project. Three hours of laboratory. Concurrent registration of this laboratory with the accompanying course, ENEE 3535, is required.
- ENEE 3582 Digital Design Using Microcomputers** 3 cr.  
Prerequisite: ENEE 2582, ENEE 2586, and CSCI 2120. The design of microcomputer-based systems including both hardware and software considerations. Includes laboratory work and semester project.

- ENEE 3900 Senior Honors Thesis** 1-6 cr.  
Prerequisites: admission to the Honors Program and consent of the director of the Honors Program and the chair of the department. Senior-level research and/or design project in electrical engineering. Thesis and oral examination required. May be repeated for credit with total hours no to exceed six.
- ENEE 4096 Special Topics in Electrical Engineering** 3 cr.  
Offered each semester and summer. Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENEE 4096 and 4097.
- ENEE 4097 Special Topics in Electrical Engineering** 3 cr.  
Offered each semester and summer. Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENEE 4096 and 4097.
- ENEE 4522 Electric Power Distribution** 3 cr.  
Prerequisite: ENEE 3522. Analysis techniques of faulted electric power distribution systems in the steady and transient states.
- ENEE 4526 Protective Relaying of Power Systems** 3 cr.  
Prerequisite: ENEE 3522. Protection of power system components like transmission lines, transformers, radial feeders, generators, and motors from faults and lightning. Differential protection of transformers, generator windings, and transmission lines. Distance protection of transmission lines. Relay coordination for radial feeders. Carrier protection. Use of current and voltage transformers.
- ENEE 4533 Digital Control System Design** 3 cr.  
Spring semester. Prerequisite: ENEE 3533 or consent of department. Design and analysis of digital control systems using transform techniques and state-space methods.
- ENEE 4535 Introduction to Digital Signal Processing** 3 cr.  
Fall semester. Prerequisite: ENEE 3530 or consent of department. Fundamental concepts of digital processing are developed and include signal representation; Fourier series; z-transforms; discrete Fourier series; discrete random signals; data window functions; applications of DFT to convolution, auto and cross-correlation and power and energy spectrum distribution estimation; digital filter design; homomorphic signal processing.
- ENEE 4543 Power Electronics and Drives** 3 cr.  
Prerequisites: ENEE 3521 and 3540. Introduction to semiconductor devices, circuits with diodes and power switching devices, controlled rectifiers, dc choppers, dc and ac motor drives including armature-controlled dc motor drives, inverterfed induction and synchronous motor drives.
- ENEE 4554 Analog and Digital Filter Design** 3 cr.  
Prerequisite: ENEE 3530. The synthesis of analog and digital filters; elementary one port synthesis; Darlington filter synthesis; phase correction; synthesis of Real-part, magnitude, and phase; realization of recursive and nonrecursive digital filters; windowing; parallel, cascade, and direct forms of digital filters; digital hardware implementation.
- ENEE 4562 Engineering Optics** 3 cr.  
Prerequisite: Senior standing in engineering or science or consent of department. Optical fundamentals for engineering. Waves. Diffraction. Optical waveguides. Interferometry and Holography.
- ENEE 4570 Audio Engineering** 3 cr.  
Prerequisite: ENEE 3530 3540 or consent of department. Analog and Digital Recording and Reproduction Techniques and Systems are examined, and include microphone design, selection and application; Mixing and Recording Equipment Design and Techniques; Reproduction System Elements, including Disc Reproduction, Pre-Amplification, Power Amplification, Tuner, Tape Recording, Signal Processors and speakers.
- ENEE 4572 Advanced Communication System Design** 4 cr.  
Prerequisites: ENEE 3535 and 3572 or consent of department. Analysis of analog and digital modulation techniques in the presence of noise; receiver noise models, facsimile systems, signal vector theory, and introduction to information theory. Three hours of lecture and three hours of laboratory.
- ENEE 4582 Microcomputer Interfacing** 3 cr.  
Prerequisite: ENEE 3582. Microcomputer structures, memory and IO interfaces, bus interconnections, serial and parallel interfaces, and CRT-controller design. Includes laboratory work and a semester project.
- ENEE 6095 Advanced Electrical Engineering Problems** 1-6 cr.  
Offered each semester and summer session. Individual projects in selected fields of electrical engineering. Independent work under the direction of a faculty member on a subject of mutual interest. Student must find faculty sponsor. A written report will usually be required. Course may be repeated for credit but no more than a total of six credit hours may be applied toward a degree. Section number will correspond with credit to be earned.
- ENEE 6096 Advanced Special Topics in Electrical Engineering** 3 cr.  
Offered each semester and summer session. Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of electrical engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENEE 4096, 4097, 6096, 6097, and 6098.
- ENEE 6097 Advanced Special Topics in Electrical Engineering** 3 cr.  
Offered each semester and summer session. Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of electrical engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENEE 4096, 4097, 6096, 6097, and 6098.
- ENEE 6098 Advanced Special Topics in Electrical Engineering** 3 cr.  
Offered each semester and summer session. Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of electrical engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENEE 4096, 4097, 6096, 6097, and 6098.
- ENEE 6521 High Voltage Engineering** 3 cr.  
Prerequisites: ENEE 3521 and 3522 or consent of department. Design considerations of high voltage transmission lines, electrical characteristics, electrostatic and electromagnetic theory and effects, corona phenomena, radio noise from transmission lines, audible noise, insulation coordination, and switching surges. Discussions of recent results on biological effects.
- ENEE 6522 Computer Aided Analysis of Large Power Systems** 3 cr.  
Prerequisite: ENEE 4522. Digital computer modeling and analysis techniques of large interconnected power systems. On-line power system control.
- ENEE 6523 Electric Machines and Drives** 3 cr.  
Modeling of induction, synchronous, brushless permanent-magnet, and reluctance motor drives; modeling of machines in phase as well as in transformed variables; vector control of AC machines; current controllers; encoders; application characteristics.

- ENEE 6530 Linear Systems** 3 cr.  
Prerequisite: ENEE 3533 or consent of department. A study of the state equation method of system modeling. Topics include stability, controllability, observability, and realizability.
- ENEE 6531 Advanced Control Theory** 3 cr.  
Prerequisite: ENEE 6530 or consent of department. A study of advanced methods of analysis and synthesis of automatic control systems; continuous and discrete-time systems; control constraints; and estimation of optimum control in the presence of noise.
- ENEE 6532 Adaptive Control** 3 cr.  
Prerequisites: Electrical Engineering 6530 or consent of department. System identification and the control problem. Stability theory of dynamical systems. The design of adaptive observers. Adaptive control using the indirect approach. Applications of adaptive control.
- ENEE 6533 Advanced Random Variables and Stochastic Processes** 3 cr.  
Prerequisites: ENEE 3572. Engineering applications of probability theory. Problems on events, independence, random variables, distribution and density functions, expectations, and characteristic functions. Dependence, correlation, and regression; multi-variate Gaussian distribution. Stochastic processes, stationarity, ergodicity, correlation functions, special densities, random inputs to linear systems; Gaussian processes.
- ENEE 6534 Information Theory and Applications** 3 cr.  
Prerequisite: ENEE 4572 or consent of department. A study of the mathematical theory of communications. Noise and channel information rate. Theoretical and practical limits on channel capacity for various modulation schemes.
- ENEE 6535 Adaptive Filtering** 3 cr.  
Prerequisite: ENEE 6533 or consent of department. A study of linear optimum filtering including Wiener Filters and Kalman Filters; linear FIR adaptive filtering using method of steepest descent and recursive least squares; fast recursive algorithms and fast transversal filters.
- ENEE 6536 Advanced Digital Signal Processing with Speech Applications** 3 cr.  
Prerequisite: ENEE 4525. Advanced topics in digital signal processing including: short- and long-term data processing linear prediction analysis cepstral analysis coding and feature enhancement speech recognition dynamic time warping hidden Markov model and time-adaptive processing.
- ENEE 6540 Compound Semiconductor Devices** 3 cr.  
Prerequisites: credit or concurrent registration in ENEE 4542 or consent of department. Properties of III-V and II-VI compound semiconductors, operating principles of compound semiconductor devices including transferred electron devices, heterostructure field effect transistors, heterostructure bipolar transistors, and tunneling devices.
- ENEE 6541 Semiconductor Device Modeling** 3 cr.  
Prerequisite: ENEE 4542. Modeling of semiconductor devices, modeling of equilibrium and non-equilibrium transport phenomena of charge carriers in semiconductors and semiconductor devices, Monte Carlo simulation, balance equations, and numerical simulation of submicron devices using balance equations and Monte Carlo method.
- ENEE 6543 Transport Theory in Semiconductors** 3 cr.  
Prerequisites: credit or concurrent registration in ENEE 4542. A study of kinetic and hydrodynamic transport theories in semiconductors and devices. Scattering processes in semiconductors, and equilibrium and non-equilibrium transport models including the drift-diffusion theory, hydrodynamic transport model, and Boltzmann transport equation.
- ENEE 6544 Theory of Semiconductors and Semiconductor Devices** 3 cr.  
Prerequisites: credit or concurrent registration in ENEE 4542 or consent of department. Quantum mechanics of semiconductors, energy band theory, semiconductor statistics, electronic and optical properties of semiconductors, and their applications to semiconductor devices.
- ENEE 6551 Network Synthesis** 3 cr.  
Prerequisite: ENEE 3551 or consent of department. Introduction of Brune's positive real functions, properties and testing of positive real functions, driving-point synthesis, transfer-function synthesis, approximation theory, and topics in N-port and N-terminal network synthesis.
- ENEE 6552 Network Synthesis** 3 cr.  
Prerequisite: ENEE 3551 or consent of department. Introduction of Brune's positive real functions, properties and testing of positive real functions, driving-point synthesis, transfer-function synthesis approximation theory and topics in N-port and N-terminal network synthesis.
- ENEE 6553 Advanced Computer-Aided Network Design** 3 cr.  
Advanced circuit analytic design techniques utilizing a digital computer. Time-domain and non-linear sensitivity analysis. Adjoint techniques. Circuit optimization steady-state analysis. Averaging methods. Decomposition and tearing algorithms. Digital circuit simulation.
- ENEE 6554 Advanced Digital and Analog Filter Design** 3 cr.  
Prerequisite: ENEE 4554. realizability of Passive Networks; Orchard's Conjecture; finite word length effects in digital filters multiplier coefficient sensitivity; wave digital filters and digital ladder filters; noise scaling limit cycle oscillations; block digital filters; multirate digital filters.
- ENEE 6563 Fourier Optics** 3 cr.  
Prerequisite: Graduate standing in engineering or science or consent of department. Analysis of Fourier transformations and linear systems theory using optical processing, image formation, and holography.
- ENEE 6564 Polarization Optics** 3 cr.  
Prerequisite: ENEE 3560 or equivalent. Theory and applications of polarization optics; various mathematical representations of the state of polarization of light and the transformation of polarization by different optical elements; operating principles of polarizing optical devices; instruments for measurement of the state of polarization of light (ellipsometers and photopolarimeters) and their numerous applications in engineering, surface science, and materials research.
- ENEE 6565 Introduction to Lasers** 3 cr.  
Prerequisite: A junior/senior-level calculus-based course in electromagnetics or optics and some familiarity with the relevant modern physics. Exception may be granted with the consent of the department. Review of the basic concepts of wave optics (propagation, diffraction, interference, coherence, and polarization), matrix ray optics, Gaussian beam optics, optical resonators, transitions and rate equations for atoms in blackbody and monochromatic radiation fields, homogeneous and inhomogeneous broadening of atomic or molecular transitions, the small-signal gain coefficient, laser amplifiers, gain saturation, laser single-mode and multi-mode oscillation, pulsed operation by Q-switching and mode locking.

- ENEE 6566 Optical Communications** 3 cr.  
Prerequisite: A B.S. degree in Engineering Mathematics or Physics or consent of the department. The methods and techniques employed in optical communications. Optical sources and photodetectors, modulation and reception schemes, and characteristic models of both fiber optic and atmospheric channels will be examined. Overall optical system performance analysis will also be addressed.
- ENEE 6567 Semiconductor Optoelectronics** 3 cr.  
Prerequisite: ENEE 3560 and 4540 or consent of department. An introduction to optoelectronic communication and sensing systems and components. A study of the fundamentals of optical generation, detection, modulation in semiconductor lasers, detectors and the modulators, transmission and processing of optical beam signals in dielectric waveguides and optical fiber, and fiber optic sensors.
- ENEE 6570 Optimization Techniques in Engineering** 3 cr.  
Prerequisite: A B.S. degree in engineering mathematics or physics or consent of department. Introduction to the formulation of engineering optimization problems. The use of nonlinear optimization techniques such as Steepest Descent, Newton-Raphson, and Conjugate Gradients and Constrained Nonlinear Optimization Techniques in engineering problems. Geometric programming in engineering problems.
- ENEE 6581 Introduction to Digital Image Processing** 3 cr.  
Prerequisite: ENEE 4535. Introduction to digital image processing techniques for enhancement, compression, restoration, reconstruction, and analysis. 2-D signals and systems, sampling and scanning, random fields, discrete cosine transform, discrete Karhunen-Loeve transform, gray scale transformations, linear, ranked order, and morphological filters, human vision, printing and display of images, entropy-based compression, vector quantization, transform coding, predictive coding, image degradation models, Weiner filter, constrained deconvolution, edge detection.
- ENEE 6582 Computer Vision** 3 cr.  
Prerequisite: B.S. in Engineering, Math, or Physics, or consent of the department. Basic fundamentals and techniques of computer vision, including image analysis, image segmentation, edge detection, and determination of shape from shading.
- ENEE 6583 Neural Networks** 3 cr.  
Prerequisite: B.S. in Engineering, Math, or Physics, or consent of the department. Introduction to the ideas and techniques used in artificial neural network models.
- ENEE 6588 Optical Computing** 3 cr.  
Prerequisite: Graduate standing in engineering or science of consent of department. The topics include basic mathematical operations, matrix-vector and matrix-matrix multiplications, spatial light modulators, waveguides, and symbolic substitution.
- ENEE 4096G Special Topics in Electrical Engineering** 3 cr.  
Offered each semester and summer. Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENEE 4096 and 4097.
- ENEE 4097G Special Topics in Electrical Engineering** 3 cr.  
Offered each semester and summer. Prerequisite: junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENEE 4096 and 4097.
- ENEE 4522G Electric Power Distribution** 3 cr.  
Prerequisite: ENEE 3522. Analysis techniques of faulted electric power distribution systems in the steady and transient states.
- ENEE 4526G Protective Relaying of Power Systems** 3 cr.  
Prerequisite: ENEE 3522. Protection of power system components like transmission lines, transformers, radial feeders, generators, and motors from faults and lightning. Differential protection of transformers, generator windings, and transmission lines. Distance protection of transmission lines. Relay coordination for radial feeders. Carrier protection. Use of current and voltage transformers.
- ENEE 4533G Digital Control System Design** 3 cr.  
Spring semester. Prerequisite: ENEE 3533 or consent of department. Design and analysis of digital control systems using transform techniques and state-space methods.
- ENEE 4535G Introduction to Digital Signal Processing** 3 cr.  
Fall semester. Prerequisite: ENEE 3530 or consent of department. Fundamental concepts of digital processing are developed and include signal representation; Fourier series; z-transforms; discrete Fourier series; discrete random signals; data window functions; applications of DFT to convolution, auto and cross-correlation and power and energy spectrum distribution estimation; digital filter design; homomorphic signal processing.
- ENEE 4543G Power Electronics and Drives** 3 cr.  
Prerequisites: ENEE 3521 and 3540. Introduction to semiconductor devices, circuits with diodes and power switching devices, controlled rectifiers, dc choppers, dc and ac motor drives including armature-controlled dc motor drives, inverterfed induction and synchronous motor drives.
- ENEE 4554G Analog and Digital Filter Design** 3 cr.  
Prerequisite: ENEE 3530. The synthesis of analog and digital filters; elementary one port synthesis; Darlington filter synthesis; phase correction; synthesis of Real-part, magnitude, and phase; realization of recursive and nonrecursive digital filters; windowing; parallel, cascade, and direct forms of digital filters; digital hardware implementation.
- ENEE 4562G Engineering Optics** 3 cr.  
Prerequisite: Senior standing in engineering or science or consent of department. Optical fundamentals for engineering. Waves. Diffraction. Optical waveguides. Interferometry and Holography.
- ENEE 4570G Audio Engineering** 3 cr.  
Prerequisite: ENEE 3530 3540 or consent of department. Analog and Digital Recording and Reproduction Techniques and Systems are examined, and include microphone design, selection and application; Mixing and Recording Equipment Design and Techniques; Reproduction System Elements, including Disc Reproduction, Pre-Amplification, Power Amplification, Tuner, Tape Recording, Signal Processors and speakers.
- ENEE 4572G Advanced Communication System Design** 4 cr.  
Prerequisites: ENEE 3535 and 3572 or consent of department. Analysis of analog and digital modulation techniques in the presence of noise; receiver noise models, facsimile systems, signal vector theory, and introduction to information theory. Three hours of lecture and three hours of laboratory.
- ENEE 4582G Microcomputer Interfacing** 3 cr.  
Prerequisite: ENEE 3582. Microcomputer structures, memory and IO interfaces, bus interconnections, serial and parallel interfaces, and CRT-controller design. Includes laboratory work and a semester project.

## English

- ENGL 130 Developmental English** 6 cr.  
An intensive course designed to bring students up to university-level proficiency in reading and writing. ENGL 0130 is an equivalent course for ENGL 0150. Students will receive proficiency grades for

both 0130 and 0131. Those receiving two unsatisfactory grades will be required to repeat 0130-0131. Those receiving one passing and one unsatisfactory grade will be required to take the three-hour course equivalent to the one in which the unsatisfactory grade is received. English 0130 may not be counted for fulfillment of degree requirements.

**ENGL 150 English Composition** 3 cr.

Each course offered each semester. An introductory course in writing, largely expository, accompanied by selected readings. ENGL 0150 may not be counted for fulfillment of degree requirements. NOTE: On the basis of the UNO Placement Test or previous college English (if any), students will be grouped and required to take one, two, or three semesters of freshman composition. The required courses must be taken progressively, but in rare cases of exceptional progress students completing 0150 may be permitted to skip 1157; such students are eligible for by-pass credit in English 1157 under the procedure used for advanced placement credit for courses by-passed. Students who enter 1158 or 1159 initially thus take only one semester of freshman composition and may proceed without delay to any 2000-level course for which they have the necessary prerequisites. (1159 is the honors section of 1158.) In order to receive credit for 1158 students must pass a proficiency examination at the end of the semester.

**ENGL 181 Elementary Intensive English as a Second Language** 6 cr.

Prerequisite: ESL Placement Test. An intensive elementary-level course for students whose native language is not English. Thirteen class hours per week. ENGL 0181-0182 may not be counted for fulfillment of degree requirements.

**ENGL 182 Elementary Intensive English as a Second Language** 3-12 cr.

Prerequisite: ESL Placement Test. An intensive elementary-level course for students whose native language is not English. Thirteen class hours per week. ENGL 0181-0182 may not be counted for fulfillment of degree requirements.

**ENGL 183 Intermediate Intensive English as a Second Language** 6 cr.

Prerequisite: ESL Placement Test or completion of 0181-0182. An intensive intermediate-level course for students whose native language is not English. Thirteen class hours per week. ENGL 0183-0184 may not be counted for fulfillment of degree requirements.

**ENGL 184 Intermediate Intensive English as a Second Language** 3-12 cr.

Prerequisite: ESL Placement Test or completion of 0181-0182. An intensive intermediate-level course for students whose native language is not English. Thirteen class hours per week. ENGL 0183-0184 may not be counted for fulfillment of degree requirements.

**ENGL 185 Advanced Intensive English as a Second Language** 6 cr.

ESL Placement Test or completion of 0183-0184. An intensive advanced level course for students whose native language is not English. Thirteen class hours per week. ENGL 0185-0186 may not be counted for fulfillment of degree requirements.

**ENGL 186 Advanced Intensive English as a Second Language** 12 cr.

ESL Placement Test or completion of 0183-0184. An intensive advanced level course for students whose native language is not English. Thirteen class hours per week. ENGL 0185-0186 may not be counted for fulfillment of degree requirements.

**ENGL 187 Semi-Intensive English as a Second Language** 6 cr.  
ESL Placement Test or completion of 0186. A semi-intensive course for students whose native language is not English. Six class hours per week. ENGL 0187 may not be counted for fulfillment of degree requirements.

**ENGL 188 English as a Second Language** 3 cr.

Prerequisite: ESL Placement Test or completion of ENGL 0185-0186. A composition course designed for students whose native language is not English. Upon completion of ENGL 0188, a student may go on to ENGL 0189 or a higher course in some cases; upon completion of ENGL 0189, a student may go on to ENGL 0150, 1157, 1158, or 1159, depending upon his or her degree of proficiency in composition. Neither ENGL 0188 nor ENGL 0189 may be counted for fulfillment of degree requirements.

**ENGL 189 English as a Second Language** 3 cr.

Prerequisite: ESL Placement Test or completion of ENGL 0185-0186. A composition course designed for students whose native language is not English. Upon completion of ENGL 0188, a student may go on to ENGL 0189 or a higher course in some cases; upon completion of ENGL 0189, a student may go on to ENGL 0150, 1157, 1158, or 1159 depending upon his or her degree of proficiency in composition. Neither ENGL 0188 nor ENGL 0189 may be counted for fulfillment of degree requirements.

**ENGL 230 Reading Improvement** 3 cr.

Designed to train students in college-level reading. The entire reading process will be explored and applied through group interaction and individualized reading instruction. Three hours of lecture and one hour of laboratory work per week will be required. ENGL 0230 may not be counted for fulfillment of degree requirements. NOTE: This course will be required of certain students on the basis of the ACT test and additional reading tests. It is also available as an elective to all students.

**ENGL 1157 English Composition** 3 cr.

Each course offered each semester. An introductory course in writing largely expository accompanied by selected readings. ENGL 0150 may not be counted for fulfillment of degree requirements. NOTE: On the basis of the UNO Placement Test or previous college English (if any) students will be grouped and required to take one two or three semesters of freshman composition. The required courses must be taken progressively but in rare cases of exceptional progress students completing 0150 may be permitted to skip 1157; such students are eligible for by-pass credit in ENGL 1157 under the procedure used for advanced placement credit for courses by-passed. Students who enter 1158 or 1159 initially thus take only one semester of freshman composition and may proceed without delay to any 2000-level course for which they have the necessary prerequisites. (1159 is the honors section of 1158.) In order to receive credit for 1158 students must pass a proficiency examination at the end of the semester.

**ENGL 1158 English Composition** 3 cr.

Each course offered each semester. An introductory course in writing largely expository accompanied by selected readings. ENGL 0150 may not be counted for fulfillment of degree requirements. NOTE: On the basis of the UNO Placement Test or previous college English (if any) students will be grouped and required to take one two or three semesters of freshman composition. The required courses must be taken progressively but in rare cases of exceptional progress students completing 0150 may be permitted to skip 1157; such students are eligible for by-pass credit in ENGL 1157 under the procedure used for advanced placement credit for courses by-passed. Students who enter 1158 or 1159 initially thus take only one semester of freshman composition and may proceed without

- delay to any 2000-level course for which they have the necessary prerequisites. (1159 is the honors section of 1158.) In order to receive credit for 1158 students must pass a proficiency examination at the end of the semester.
- ENGL 1159 English Composition Honors** 3 cr.  
Each course offered each semester. An introductory course in writing largely expository accompanied by selected readings. ENGL 0150 may not be counted for fulfillment of degree requirements. NOTE: On the basis of the UNO Placement Test or previous college English (if any) students will be grouped and required to take one two or three semesters of freshman composition. The required courses must be taken progressively but in rare cases of exceptional progress students completing 0150 may be permitted to skip 1157; such students are eligible for by-pass credit in ENGL 1157 under the procedure used for advanced placement credit for courses bypassed. Students who enter 1158 or 1159 initially thus take only one semester of freshman composition and may proceed without delay to any 2000-level course for which they have the necessary prerequisites. (1159 is the honors section of 1158.) In order to receive credit for 1158 students must pass a proficiency examination at the end of the semester.
- ENGL 2041 Major American Writers** 3 cr.  
A study of works of important authors from 1600 to the present.
- ENGL 2071 African-American Literature I** 3 cr.  
Writings of African-Americans to 1939.
- ENGL 2072 African-American Literature II** 3 cr.  
Writings of African-Americans since 1939.
- ENGL 2151 Introduction to Non-Fiction Writing** 3 cr.  
The theory and practice of exposition, description, and narration.
- ENGL 2152 Technical Writing** 3 cr.  
Not open to freshmen without consent of department. A course designed primarily for students in science and engineering: the various forms of expository writing, with special emphasis on the preparation of reports or technical papers.
- ENGL 2161 Introduction to Fiction Writing** 3 cr.  
Prerequisite: ENGL 2238 or 2230 or consent of department. An introduction to the basic forms and techniques of fiction writing.
- ENGL 2163 Introduction to Poetry Writing** 3 cr.  
Prerequisite: ENGL 2248 or 2230 or consent of department.
- ENGL 2238 Introduction to the Short Story and the Novel** 3 cr.  
Offered each semester. A general introduction to the study and appreciation of the short story and the novel. An Honors section 2239 is usually available in the fall semester. (A student may not receive credit in both ENGL 2230 and 2238.)
- ENGL 2239 Introduction to the Short Story and the Novel for Honors** 3 cr.  
Offered each semester. A general introduction to the study and appreciation of the short story and the novel. An Honors section 2239 is usually available in the fall semester. (A student may not receive credit in both ENGL 2230 and 2238.)
- ENGL 2248 Introduction to Poetry and Drama** 3 cr.  
Offered each semester. A general introduction to the study and appreciation of poetry and drama. An Honors section 2249 is usually available in the spring semester. (A student may not receive credit in both ENGL 2230 and 2248.)
- ENGL 2249 Introduction to Poetry and Drama for Honors** 3 cr.  
Offered each semester. A general introduction to the study and appreciation of poetry and drama. An Honors section 2249 is usually available in the spring semester. (A student may not receive credit in both ENGL 2230 and 2248.)
- ENGL 2279 The Literature of Ancient Greece** 3 cr.  
Open only to honors students concurrently enrolled in A&S 1119. An intensive writing course on art, literature, and philosophy of Ancient Greece.
- ENGL 2282 An Introduction to Linguistics and English Usage** 3 cr.  
An introduction to basic linguistic concepts and an examination of levels of usage and notions of correctness as they relate to pronunciation, grammar, and vocabulary.
- ENGL 2284 A Survey of New Orleans English** 3 cr.  
A survey of the nature and role of regional, social, and ethnic language varieties through an intensive examination of the main phonological, lexical, idiomatic, and grammatical features of New Orleans English.
- ENGL 2311 American Film as Literary Art** 3 cr.  
An introduction to the literary art of American film based on representative classics. A laboratory fee is required.
- ENGL 2341 A Survey of British Literature from the Beginning to Later Eighteenth Century** 3 cr.  
This course is open to all students; it is required for English majors, literature track.
- ENGL 2342 A Survey of British Literature from the Romantics to the Present** 3 cr.  
This course is open to all students; it is required for English majors, literature track.
- ENGL 2374 Asian Literature** 3 cr.  
An introductory survey of Asian literature in translation. The course will acquaint the student with major works of India, China, and Japan stressing their influence on the themes and genres of contemporary Western literature.
- ENGL 2377 The Bible as Literature** 3 cr.  
A study of selections from the Old and New Testaments.
- ENGL 2378 Introduction to Women's Literature** 3 cr.  
An introductory survey of representative works in diverse literary forms by women from a wide variety of backgrounds and cultures with a focus on the idea of difference in women's writings and consider their relation to issues of class race sexual orientation and social context.
- ENGL 2391 Independent Work** 1 cr.  
Prerequisite: Consent of the department. Reading, conferences, and reports under the direction of a member of the English faculty.
- ENGL 2392 Independent Work** 1 cr.  
Prerequisite: Consent of the department. Reading, conferences, and reports under the direction of a member of the English faculty.
- ENGL 2393 Independent Work** 1 cr.  
Prerequisite: Consent of the department. Reading, conferences, and reports under the direction of a member of the English faculty.
- ENGL 2398 Special Studies in Literature and Language** 3 cr.  
Reading, evaluation, and discussion of selected writers works or literary topics. May be repeated once for credit.
- ENGL 2521 Shakespeare** 3 cr.  
The more popular plays.
- ENGL 2915 The Post World War II Novel** 3 cr.  
A study of important contemporary novels.
- ENGL 3042 Major Figures In American Literature** 3 cr.  
Prerequisite: ENGL 2041 or 4041 or consent of department. Selection of authors to be studied will vary from semester to semester.

- ENGL 3394 Senior Seminar in English** 3 cr.  
Prerequisite: 90 hours of University credit or upon recommendation of English faculty member. A study in depth of a single author, literary theme, or topic.
- ENGL 3399 Senior Honors Thesis** 3 cr.  
Prerequisite: consent of department and the director of the Honors Program. Directed research culminating in a written thesis to meet the requirements for graduation with Honors in English and if appropriate University Honors. Upon petition three hours of related course work in advanced English may be credited toward the thesis. May be repeated once for credit.
- ENGL 3595 Academic Year Abroad: Special Topics in English** 3 cr.  
This course is offered only through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria, and can be repeated once for credit.
- ENGL 4041 American Literature** 3 cr.  
A survey of the literature of the United States from the colonial beginning to the Civil War.
- ENGL 4042 American Literature** 3 cr.  
A survey of the literature of the United States from the Civil War to the present.
- ENGL 4045 Southern Literature** 3 cr.  
The literature of the American South surveyed from its colonial origins to the present, with special attention to the major figures.
- ENGL 4070 Special Topics in Women, Literature and Society** 3 cr.  
(WS 4070, ENGL 4070 and SOC 4070 are cross-listed) Prerequisite: ENGL 2378 or SOC 1051 or WS 2010 or consent of instructors. A team-taught, interdisciplinary study of women in literature and society. Variable topics include women and crime, women and work, women and the family, women and religion.
- ENGL 4093 Studies in Black Literatures** 3 cr.  
Topic will vary from semester to semester. May be repeated once for credit.
- ENGL 4151 Modern Composition: Theory and Practice** 3 cr.  
Prerequisite: ENGL 2151 or consent of department. Intensive study and practice in recent applications of traditional rhetorical modes.
- ENGL 4152 Technical Editing and Reporting** 3 cr.  
A detailed examination of important aspects of technical communication: technical editing, formal proposal writing, formal report writing, instruction manuals, and technical graphics.
- ENGL 4154 Advanced Non-fiction Writing** 3 cr.  
A workshop in magazine and article writing as well as other forms of non-fiction. May be repeated for credit only with consent of department.
- ENGL 4155 Professional Editing** 3 cr.  
A practical course dealing with the techniques of professional editing of nontechnical material.
- ENGL 4158 Legal Writing** 3 cr.  
A practical course dealing with the techniques of legal writing, the skills of composition appropriate to the special needs of lawyers and others in the legal professions.
- ENGL 4161 Advanced Fiction Writing** 3 cr.  
Prerequisite: ENGL 2161 or consent of department based on a writing sample. Guided practice in writing fiction and a close, intensive study of the techniques involved. May be repeated once for credit.
- ENGL 4163 Advanced Poetry Writing** 3 cr.  
Prerequisite: ENGL 2163 or consent of department based on a writing sample. Guided practice in writing poetry and a close, intensive study of the techniques involved. May be repeated once for credit.
- ENGL 4230 Literary Sources of the Western Tradition** 3 cr.  
A survey of the principal mythological influences on Western literature.
- ENGL 4231 Literary Criticism** 3 cr.  
A study of some of the more important literary critics, ancient and modern.
- ENGL 4240 Adolescent Literature** 3 cr.  
(ENGL 4240 and LIBS 4200 are cross listed). A survey of books and materials appropriate for use with the adolescent reader. Emphasis will be placed on selection and discussion of books for today's teenagers. This course can be used to satisfy general degree requirements in literature for upper elementary education students only.
- ENGL 4280 General Linguistics** 3 cr.  
Prerequisite: ENGL 2282 or consent of department. A study of modern linguistic theory and universal grammar. Attention will be given to historical and geographical linguistics and to the linguistic structure of non-Western languages.
- ENGL 4281 History of the English Language** 3 cr.  
The development of the language from Old English times to the Modern English period.
- ENGL 4282 Contemporary English Language** 3 cr.  
The structure of the English language and its application in the classroom.
- ENGL 4283 Regional Varieties of English in the Americas** 3 cr.  
A survey of the regional dialects of North America and the Caribbean.
- ENGL 4284 The Study of Social Dialects** 3 cr.  
An investigation of the presently developing principles and methods of studying nonstandard English, with some exploration of the ways in which such principles and methods might apply to the study of New Orleans social dialects. Some field work will be required.
- ENGL 4285 Second Language Acquisition** 3 cr.  
Prerequisite: ENGL 2282, 4280 or 4282 or consent of instructor. An introduction to the theory of acquiring a second language as it pertains to children and adults.
- ENGL 4378 Advanced Studies in Women and Literature** 3 cr.  
Prerequisite: ENGL 2378 or consent of department. Advanced work in feminist critical theories and their application to fictional and non-fictional literature.
- ENGL 4390 Comparative Studies** 3 cr.  
Prerequisite: 90 hours of university credit or upon recommendation of English faculty member. A course that applies the aims and methods of comparative studies to a topic in focusing on literature across national boundaries and/or in relation to other arts and disciplines. Topics will vary. May be repeated once for credit.
- ENGL 4391 Special Topics in Language and Literature** 3 cr.  
Prerequisite: consent of department. Topic will vary from semester to semester. May be repeated once for credit.
- ENGL 4392 Independent Topics** 1 cr.  
Prerequisite: consent of department. Reading, discussions, and reports under the direction of a member of the English faculty. This course may be repeated but total credit may not exceed four semester hours.
- ENGL 4398 Internship in English** 3 cr.  
Prerequisite: consent of department. A course emphasizing writing skills in internships in local industrial, business, and government agencies. May be repeated once for credit by undergraduates only.

ENGL 4401 Literature of England in the Later Middle Ages	3 cr.	ENGL 4716 Restoration and Eighteenth Century English Drama	3 cr.
Readings in the works of Langland, Gower, Malory, and the "Pearl Poet" and in other works of the period between 1100 and 1500.		A study of English drama from the later seventeenth century to the end of the eighteenth century with some attention to developments in staging.	
ENGL 4421 Chaucer	3 cr.	ENGL 4801 Prose and Poetry of the Early Romantic Period	3 cr.
The Canterbury Tales.		Writers of the preromantic period; Blake, Wordsworth, Coleridge, and other writers of the period.	
ENGL 4501 English Literature of the Sixteenth Century	3 cr.	ENGL 4802 Later Romantic Writers	3 cr.
A survey of the prose and verse of the earlier Renaissance in England including works by Thomas More, Wyatt, Surrey, Sidney, Spenser, Marlowe, Raleigh, and Shakespeare.		Emphasis on Byron, Shelley, and Keats with some attention to such prose writers as DeQuincey and Hazlitt.	
ENGL 4516 The Beginning of the English Drama	3 cr.	ENGL 4807 Earlier Victorian Literature	3 cr.
The development of English drama to Shakespeare.		Tennyson, Browning, Macaulay, Carlyle, and their contemporaries.	
ENGL 4521 Shakespeare	3 cr.	ENGL 4808 Later Victorian Literature	3 cr.
The earlier plays, their background, with some attention to Shakespeare's life and time.		Arnold, Swinburne, Morris, Rossetti, Pater, Stevenson, and contemporaries to 1900.	
ENGL 4522 Shakespeare	3 cr.	ENGL 4815 The Nineteenth Century English Novel	3 cr.
The later plays, with particular emphasis on the author's development.		A study of the English novel from Austen to Conrad.	
ENGL 4601 English Literature Of the Seventeenth Century, 1600-1660	3 cr.	ENGL 4913 Early Twentieth Century Poetry	3 cr.
A survey of the literature of the later Renaissance in England, including works by the major prose writers and by the metaphysical, Cavalier, and devotional poets: Bacon, Hobbes, Donne, Jonson, Herrick, Herbert, Milton, and Marvell.		Modern English and American poetry to 1945.	
ENGL 4616 Drama of the Age of Shakespeare	3 cr.	ENGL 4914 Contemporary Poetry	3 cr.
Shakespeare's contemporaries and immediate successors to 1642.		English and American poetry since 1945.	
ENGL 4621 Milton	3 cr.	ENGL 4915 The Modern Novel	3 cr.
A study of the poems with emphasis on Paradise Lost, Paradise Regained, and Samson Agonistes and an examination of various prose works.		A study of the novel from 1900 to 1945.	
ENGL 4696 Washington Center Internship	6 cr.	ENGL 4916 Twentieth Century Drama	3 cr.
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).		Modern and Contemporary European, English, and American Drama.	
ENGL 4698 Washington Center Research	3 cr.	ENGL 4917 The Contemporary Novel	3 cr.
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).		A study of the novel since 1945.	
ENGL 4701 Restoration and Early Eighteenth Century Literature	3 cr.	ENGL 6151 Writing Institute	3-6 cr.
Prose and poetry from the Restoration to the death of Pope with emphasis on Dryden, Pope, and Swift.		(EDCI 6020 and ENGL 6151 are cross-listed) Offered during the summer session only. An invitational workshop designed for teachers interested in improving writing, theirs and their students'. An intensive exploration of the research and practice in the field. Section number will correspond with credit to be earned.	
ENGL 4702 Later Eighteenth Century Literature	3 cr.	ENGL 6154 Non-Fiction Writing Workshop	3 cr.
Prose and poetry from the death of Pope to 1798 with emphasis on Johnson and his circle.		A workshop in advanced non-fiction writing. May be repeated once for credit only with consent of department.	
ENGL 4715 The Eighteenth Century English Novel	3 cr.	ENGL 6161 Writing Fiction	3 cr.
A study of the development and characteristics of the English novel from its beginnings through the time of Austen.		Admission by permission of the department. Training in the writing of short stories and novels. May be repeated for credit.	
		ENGL 6163 Writing Poetry	3 cr.
		Admission by permission of the department. Training in the writing of poetry. May be repeated for credit.	
		ENGL 6240 Nonfiction	3 cr.
		Study of the genres of nonfiction.	
		ENGL 6243 Poetry	3 cr.
		Study of poetry as a genre.	
		ENGL 6245 The Novel	3 cr.
		Study of the novel as a genre.	
		ENGL 6246 Drama	3 cr.
		Study of drama as a genre.	
		ENGL 6247 The Short Story	3 cr.
		Study of the short story as a genre.	
		ENGL 6397 Directed Study	3 cr.
		Readings, conferences, reports, and a research paper under the direction of a member of the graduate faculty. The student defines	

- the topic in consultation with the faculty member and then obtains approval of the Coordinator of Graduate Studies in English. May be repeated once for credit.
- ENGL 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- ENGL 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- ENGL 4041G American Literature** 3 cr.  
A survey of the literature of the United States from the colonial beginning to the Civil War.
- ENGL 4042G American Literature** 3 cr.  
A survey of the literature of the United States from the Civil War to the present.
- ENGL 4045G Southern Literature** 3 cr.  
The literature of the American South surveyed from its colonial origins to the present, with special attention to the major figures.
- ENGL 4070G Special Topics in Women, Literature and Society** 3 cr.  
(WS 4070, ENGL 4070 and SOC 4070 are cross-listed) Prerequisite: ENGL 2378 or SOC 1051 or WS 2010 or consent of instructors. A team-taught, interdisciplinary study of women in literature and society. Variable topics include women and crime, women and work, women and the family, women and religion.
- ENGL 4093G Studies in Black Literatures** 3 cr.  
Topic will vary from semester to semester. May be repeated once for credit.
- ENGL 4151G Modern Composition: Theory and Practice** 3 cr.  
Prerequisite: ENGL 2151 or consent of department. Intensive study and practice in recent applications of traditional rhetorical modes.
- ENGL 4152G Technical Editing and Reporting** 3 cr.  
A detailed examination of important aspects of technical communication: technical editing, formal proposal writing, formal report writing, instruction manuals, and technical graphics.
- ENGL 4154G Advanced Non-fiction Writing** 3 cr.  
A workshop in magazine and article writing as well as other forms of non-fiction. May be repeated for credit only with consent of department.
- ENGL 4155G Professional Editing** 3 cr.  
A practical course dealing with the techniques of professional editing of nontechnical material.
- ENGL 4158G Legal Writing** 3 cr.  
A practical course dealing with the techniques of legal writing, the skills of composition appropriate to the special needs of lawyers and others in the legal professions.
- ENGL 4161G Advanced Fiction Writing** 3 cr.  
Prerequisite: ENGL 2161 or consent of department based on a writing sample. Guided practice in writing fiction and a close, intensive study of the techniques involved. May be repeated once for credit.
- ENGL 4163G Advanced Poetry Writing** 3 cr.  
Prerequisite: ENGL 2163 or consent of department based on a writing sample. Guided practice in writing poetry and a close, intensive study of the techniques involved. May be repeated once for credit.
- ENGL 4230G Literary Sources of the Western Tradition** 3 cr.  
A survey of the principal mythological influences on Western literature.
- ENGL 4231G Literary Criticism** 3 cr.  
A study of some of the more important literary critics, ancient and modern.
- ENGL 4240G Adolescent Literature** 3 cr.  
(ENGL 4240 and LIBS 4200 are cross listed). A survey of books and materials appropriate for use with the adolescent reader. Emphasis will be placed on selection and discussion of books for today's teenagers. This course can be used to satisfy general degree requirements in literature for upper elementary education students only.
- ENGL 4280G General Linguistics** 3 cr.  
Prerequisite: ENGL 2282 or consent of department. A study of modern linguistic theory and universal grammar. Attention will be given to historical and geographical linguistics and to the linguistic structure of non-Western languages.
- ENGL 4281G History of the English Language** 3 cr.  
The development of the language from Old English times to the Modern English period.
- ENGL 4282G Contemporary English Language** 3 cr.  
The structure of the English language and its application in the classroom.
- ENGL 4283G Regional Varieties of English in the Americas** 3 cr.  
A survey of the regional dialects of North America and the Caribbean.
- ENGL 4284G The Study of Social Dialects** 3 cr.  
An investigation of the presently developing principles and methods of studying nonstandard English, with some exploration of the ways in which such principles and methods might apply to the study of New Orleans social dialects. Some field work will be required.
- ENGL 4285G Second Language Acquisition** 3 cr.  
Prerequisite: ENGL 2282, 4280 or 4282 or consent of instructor. An introduction to the theory of acquiring a second language as it pertains to children and adults.
- ENGL 4378G Advanced Studies in Women and Literature** 3 cr.  
Prerequisite: ENGL 2378 or consent of department. Advanced work in feminist critical theories and their application to fictional and non-fictional literature.
- ENGL 4390G Comparative Studies** 3 cr.  
Prerequisite: 90 hours of university credit or upon recommendation of English faculty member. A course that applies the aims and methods of comparative studies to a topic in focusing on literature across national boundaries and/or in relation to other arts and disciplines. Topics will vary. May be repeated once for credit.
- ENGL 4391G Special Topics in Language and Literature** 3 cr.  
Prerequisite: consent of department. Topic will vary from semester to semester. May be repeated once for credit.
- ENGL 4392G Independent Topics** 1 cr.  
Prerequisite: consent of department. Reading, discussions, and reports under the direction of a member of the English faculty. This course may be repeated but total credit may not exceed four semester hours.
- ENGL 4398G Internship in English** 3 cr.  
Prerequisite: consent of department. A course emphasizing writing skills in internships in local industrial, business, and government agencies. May be repeated once for credit by undergraduates only.

- ENGL 4401G Literature of England in the Later Middle Ages** 3 cr.  
Readings in the works of Langland, Gower, Malory, and the "Pearl Poet" and in other works of the period between 1100 and 1500.
- ENGL 4421G Chaucer** 3 cr.  
The Canterbury Tales.
- ENGL 4501G English Literature of the Sixteenth Century** 3 cr.  
A survey of the prose and verse of the earlier Renaissance in England including works by Thomas More, Wyatt, Surrey, Sidney, Spenser, Marlowe, Raleigh, and Shakespeare.
- ENGL 4516G The Beginning of the English Drama** 3 cr.  
The development of English drama to Shakespeare.
- ENGL 4521G Shakespeare** 3 cr.  
The earlier plays, their background, with some attention to Shakespeare's life and time.
- ENGL 4522G Shakespeare** 3 cr.  
The later plays, with particular emphasis on the author's development.
- ENGL 4601G English Literature Of the Seventeenth Century, 1600-1660** 3 cr.  
A survey of the literature of the later Renaissance in England, including works by the major prose writers and by the metaphysical, Cavalier, and devotional poets: Bacon, Hobbes, Donne, Jonson, Herrick, Herbert, Milton, and Marvell.
- ENGL 4616G Drama of the Age of Shakespeare** 3 cr.  
Shakespeare's contemporaries and immediate successors to 1642.
- ENGL 4621G Milton** 3 cr.  
A study of the poems with emphasis on Paradise Lost, Paradise Regained, and Samson Agonistes and an examination of various prose works.
- ENGL 4696G Washington Center Internship** 6 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- ENGL 4698G Washington Center Research** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- ENGL 4701G Restoration and Early Eighteenth Century Literature** 3 cr.  
Prose and poetry from the Restoration to the death of Pope with emphasis on Dryden, Pope, and Swift.
- ENGL 4702G Later Eighteenth Century Literature** 3 cr.  
Prose and poetry from the death of Pope to 1798 with emphasis on Johnson and his circle.
- ENGL 4715G The Eighteenth Century English Novel** 3 cr.  
A study of the development and characteristics of the English novel from its beginnings through the time of Austen.
- ENGL 4716G Restoration and Eighteenth Century English Drama** 3 cr.  
A study of English drama from the later seventeenth century to the end of the eighteenth century with some attention to developments in staging.
- ENGL 4801G Prose and Poetry of the Early Romantic Period** 3 cr.  
Writers of the preromantic period; Blake, Wordsworth, Coleridge, and other writers of the period.
- ENGL 4802G Later Romantic Writers** 3 cr.  
Emphasis on Byron, Shelley, and Keats with some attention to such prose writers as DeQuincey and Hazlitt.
- ENGL 4807G Earlier Victorian Literature** 3 cr.  
Tennyson, Browning, Macaulay, Carlyle, and their contemporaries.
- ENGL 4808G Later Victorian Literature** 3 cr.  
Arnold, Swinburne, Morris, Rossetti, Pater, Stevenson, and contemporaries to 1900.
- ENGL 4815G The Nineteenth Century English Novel** 3 cr.  
A study of the English novel from Austen to Conrad.
- ENGL 4913G Early Twentieth Century Poetry** 3 cr.  
Modern English and American poetry to 1945.
- ENGL 4914G Contemporary Poetry** 3 cr.  
English and American poetry since 1945.
- ENGL 4915G The Modern Novel** 3 cr.  
A study of the novel from 1900 to 1945.
- ENGL 4916G Twentieth Century Drama** 3 cr.  
Modern and Contemporary European, English, and American Drama.
- ENGL 4917G The Contemporary Novel** 3 cr.  
A study of the novel since 1945.

## Engineering

- ENGR 1000 Introduction to Engineering** 1 cr.  
Prerequisite: credit for or currently enrolled in DEVM 0107. An in-depth orientation in the various areas of engineering and related fields of employment. The course also provides an introduction to problem-solving techniques, ethics, communications skills, and engineering study techniques.
- ENGR 2560 Physical Electronics** 3 cr.  
Physical Electronics
- ENGR 3090 Senior Seminar** 1 cr.  
Lectures on current topics in engineering by members of the faculty, engineers from industry, researchers, and senior and graduate students in engineering. The role of the engineer in today's society, professional ethics, and professional registration; OSHA; technical societies.
- ENGR 4710 Legal Aspects Regarding Engineering in the Oil and Gas Industry** 3 cr.  
Prerequisite: consent of college. This course is designed to help the engineer achieve a basic understanding of policy considerations in mineral law systems calling special attention to the Louisiana property concept will be studied in order to give the engineer a background against which to study and better understand the Mineral Code and its provisions. Fundamental laws and Federal OCS oil and gas regulation and compliance requirements will also be covered.
- ENGR 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.

**ENGR 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduate requirements.

**ENGR 4710G Legal Aspects Regarding Engineering in the Oil and Gas Industry** 3 cr.  
Prerequisite: consent of college. This course is designed to help the engineer achieve a basic understanding of policy considerations in mineral law systems calling special attention to the Louisiana property concept will be studied in order to give the engineer a background against which to study and better understand the Mineral Code and its provisions. Fundamental laws and Federal OCS oil and gas regulation and compliance requirements will also be covered.

## Mechanical Engineering

**ENME 1781 Computer Aided Engineering Graphics** 3 cr.  
Prerequisite: MATH 1112 or consent of department. An introduction to conventional engineering graphics with emphasis on current computer techniques; isometric and orthographic projection; orthographic sketching; sectional views; points, lines, planes; surface intersections and developments; revolved, primary, and secondary views.

**ENME 2711 Structures and Properties of Materials Laboratory** 1 cr.  
Prerequisite: credit or registration in ENME 2740. Demonstrative and participative experiments supplementing ENME 2740 to provide a better understanding of the properties of engineering materials. Three hours of laboratory.

**ENME 2740 Structure and Properties of Materials** 3 cr.  
Prerequisites: CHEM 1017 and PHYS 1061. Introduction to the structure and formation of metals, alloys, and polymeric materials and their chemical, electrical, mechanical, and thermodynamical properties; surface structures and their observation, using a metallograph and selected microscopes.

**ENME 2750 Dynamics** 3 cr.  
Prerequisites: ENCE 2350 and MATH 2112. Kinematics; kinetics; and work and energy; impulse and momentum.

**ENME 2785 Introduction to Computer Integrated Manufacturing Methods** 3 cr.  
Prerequisite: credit or registration in ENME 1781. An introduction to classical and automated manufacturing; including computer numerical control lathe and mill application, and assembly line application with robots.

**ENME 3020 Engineering Analysis** 3 cr.  
Prerequisites: MATH 2221; credit or registration in MATH 2115. Application of LaPlace transforms, Fourier series, matrices, partial differential equations, probability/statistics to selected problems in Civil, Mechanical, and Naval Architecture and Marine Engineering.

**ENME 3092 Mechanical Engineering Design Project** 3 cr.  
Prerequisites: Junior standing and consent of department. Individual or team study and evolution of a project involving engineering. Comprehensive oral and written reports are required.

**ENME 3093 Special Problems in Mechanical Engineering** 1 cr.  
Prerequisite: Junior standing in engineering. Seminar, independent study, and research participation in mechanical engineering.

**ENME 3094 Special Problems in Mechanical Engineering** 1 cr.  
Prerequisite: Junior standing in engineering. Seminar, independent study, and research participation in mechanical engineering.

**ENME 3095 Special Problems in Mechanical Engineering** 1 cr.  
Prerequisite: Junior standing in engineering. Seminar, independent study, and research participation in mechanical engineering.

**ENME 3711 Thermal Sciences Laboratory** 1 cr.  
Prerequisites: credit in ENME 3771 or consent of department. A laboratory in engineering thermodynamics and heat transfer. Three hours of laboratory.

**ENME 3716 Fluid Mechanics Laboratory** 1 cr.  
Prerequisite: credit or registration in ENME 3720 or consent of department. A laboratory in engineering fluid mechanics and hydraulics. Three hours of laboratory.

**ENME 3720 Fluid Mechanics** 3 cr.  
Prerequisites: MATH 2112, PHYS 1062 and ENME 2750. Fluid statics; concepts, principles, and methods of fluid motion, potential flow. Introduction to boundary layer; turbulence and drag; dimensional analysis and similitude.

**ENME 3733 Machine Design** 3 cr.  
Prerequisites: ENGL 2152, ENME 3731 and credit or registration in ENME 3732. Theory and practice of machine design applied to entire machines. Complete design including drawings, analysis, written report, and oral presentation are required.

**ENME 3755 Introduction to Mechanical Vibrations** 3 cr.  
Prerequisites: MATH 2221, ENME 2750 and concurrent registration in ENME 3020; or consent of department. Single and double degree of freedom systems in free and forced motion, lumped parameter analysis of continuous systems, and vibration measurement devices.

**ENME 3757 Introduction to Mechanical Control Systems** 3 cr.  
Prerequisites: ENME 2750, MATH 2221, and ENEE 2500; or consent of department. Mathematical modeling of mechanical systems; model linearization; methods of solution and simulation; basic notions of feedback control algorithms; transfer functions, frequency response, and system identification and stability.

**ENME 3761 Introduction to Nuclear Engineering** 3 cr.  
Prerequisites: credit or registration in PHYS 2064 and ENME 3770 or consent of department. Radiation decay; detection; protection and safety. Applications of radioactive isotopes; introduction to nuclear power, nuclear fuels, fuel cycle, and power plant design.

**ENME 3770 Engineering Thermodynamics** 3 cr.  
Prerequisites: credit or registration in MATH 2109 or 2112 and PHYS 1062. Basic laws of thermodynamics; equilibrium; entropy; availability; flow and non-flow processes.

**ENME 3771 Heat Transfer** 3 cr.  
Prerequisites: MATH 2221, CSCI 1201, ENME 3720 and ENME 3770. Steady and unsteady conduction; natural and forced convection; radiation; heat exchangers; introduction to two-phase heat transfer. Computer-aided solutions to heat transfer problems.

**ENME 3772 Environmental Control Systems** 3 cr.  
Prerequisite: ENME 3771. The principles of heating, ventilating, air conditioning, and refrigeration; application to environmental control systems. Emphasis is on the selection of equipment and the design of various systems, including automatic controls.

**ENME 3773 Design of Thermal-Fluid Systems** 3 cr.  
Prerequisites: ENME 3770 and 3771 or consent of department. Design of thermal-fluid systems utilizing the principles of heat transfer, thermodynamics, and fluid mechanics with emphasis on practical, economical designs. Semester projects are assigned to student groups; weekly progress reports, final written and oral reports required.

- ENME 3776 Intermediate Engineering Thermodynamics** 3 cr.  
Prerequisite: ENME 3770. Application of principles of thermodynamics; vapor and gas cycles; internal combustion engines; steam and gas turbines, mixtures, thermodynamic relationships.
- ENME 3777 Energy Conversion** 3 cr.  
Prerequisite: ENME 3770. Direct energy conversion; magnetohydrodynamics; energy storage; vapor and gas cycles; applications and thermodynamic analysis; nuclear, hydrodynamic, solar, geothermal, and wind energy.
- ENME 3780 Introduction to Computer-Aided Mechanical Design** 3 cr.  
Prerequisites: CSCI 1201, ENME 3020 credit or registration in ENME 3731; or consent of department. An introduction to computing environments and underlying algorithms of computer-aided design. Topics include: graphical user interfaces, data interpolation, integration and differentiation, roots, systems of equations, simulation, optimization, graphics, and visualization.
- ENME 3782 Design of Measurement Systems** 3 cr.  
Prerequisite: ENME 3717. Formulation and analysis of measurement systems; design of structural models; evaluation of experimental and analytical results.
- ENME 3785 Computer-Integrated Manufacturing Systems** 3 cr.  
Prerequisites: ENEE 2500 and credit or registration in ENME 2785 and ENME 3780. Automated manufacturing; system dynamics and controls of mechanical systems; robotic systems and their applications; numerical machine program generation from 3-D geometrical images.
- ENME 3792 Case Studies in Mechanical Engineering Design** 3 cr.  
Prerequisite: senior standing in engineering or consent of department. Evaluation of complex designs of machinery and industrial systems. Lectures and workshops conducted by faculty members and design engineers from regional industries. Semester team project required. Additional prerequisites may be required by the faculty adviser sponsoring the project.
- ENME 3900 Senior Honors Thesis** 1-6 cr.  
Prerequisites: admission to the Honors Program and consent of the director of the Honors Program and the chair of the department. Senior-level research and/or design project in mechanical engineering. Thesis and oral examination required. May be repeated for credit with total hours not to exceed six.
- ENME 4023 Intermediate Engineering Analysis** 3 cr.  
Prerequisites: MATH 2221 and ENME 3020. Application of complex variables; contour integration; conformal mapping; Cartesian tensors; non-linear differential equations; and selected problems in mechanical engineering.
- ENME 4096 Special Topics in Mechanical Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Course may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENME 4096 and 4097.
- ENME 4097 Special Topics in Mechanical Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Course may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENME 4096 and 4097.
- ENME 4720 Intermediate Fluid Mechanics** 3 cr.  
Prerequisites: ENME 3720 and 3020 or consent of department. Study of the conservation equations governing viscous or inviscid flow of an incompressible fluid, and appropriate engineering approximation in engineering design. Introduction to numerical methods used to solve steady or unsteady viscous or inviscid, laminar, or turbulent flows.
- ENME 4721 Gas Dynamics** 3 cr.  
Prerequisites: MATH 2221, ENME 3720 and 3770. Conservation laws, one-dimensional flow, stationary and propagating normal shocks, quasi-one-dimensional flow, Rayleigh line flow, Fanno line flow, oblique shocks, Prandtl-Meyer expansions.
- ENME 4722 Design and Selection of Turbomachinery** 3 cr.  
Prerequisites: ENME 3720 and 3770 or consent of department. Analysis of the fluid flows through a turbomachine for compressible and incompressible flows. Determination of blading design and orientation for various types of turbomachines. Axial and radial flow machines, centrifugal pumps, fans, and compressors are included along with some experimentation with turbomachines.
- ENME 4723 Ocean and Coastal Engineering** 3 cr.  
(ENCE 4723, ENME 4723, and NAME 4723 are cross-listed). Prerequisite: ENME 3720 or ENCE 3310 or consent of the department. Elements of wind and wave generation and forecasting, tidal phenomena, hurricanes, storm surge, tsunamis, interaction of waves and wind with coastal and offshore structures, coastal and estuary processes. Design aspects of various topics are discussed and analyzed: e.g., offshore structures, spar buoys, underwater pipelines, oil production risers, coastal protection, mooring cables, vortex shedding, gas flares, beach formation, harbor resonance, structure resonance, etc. A design project is required.
- ENME 4724 Fluid Flow Systems** 3 cr.  
Prerequisite: ENME 3720 or consent of department. Properties of hydraulic fluids; hydraulic lines; pipe networks; principles and design of hydraulic and pneumatic control components and systems; fluid machinery.
- ENME 4725 Incompressible Aerodynamics** 3 cr.  
Prerequisites: ENME 3020 and 3720. Basic phenomena of the external flow of incompressible fluid. Theoretical development of the lift of plane, cambered airfoils, and the lift and drag of the finite wing. Comparison and discussion of experimental values of lift and drag.
- ENME 4735 Reliability in Engineering Design** 3 cr.  
Prerequisite: Mechanical Engineering 3020 or consent of department. Probabilistic approach to design and analysis of engineering problems. Statistical methods include point and interval estimation, tests of hypotheses, functions of random variables, and reliability analysis.
- ENME 4751 Advanced Dynamics** 3 cr.  
Prerequisites: ENME 2750 and MATH 2221. Central force motion, three-dimensional kinetics, kinematics, and dynamics of rigid bodies; gyroscopic motion; Lagrange's equations; Hamilton's principle; and trajectories.
- ENME 4757 Intermediate Mechanical Vibrations** 3 cr.  
Prerequisite: ENME 3755 or consent of department. Fundamental phenomena of multi-degree discrete and continuous systems. Matrix methods of solution of discrete systems. Determination of natural frequencies and mode shapes of discrete and continuous systems. Methods of passive vibration control. Brief introduction to finite element methods.
- ENME 4770 Design of Solar Heating and Cooling Systems** 3 cr.  
Prerequisite: credit or registration in ENME 3771 or consent of department. Availability and characteristics of solar energy; design performance and testing of flat plate and concentrating collectors; solar heating and cooling of buildings; air systems and water systems; storage systems; economics; typical designs; solar cells.
- ENME 4771 Intermediate Heat Transfer** 3 cr.  
Prerequisite: ENME 3771 or consent of department. Review of basic modes of heat transfer; combined convection and radiation; boiling

- and condensation; introduction to numerical methods for solving heat transfer problems; application of heat transfer principles to related problems in engineering.
- ENME 4772 Internal Combustion Engines** 3 cr.  
Prerequisites: ENME 3720 and 3770 or consent of department. Thermodynamics of internal combustion engines; the combustion process; analysis of basic engine types; overview of automotive fuels and lubricants. Laboratory testing of a production-type engine. Group project required.
- ENME 4773 Energy Management** 3 cr.  
Prerequisites: ENME 3720 and 3771 or consent of department. Technical elements of reducing energy consumption and costs; aspects of management and cost elements pertaining to engineering decision making; typical topics include electrical, utility, process, building and heating, ventilating and air conditioning systems; waste heat management and energy auditing.
- ENME 4783 Introduction to Robotics** 3 cr.  
Prerequisites: ENME 3732 or consent of department. Spatial description and transformations; forward kinematics; inverse kinematics; manipulator Jacobians; manipulator statics; and manipulator dynamics.
- ENME 6024 Boundary Value Problems** 3 cr.  
Prerequisite: ENME 4023 or consent of department. A unified study of the techniques available for the solution of boundary value problems of the types found in advanced engineering analysis. Application to representative problems from specific areas of engineering.
- ENME 6095 Advanced Mechanical Engineering Problems** 1-6 cr.  
Individual projects in selected fields of mechanical engineering. Independent work under the direction of a faculty member on a subject of mutual interest. Student must find faculty sponsor. A written report will usually be required. Course may be repeated for credit but no more than a total of six credit hours may be applied toward a degree. Section number will correspond with credit to be earned.
- ENME 6096 Advanced Special Topics in Mechanical Engineering** 3 cr.  
Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of mechanical engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENME 4096, 4097, 6096, 6097, 6098.
- ENME 6097 Advanced Special Topics in Mechanical Engineering** 3 cr.  
Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of mechanical engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENME 4096, 4097, 6096, 6097, 6098.
- ENME 6098 Advanced Special Topics in Mechanical Engineering** 3 cr.  
Prerequisite: consent of department. Special lectures or independent study on subjects of current interest in the various fields of mechanical engineering. May be taken for credit three times. No student may earn more than a total of nine hours of degree credit in courses ENME 4096, 4097, 6096, 6097, 6098.
- ENME 6354 Theory of Elasticity** 3 cr.  
Prerequisites: ENCE 4353 or consent of department. Plane stress and plane strain; two-dimensional problems in rectangular and polar coordinates; strain energy methods; complex variables in two-dimensional problems; the general equations of three-dimensional elasticity.
- ENME 6355 Theory of Plates and Shells** 3 cr.  
(ENCE 6355 and ENME 6355 are cross-listed) Prerequisites: ENCE 6353 and MATH 2221. Laterally loaded plates with various boundary conditions; elastic stability of plates; differential geometry of surfaces; equilibrium and strain equations; membrane theory of shells; shells of revolution with emphasis on cylindrical and spherical shells.
- ENME 6357 Fracture Mechanics** 3 cr.  
Prerequisite: ENME 6354 or 6355 or 6756 or consent of department. Stationary crack under static loading, energy balance and crack growth, crack initiation and growth, dynamic crack growth, fatigue, fracture of composite material.
- ENME 6720 Advanced Fluid Mechanics** 3 cr.  
Prerequisite: ENME 4720 or consent of department. Continuity; stream and potential function; irrotational flow; Laplace Euler and Bernoulli equations; standard patterns of flow; conformal transformations; Schwarz-Christoffel theorem; and vortex motion.
- ENME 6721 Advanced Gas Dynamics** 3 cr.  
Prerequisite: ENME 4721. Derivation of the differential conservation equations for inviscid flows; unsteady wave motion; acoustic theory; shock tube relations; linearized supersonic flow; numerical techniques for steady supersonic flow; and viscous compressible flow.
- ENME 6723 Boundary Layer Theory** 3 cr.  
Prerequisite: ENME 4720 or consent of department. Fundamental laws of motion for a viscous fluid; laminar boundary layer; transition and separation; and turbulent boundary layer.
- ENME 6753 Advanced Continuum Mechanics** 3 cr.  
Prerequisite: consent of department. Kinematics of motion and deformation; general development of balance equations of continuum mechanics; theory of constitutive equations; study of the constitutive equations for elastic, hyperelastic, viscoelastic, and plastic materials.
- ENME 6755 Advanced Vibrations** 3 cr.  
Prerequisite: ENME 4757. Lagrange's equations of motion and their application to vibration analysis; multi-degree of freedom systems; matrix methods; and transients.
- ENME 6756 Theory of Plasticity** 3 cr.  
Prerequisite: ENCE 4353 or consent of department. Stress and strain tensors; elastic stress-strain relations criteria of yielding; plastic stress-strain relations; elastoplastic problems of spheres and cylinders; the plane elastoplastic problem; the slip-line field.
- ENME 6771 Conduction Heat Transfer** 3 cr.  
Prerequisite: ENME 4771 or consent of department. Conduction heat transfer; steady state and transient system; one-dimensional, two-dimensional, and three-dimensional systems.
- ENME 6772 Convection Heat Transfer** 3 cr.  
Prerequisites: ENME 4771 and 4720 or consent of department. Forced and free convection heat transfer in laminar and turbulent flow; condensation and evaporation; and special heat transfer processes.
- ENME 6773 Radiation Heat Transfer** 3 cr.  
Prerequisite: ENME 4771. Radiative heat exchange among specularly and diffusely reflecting surfaces; radiant interchange in participating media; combined radiation, conduction, and convection; and advanced topics.
- ENME 4023G Intermediate Engineering Analysis** 3 cr.  
Prerequisites: MATH 2221 and ENME 3020. Application of complex variables; contour integration; conformal mapping; Cartesian tensors; non-linear differential equations; and selected problems in mechanical engineering.

- ENME 4096G Special Topics in Mechanical Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Course may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENME 4096 and 4097.
- ENME 4097G Special Topics in Mechanical Engineering** 3 cr.  
Prerequisite: junior standing in engineering. Course may be taken for credit three times. No student may earn more than nine hours degree credit in courses ENME 4096 and 4097.
- ENME 4720G Intermediate Fluid Mechanics** 3 cr.  
Prerequisites: ENME 3720 and 3020 or consent of department. Study of the conservation equations governing viscous or inviscid flow of an incompressible fluid, and appropriate engineering approximation in engineering design. Introduction to numerical methods used to solve steady or unsteady viscous or inviscid, laminar, or turbulent flows.
- ENME 4721G Gas Dynamics** 3 cr.  
Prerequisites: MATH 2221, ENME 3720 and 3770. Conservation laws, one-dimensional flow, stationary and propagating normal shocks, quasi-one-dimensional flow, Rayleigh line flow, Fanno line flow, oblique shocks, Prandtl-Meyer expansions.
- ENME 4722G Design and Selection of Turbomachinery** 3 cr.  
Prerequisites: ENME 3720 and 3770 or consent of department. Analysis of the fluid flows through a turbomachine for compressible and incompressible flows. Determination of blading design and orientation for various types of turbomachines. Axial and radial flow machines, centrifugal pumps, fans, and compressors are included along with some experimentation with turbomachines.
- ENME 4723G Ocean and Coastal Engineering** 3 cr.  
(ENCE 4723, ENME 4723, and NAME 4723 are cross-listed). Prerequisite: ENME 3720 or ENCE 3310 or consent of the department. Elements of wind and wave generation and forecasting, tidal phenomena, hurricanes, storm surge, tsunamis, interaction of waves and wind with coastal and offshore structures, coastal and estuary processes. Design aspects of various topics are discussed and analyzed: e.g., offshore structures, spar buoys, underwater pipelines, oil production risers, coastal protection, mooring cables, vortex shedding, gas flares, beach formation, harbor resonance, structure resonance, etc. A design project is required.
- ENME 4724G Fluid Flow Systems** 3 cr.  
Prerequisite: ENME 3720 or consent of department. Properties of hydraulic fluids; hydraulic lines; pipe networks; principles and design of hydraulic and pneumatic control components and systems; fluid machinery.
- ENME 4725G Incompressible Aerodynamics** 3 cr.  
Prerequisites: ENME 3020 and 3720. Basic phenomena of the external flow of incompressible fluid. Theoretical development of the lift of plane, cambered airfoils, and the lift and drag of the finite wing. Comparison and discussion of experimental values of lift and drag.
- ENME 4735G Reliability in Engineering Design** 3 cr.  
Prerequisite: Mechanical Engineering 3020 or consent of department. Probabilistic approach to design and analysis of engineering problems. Statistical methods include point and interval estimation, tests of hypotheses, functions of random variables, and reliability analysis.
- ENME 4751G Advanced Dynamics** 3 cr.  
Prerequisites: ENME 2750 and MATH 2221. Central force motion, three-dimensional kinetics, kinematics, and dynamics of rigid bodies; gyroscopic motion; Lagrange's equations; Hamilton's principle; and trajectories.
- ENME 4757G Intermediate Mechanical Vibrations** 3 cr.  
Prerequisite: ENME 3755 or consent of department. Fundamental phenomena of multi-degree discrete and continuous systems. Matrix methods of solution of discrete systems. Determination of natural frequencies and mode shapes of discrete and continuous systems. Methods of passive vibration control. Brief introduction to finite element methods.
- ENME 4770G Design of Solar Heating and Cooling Systems** 3 cr.  
Prerequisite: credit or registration in ENME 3771 or consent of department. Availability and characteristics of solar energy; design performance and testing of flat plate and concentrating collectors; solar heating and cooling of buildings; air systems and water systems; storage systems; economics; typical designs; solar cells.
- ENME 4771G Intermediate Heat Transfer** 3 cr.  
Prerequisite: ENME 3771 or consent of department. Review of basic modes of heat transfer; combined convection and radiation; boiling and condensation; introduction to numerical methods for solving heat transfer problems; application of heat transfer principles to related problems in engineering.
- ENME 4772G Internal Combustion Engines** 3 cr.  
Prerequisites: ENME 3720 and 3770 or consent of department. Thermodynamics of internal combustion engines; the combustion process; analysis of basic engine types; overview of automotive fuels and lubricants. Laboratory testing of a production-type engine. Group project required.
- ENME 4773G Energy Management** 3 cr.  
Prerequisites: ENME 3720 and 3771 or consent of department. Technical elements of reducing energy consumption and costs; aspects of management and cost elements pertaining to engineering decision making; typical topics include electrical, utility, process, building and heating, ventilating and air conditioning systems; waste heat management and energy auditing.
- ENME 4783G Introduction to Robotics** 3 cr.  
Prerequisites: ENME 3732 or consent of department. Spatial description and transformations; forward kinematics; inverse kinematics; manipulator Jacobians; manipulator statics; and manipulator dynamics.
- ENMG 6401 Seminar in Organizational Behavior** 3 cr.  
Prerequisite: Management 3401 or Engineering Management 6101 or consent of department. A study of organizational behavior across all levels of organizational life: the individual, interpersonal, group, organizational, and society. Problems to be discussed and dealt with include motivation, communications, leadership, group dynamics, power, organizational structures and design, and various types of environmental constraints including competition, markets, and governmental regulations. Lecture, discussion, and group problem-solving project reports are included in instructional methodology.

## Fine Arts

- FA 1010 Art Appreciation** 3 cr.  
Offered each semester. Open to all undergraduates. An introduction to art in which the visual elements and principles are examined through a study of the key monuments in the history of art from cave paintings to the present. Important styles of painting, sculpture, architecture, and twentieth century media are explored with attention to the personalities of the artists and the cultures in which they lived.
- FA 1011 Two Dimensional Fundamentals** 3 cr.  
Offered each semester. A study of the elements of two-dimensional art including color, composition, process, and visual perception

- with practice in the various media. Primarily for fine arts majors. Six hours of studio work.
- FA 1012 Introduction to Drawing** 3 cr.  
Offered each semester. An introduction to basic drawing concepts and media. Six hours of studio work.
- FA 1013 Three-Dimensional Fundamentals** 3 cr.  
Weekly studio assignments in this course will explore the visual elements in three-dimensional forms and structures. Lectures, demonstrations, discussions, slide presentations, outside reading assignments, field trips, and critiques are an integral part of the studio work. Six hours of studio a week.
- FA 1014 Figure Drawing** 3 cr.  
Offered each semester. Prerequisite: FA 1012. Drawing from the figure with emphasis on understanding its fundamental structure and movements and furthering sensitivity to visual organization and graphic expression. Six hours of studio work.
- FA 1100 Introduction to European Art and Architecture** 3 cr.  
Introduction to the major developments in Western art from ancient Greece through the twentieth century. Offered only for students enrolled in the High School European Honors Program at Innsbruck.
- FA 2000 Field Research in the Arts** 1-3 cr.  
(DRCM 2000, FA 2000, and MUS 2000 are cross-listed) Prerequisite: consent of department. Special research project in the arts involving field experience and study outside the city of New Orleans. Advance preparation for the project will include conference with or lecture by the faculty and readings in the specific areas to be studied. The study trip will consist of attendance at a minimum of four theatrical or musical performances or a minimum of eight hours spent in visits to exhibits or museums for each hour of credit. A follow-up paper on a research topic inspired by the trip will be required. May be repeated for up to six hours of credit. Credit will be given for only DRCM 2000, FA 2000, or MUS 2000 for the same trip.
- FA 2201 Historical Survey of the Arts** 3 cr.  
Offered each semester. Prerequisite: satisfactory completion of ENGL 1158. Prehistoric, ancient, classical, and medieval periods. Lectures with slides, films, and readings.
- FA 2202 Historical Survey of the Arts** 3 cr.  
Offered each semester. Prerequisite: satisfactory completion of ENGL 1158. The Renaissance, the New World, and the contemporary periods. Lectures with slides, films, and readings.
- FA 2215 Monuments of Greek and Roman Art** 3 cr.  
Prerequisite: satisfactory completion of ENGL 1158. Survey of the major monuments of Greek and Roman Art from the Archaic Period, c. 650 B.C. in Greece to the Early Christian Period, c. 400 A.D. on the Italian peninsula.
- FA 2220 Monuments of Medieval Art** 3 cr.  
Prerequisite: satisfactory completion of ENGL 1158. Survey of the major monuments of European Art from the medieval period with emphasis on church architecture and sculpture.
- FA 2231 A Survey of the History of Photography** 3 cr.  
Prerequisite: satisfactory completion of ENGL 1158. A survey of the history of photography and its influence on modern styles from its earliest beginnings to work by contemporary photographers. Emphasis will be on both aesthetic and technical innovations.
- FA 2232 Monuments of Italian Art** 3 cr.  
Survey of the major monuments in painting, sculpture, and architecture from Italy c. 1400-c. 1580.
- FA 2236 Monuments of Italian Baroque Art** 3 cr.  
Survey of the major monuments in painting, sculpture, and architecture in Italy c. 1600-c. 1750.
- FA 2245 Monuments of the Nineteenth Century** 3 cr.  
Prerequisite: satisfactory completion of ENGL 1158. Survey of the major monuments in painting, sculpture, and graphic arts in Europe c. 1780-1880.
- FA 2264 Art of the Twentieth Century** 3 cr.  
Prerequisite: satisfactory completion of ENGL 1158. A survey of the major monuments of European and American painting, sculpture, and architecture from c.1880 to the present.
- FA 2300 Intermediate Drawing** 3 cr.  
Offered each semester. Prerequisites: FA 1011, 1012, and 1014. Emphasis upon the refinement of technical proficiency and mature concepts of visual structure in furthering sensitivity to the expressive potential of drawing media. Six hours of studio work.
- FA 2400 Introduction to Photography** 3 cr.  
Offered each semester. Prerequisites: FA 1011, 1012, and 1014. Photography as a creative medium with introductory study of visual concepts and techniques useful in using the camera and laboratory as instruments for visual expression. Six hours of studio work.
- FA 2500 Introduction to Graphic Design** 3 cr.  
Offered each semester. Prerequisites: FA 1011, 1012, and 1014. An introduction to the graphic design process with emphasis on lettering and layout skills, client presentations, typesetting, printing processes, and preparing art for reproduction. Six hours of studio work.
- FA 2600 Introduction to Sculpture** 3 cr.  
Offered each semester. Prerequisites: FA 1011, 1012, and 1014. An introduction to formal and technical problems in sculpture; traditional and contemporary aspects of the art. Discussions and demonstrations. Six hours of studio work.
- FA 2700 Introduction to Painting** 3 cr.  
Offered each semester. Prerequisites: FA 1011, 1012, and 1014. An introduction to formal and technical problems of painting, development of fundamental concepts and skills. Six contact hours per week including discussions, critiques, slide presentations, field trips, lectures, outside readings, and actual studio projects.
- FA 2710 Watercolor** 3 cr.  
Prerequisites: FA 1011, 1012, and 1014. An introduction to watercolor as a Fine Arts medium exploring a sequence of painting problems emphasizing wash drawing, color, and design structure. Discussions and slide talks. Six hours of studio work.
- FA 2800 Introduction to Printmaking** 3 cr.  
Offered each semester. Prerequisites: FA 1011, 1012, and 1014. A survey course in graphic art. Studio work in various graphic media. Readings and discussions. Six hours of studio work per week.
- FA 3203 Senior Project in Art History** 3 cr.  
Prerequisites: At least 24 hours in art history courses at the 3000 level or above, including one with at least three of the full-time art history faculty, and consent of department. Independent study resulting in the writing of an advanced research paper. Topic to be determined in consultation with the supervising faculty member. The finished paper will be evaluated by a committee of the art history faculty.
- FA 3271 Art Historical Methods** 3 cr.  
Prerequisites: 12 hours in art history including FA 2201 and 2202 and consent of department. Offered once every third semester excluding summers. A seminar designed to familiarize students with a variety of art historical methods through readings, discussions, written assignments, and visits to museums and archives.

Required of all art history majors. Students in disciplines other than art history who can meet the prerequisites and are interested in post-baccalaureate studies or career possibilities in art history are encouraged to take this course.

**FA 3291 Internship in Fine Arts** 3 cr.  
Prerequisite: consent of department. Each semester the department makes available a limited number of internships for qualified undergraduates with the City of New Orleans and other public and nonprofit agencies. Interns will work a minimum of eight hours a week at times mutually agreeable to the individual and the agency; some assignments may require more than eight hours a week. In addition, the student must meet regularly with an adviser from the fine arts faculty and the student's work will receive written evaluation from both the agency supervisor and the departmental adviser. FA 3291 and 3292 may not be used as part of the departmental requirement for a nine hour sequence at the 3000 level stipulated in the Studio Art Option.

**FA 3292 Internship in Fine Arts** 3 cr.  
Prerequisite: consent of department. Each semester the department makes available a limited number of internships for qualified undergraduates with the City of New Orleans and other public and nonprofit agencies. Interns will work a minimum of eight hours a week at times mutually agreeable to the individual and the agency; some assignments may require more than eight hours a week. In addition, the student must meet regularly with an adviser from the fine arts faculty and the student's work will receive written evaluation from both the agency supervisor and the departmental adviser. FA 3291 and 3292 may not be used as part of the departmental requirement for a nine hour sequence at the 3000 level stipulated in the Studio Art Option.

**FA 3293 Independent Study in Art History** 3 cr.  
Prerequisites: 12 hours in art history including FA 2201 and 2202 and consent of department. A tutorial arranged individually to provide latitude for specialized study and research on topics not offered in the current curriculum. A member of the art history faculty will arrange a study-research outline with each student in the first tutorial meeting. Weekly progress reports conferences and a research paper are required. FA 3293 may not be used to satisfy the period distribution requirements of the art history major. This course may be repeated once for credit.

**FA 3299 Senior Honors Thesis in Art History** 3 cr.  
Prerequisites: consent of the department and Director of the Honors Program. Directed research leading to the writing of a Senior Honors Thesis. Must be repeated for a total of six credit hours in order to graduate with honors in Art History. Credit for this course will not be counted towards the 12 hours of Art History at the 3000-level or above required for Art History majors. Successful completion of six hours in FA 3299 will be accepted in lieu of FA 3203.

**FA 3301 Advanced Drawing** 3 cr.  
Offered each semester. Prerequisite: FA 3402. Students will execute a major project in the area of photography, prepare a critical analysis of their project, and plan and present a suitable exhibit of the project for review and evaluation by a committee of studio faculty. Six hours of studio work.

**FA 3302 Advanced Drawing** 3 cr.  
Prerequisite: FA 2300. Studio work in drawing with emphasis on studio projects. Six hours of studio work.

**FA 3400 Intermediate Photography** 3 cr.  
Offered each semester. Prerequisite: Fine Arts 2400. Advanced work in photographic techniques as a means of pictorial expression. FA 3400 and 3401 must be taken in sequence. A grade of C or better

must be earned in FA 3400 before taking FA 3401. Six hours of studio work for each class.

**FA 3401 Intermediate Photography** 3 cr.  
Offered each semester. Prerequisite: FA 2400. Advanced work in photographic techniques as a means of pictorial expression. FA 3400 and 3401 must be taken in sequence. A grade of C or better must be earned in FA 3400 before taking FA 3401. Six hours of studio work for each class.

**FA 3402 Advanced Photography** 3 cr.  
Offered each semester. Prerequisite: FA 3401. Advanced photography is a continuation of FA 3401 with more emphasis on personal artistic expression and greater craftsmanship. Six hours of studio work.

**FA 3403 Senior Project in Photography** 3 cr.  
Offered each semester. Prerequisite: FA 3402. Students will execute a major project in the area of photography, prepare a critical analysis of their project, and plan and present a suitable exhibit of the project for review and evaluation by a committee of studio faculty. Six hours of studio work.

**FA 3500 Illustration** 3 cr.  
Offered each semester. Prerequisite: FA 2500. Creative problem solving in symbol, trademark, illustration, and publication design and the application and expansion of skills and processes learned in FA 2500. FA 3500 and 3501 must be taken in sequence. A grade of C or better must be earned in FA 3500 before taking FA 3501. Six hours of studio work for each course.

**FA 3501 Illustration** 3 cr.  
Offered each semester. Prerequisite: FA 2500. Creative problem solving in symbol, trademark, illustration, and publication design and the application and expansion of skills and processes learned in FA 2500. FA 3500 and 3501 must be taken in sequence. A grade of C or better must be earned in FA 3500 before taking FA 3501. Six hours of studio work for each course.

**FA 3502 Advanced Graphic Design** 3 cr.  
Offered each semester. Prerequisite: FA 3501. Creative problem solving in poster, advertising, and package design and the application and expansion of skills and concepts learned in FA 2500 and 3501.

**FA 3503 Senior Project in Graphic Design** 3 cr.  
Offered each semester. Prerequisite: FA 3502. Students will execute a major project in the area of graphic design, prepare a critical analysis of their project, and plan and present a suitable exhibit of the project for review and evaluation by a committee of studio faculty. Six hours of studio work.

**FA 3595 Academic Year Abroad: Special Topics in Fine Arts** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.

**FA 3600 Intermediate Sculpture** 3 cr.  
Offered each semester. Prerequisite: FA 2600. A continuation of the study of formal and technical problems in sculpture; exploration by the student into new techniques and materials. Demonstrations and discussions. FA 3600 and 3601 must be taken in sequence. A grade of C or better must be earned in FA 3600 before taking FA 3601. Six hours of studio work.

**FA 3601 Intermediate Sculpture** 3 cr.  
Offered each semester. Prerequisite: FA 2600. A continuation of the study of formal and technical problems in sculpture; exploration by the student into new techniques and materials. Demonstrations and discussions. FA 3600 and 3601 must be taken in sequence. A grade of C or better must be earned in FA 3600 before taking FA 3601. Six hours of studio work.

- FA 3602 Advanced Sculpture** 3 cr.  
Offered each semester. Prerequisite: FA 3601. A continuation of the study of formal and technical problems in sculpture; development of the individual's art and its relation to the world of sculpture; and further expansion in techniques, materials, and theories. Demonstrations and discussions. Six hours of studio work.
- FA 3603 Senior Project in Sculpture** 3 cr.  
Offered each semester. Prerequisite: FA 3602. Students will execute a major project in the area of sculpture, prepare a critical analysis of their project, and plan and present a suitable exhibit of the project for review and evaluation by a committee of studio faculty. Six hours of studio work.
- FA 3700 Intermediate Painting** 3 cr.  
Offered each semester. Prerequisite: FA 2700. Studio work in painting with emphasis on the development of a variety of skills concepts and materials. Six contact hours including discussion, critiques, slide presentations, field trips, lectures, outside readings, and actual studio work. FA 3700 and 3701 must be taken in sequence. A grade of C or better must be earned in FA 3700 before taking FA 3701. Six hours of studio work.
- FA 3701 Intermediate Painting** 3 cr.  
Offered each semester. Prerequisite: FA 2700. Studio work in painting with emphasis on the development of a variety of skills, concepts, and materials. Six contact hours including discussion, critiques, slide presentations, field trips, lectures, outside readings, and actual studio work. FA 3700 and 3701 must be taken in sequence. A grade of C or better must be earned in FA 3700 before taking FA 3701. Six hours of studio work.
- FA 3702 Advanced Painting** 3 cr.  
Offered each semester. Prerequisite: FA 3701. Studio work in painting with emphasis on the individual development of special skills and interests in painting media. Six contact hours including discussions, critiques, slide presentations, field trips, lectures, outside readings, and actual studio work.
- FA 3703 Senior Project in Painting** 3 cr.  
Offered each semester. Prerequisite: FA 3702. Students will execute a major project in the area of painting, prepare a critical analysis of their project, and plan and present a suitable exhibit of the project for review and evaluation by a committee of studio faculty. Six hours of studio work.
- FA 3800 Intermediate Printmaking** 3 cr.  
Offered each semester. Prerequisite: FA 2800. Work in the various graphic media including relief intaglio lithography and various photographic processes with an emphasis upon development of proficiency and mature image concepts in a given medium. FA 3800 and 3801 must be taken in sequence. A grade of C or better must be earned in FA 3800 before taking FA 3801. Six hours of studio work.
- FA 3801 Intermediate Printmaking** 3 cr.  
Offered each semester. Prerequisite: FA 2800. Work in the various graphic media including relief intaglio lithography and various photographic processes with an emphasis upon development of proficiency and mature image concepts in a given medium. FA 3800 and 3801 must be taken in sequence. A grade of C or better must be earned in FA 3800 before taking FA 3801. Six hours of studio work.
- FA 3802 Advanced Printmaking** 3 cr.  
Offered each semester. Prerequisite: FA 3801. Advanced work in the various graphic media including relief, intaglio, lithography, and various photographic processes. Six hours of studio work per week.
- FA 3803 Senior Project in Printmaking** 3 cr.  
Offered each semester. Prerequisite: FA 3802. Students will execute a major project in the area of graphics, prepare a critical analysis of
- their project, and plan and present a suitable exhibit of the project for review and evaluation by a committee of studio faculty. Six hours of studio work.
- FA 4100 Principles in Art Education** 3 cr.  
A survey of major ideas regarding the role of art in contemporary life and education with special emphasis upon understanding the nature of creativity and art experiences in childhood and adolescent development. The establishment of art programs and problems in selection, organization, presentation, and evaluation of art activities in relation to the total educational format.
- FA 4210 African Art** 3 cr.  
A study of the arts of sub-Saharan Africa. Emphasis is on the form and function of art in African cultures previous to or independent of Westernization.
- FA 4220 Medieval Art** 3 cr.  
Prerequisites: FA 2201 and 2202 or consent of department. A survey of European art from the Middle Ages with emphasis on Christian architecture sculpture and painting.
- FA 4230 The International Gothic and (Ars Nova) in the Netherlands and Germany** 3 cr.  
Prerequisite: FA 2201, 2202 or consent of department. Critical study of developments in painting sculpture and graphics in Northern Europe from Claus Sluter to Hieronymus Bosch.
- FA 4233 The Art of the Sixteenth Century in Holland, Belgium, Germany, Austria and France** 3 cr.  
Prerequisite: FA 2202 or consent of department. Recommended as a sequel to FA 4230. Critical study of developments in painting, sculpture, and graphics in Northern Europe from Albrecht Durer to Germain Pilon.
- FA 4235 The Art of Quattrocento in Italy** 3 cr.  
Prerequisite: FA 2201, 2202 or consent of department. Critical study of developments in painting, sculpture, and graphic media in the major centers of Italy from Ghiberti to Signorelli.
- FA 4237 The High Renaissance and Mannerism in Italy** 3 cr.  
Prerequisite: FA 2202 or consent of department. Recommended as a sequel to FA 4235. Critical study of developments in painting, sculpture, and graphic media in Italy from Leonardo da Vinci to Paolo Veronese.
- FA 4238 Architecture of the Renaissance and Baroque** 3 cr.  
Prerequisites: FA 2201 and 2202, or consent of department. Recommended as a sequel to FA 4235 and 4237. Systematic study of the major developments in architecture and urban design in Italy, France, Spain, c.1400-1750. Emphasizing the leading role of Italy with mention of selected cities and monuments from France and Spain.
- FA 4240 Italian Baroque and Rococo Art** 3 cr.  
Prerequisite: FA 2202 or consent of department. Recommended as a sequel to FA 4238. Critical study of the developments in painting, sculpture, and graphic media in Italy from Caravaggio to Guardi.
- FA 4245 Art of the Nineteenth Century** 3 cr.  
Fall semester. Prerequisite: FA 2202 or consent of department. A study of the arts of Europe and America from neoclassicism to Postimpressionism.
- FA 4263 Twentieth Century Architecture** 3 cr.  
Prerequisite: FA 2202 or consent of instructor. A study of the architects, movements, and monuments which have determined the course of twentieth century architecture in the United States and Europe.

- FA 4265 Early Modern Art (1880-1920)** 3 cr.  
Prerequisite: FA 2202 or consent of instructor. Developments in painting and sculpture in Europe and the United States from the 1880s to 1920. Attention will be given to major styles and movements (including Symbolism, Neo-Impressionism, Fauvism, Cubism, Expressionism, and Dada) to individual artists and artworks, and to the development of the concepts of revolutionary modernism and the avant-garde, of the primitive in art, and of abstraction.
- FA 4266 Modernism at Mid-Century (1920-1960)** 3 cr.  
Prerequisite: FA 2202, 4265 or consent of instructor. Developments in painting and sculpture in Europe and the United States from 1920 to 1960. Attention will be given to major styles and movements (including Surrealism, Abstract Expressionism, Art Informel, Neo Dada), to individual artists and artworks, and to the instrumental roles of the historian, the critic, the curator, the marketplace, and political events in shaping late modern art.
- FA 4267 Contemporary Art: Postmodernism and Beyond (1960-present)** 3 cr.  
Prerequisite: FA 4266 or consent of instructor. Developments in the visual arts in the United States and Europe from 1960 to the present. Attention will be given to major styles and movements (including Pop, Minimalism, Performance, Environmental Art, Conceptual Art, Feminism, Neexpressionism, Appropriation), to significant artists and critics, and to the historical and theoretical context in which the concept of Postmodernism has taken shape.
- FA 6010 Visual Arts for Art Administrators** 3 cr.  
Prerequisite: admission to the M.A. administration program or consent of department. An overview of the field of visual arts. This introduction to the visual arts will include the terminology and criteria for aesthetic evaluation, the materials and processes of painting, sculpture, graphic arts, and architecture, an historical survey, and consideration of management principles and practices appropriate to the visual arts. Lectures will be supplemented by visits to local galleries and museums. Intended as a distributive component in the M.A. administration program, this course may not be taken for graduate credit toward the M.F.A. in Fine Arts.
- FA 6100 Independent Research in Art History** 3 cr.  
Prerequisite: consent of department.
- FA 6501 Major Studio I** 3 cr.  
Offered each semester. Major Studio for Master of Fine Arts candidates in one of the areas of painting, sculpture, graphics, or photography. To be taken in sequence for a total of 12 hours.
- FA 6502 Major Studio I** 3 cr.  
Offered each semester. Major Studio for Master of Fine Arts candidates in one of the areas of painting, sculpture, graphics, or photography. To be taken in sequence for a total of 12 hours.
- FA 6503 Major Studio I** 3 cr.  
Offered each semester. Major Studio for Master of Fine Arts candidates in one of the areas of painting, sculpture, graphics, or photography. To be taken in sequence for a total of 12 hours.
- FA 6504 Major Studio I** 3 cr.  
Offered each semester. Major Studio for Master of Fine Arts candidates in one of the areas of painting, sculpture, graphics, or photography. To be taken in sequence for a total of 12 hours.
- FA 6601 Major Studio II** 3 cr.  
A continuation of Major Studio I. Major studio for Master of Fine Arts candidates in the studio area that was selected for Major Studio I. To be taken in sequence for a total of 21 hours.
- FA 6602 Major Studio II** 3 cr.  
A continuation of Major Studio I. Major studio for Master of Fine Arts candidates in the studio area that was selected for Major Studio I. To be taken in sequence for a total of 21 hours.
- FA 6603 Major Studio II** 3 cr.  
A continuation of Major Studio I. Major studio for Master of Fine Arts candidates in the studio area that was selected for Major Studio I. To be taken in sequence for a total of 21 hours.
- FA 6604 Major Studio II** 3 cr.  
A continuation of Major Studio I. Major studio for Master of Fine Arts candidates in the studio area that was selected for Major Studio I. To be taken in sequence for a total of 21 hours.
- FA 6605 Major Studio II** 3 cr.  
A continuation of Major Studio I. Major studio for Master of Fine Arts candidates in the studio area that was selected for Major Studio I. To be taken in sequence for a total of 21 hours.
- FA 6606 Major Studio II** 3 cr.  
A continuation of Major Studio I. Major studio for Master of Fine Arts candidates in the studio area that was selected for Major Studio I. To be taken in sequence for a total of 21 hours.
- FA 6607 Major Studio II** 3 cr.  
A continuation of Major Studio I. Major studio for Master of Fine Arts candidates in the studio area that was selected for Major Studio I. To be taken in sequence for a total of 21 hours.
- FA 6701 Minor Studio** 3 cr.  
Minor Studio for M.F.A. candidates to be chosen from a studio area different from the major area. To be taken in sequence for a total of 12 hours.
- FA 6702 Minor Studio** 3 cr.  
Minor Studio for M.F.A. candidates to be chosen from a studio area different from the major area. To be taken in sequence for a total of 12 hours.
- FA 6703 Minor Studio** 3 cr.  
Minor Studio for M.F.A. candidates to be chosen from a studio area different from the major area. To be taken in sequence for a total of 12 hours.
- FA 6704 Minor Studio** 3 cr.  
Minor Studio for M.F.A. candidates to be chosen from a studio area different from the major area. To be taken in sequence for a total of 12 hours.
- FA 6801 Seminar in Fine Arts** 1 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements. Investigation into concepts and issues in visual arts. Students in the M.F.A. program must enroll in the seminar three times. Grades will be assigned on a SU basis.
- FA 7000 Thesis Research** 1-9 cr.  
Offered each semester. To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- FA 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.

- FA 4100G Principles in Art Education** 3 cr.  
A survey of major ideas regarding the role of art in contemporary life and education with special emphasis upon understanding the nature of creativity and art experiences in childhood and adolescent development. The establishment of art programs and problems in selection, organization, presentation, and evaluation of art activities in relation to the total educational format.
- FA 4210G African Art** 3 cr.  
A study of the arts of sub-Saharan Africa. Emphasis is on the form and function of art in African cultures previous to or independent of Westernization.
- FA 4220G Medieval Art** 3 cr.  
Prerequisites: FA 2201 and 2202 or consent of department. A survey of European art from the Middle Ages with emphasis on Christian architecture sculpture and painting.
- FA 4230G The International Gothic and (Ars Nova) in the Netherlands and Germany** 3 cr.  
Prerequisite: FA 2201, 2202 or consent of department. Critical study of developments in painting sculpture and graphics in Northern Europe from Claus Sluter to Hieronymus Bosch.
- FA 4233G The Art of the Sixteenth Century in Holland, Belgium, Germany, Austria and France** 3 cr.  
Prerequisite: FA 2202 or consent of department. Recommended as a sequel to FA 4230. Critical study of developments in painting, sculpture, and graphics in Northern Europe from Albrecht Durer to Germain Pilon.
- FA 4235G The Art of Quattrocento in Italy** 3 cr.  
Prerequisite: FA 2201, 2202 or consent of department. Critical study of developments in painting, sculpture, and graphic media in the major centers of Italy from Ghiberti to Signorelli.
- FA 4237G The High Renaissance and Mannerism in Italy** 3 cr.  
Prerequisite: FA 2202 or consent of department. Recommended as a sequel to FA 4235. Critical study of developments in painting, sculpture, and graphic media in Italy from Leonardo da Vinci to Paolo Veronese.
- FA 4238G Architecture of the Renaissance and Baroque** 3 cr.  
Prerequisites: FA 2201 and 2202, or consent of department. Recommended as a sequel to FA 4235 and 4237. Systematic study of the major developments in architecture and urban design in Italy, France, Spain, c.1400-1750. Emphasizing the leading role of Italy with mention of selected cities and monuments from France and Spain.
- FA 4240G Italian Baroque and Rococo Art** 3 cr.  
Prerequisite: FA 2202 or consent of department. Recommended as a sequel to FA 4238. Critical study of the developments in painting, sculpture, and graphic media in Italy from Caravaggio to Guardi.
- FA 4245G Art of the Nineteenth Century** 3 cr.  
Fall semester. Prerequisite: FA 2202 or consent of department. A study of the arts of Europe and America from neoclassicism to Postimpressionism.
- FA 4263G Twentieth Century Architecture** 3 cr.  
Prerequisite: FA 2202 or consent of instructor. A study of the architects, movements, and monuments which have determined the course of twentieth century architecture in the United States and Europe.
- FA 4265G Early Modern Art (1880-1920)** 3 cr.  
Prerequisite: FA 2202 or consent of instructor. Developments in painting and sculpture in Europe and the United States from the 1880s to 1920. Attention will be given to major styles and movements (including Symbolism, Neo-Impressionism, Fauvism, Cubism, Expressionism, and Dada) to individual artists and artworks, and to the development of the concepts of revolutionary modernism and the avant-garde, of the primitive in art, and of abstraction.
- FA 4266G Modernism at Mid-Century (1920-1960)** 3 cr.  
Prerequisite: FA 2202, 4265 or consent of instructor. Developments in painting and sculpture in Europe and the United States from 1920 to 1960. Attention will be given to major styles and movements (including Surrealism, Abstract Expressionism, Art Informel, Neo Dada), to individual artists and artworks, and to the instrumental roles of the historian, the critic, the curator, the marketplace, and political events in shaping late modern art.
- FA 4267G Contemporary Art: Postmodernism and Beyond (1960-present)** 3 cr.  
Prerequisite: FA 4266 or consent of instructor. Developments in the visual arts in the United States and Europe from 1960 to the present. Attention will be given to major styles and movements (including Pop, Minimalism, Performance, Environmental Art, Conceptual Art, Feminism, Neoexpressionism, Appropriation), to significant artists and critics, and to the historical and theoretical context in which the concept of Postmodernism has taken shape.

## Finance

- FIN 1330 Personal Finance** 3 cr.  
Offered each semester. (Not open to students enrolled in the College of Business Administration who have completed 30 semester hours or more of university credit.) Survey course that covers the following areas: a financial health program, budgeting, consumer protection, housing, insurance program, investment portfolio, other potential investments, taxes, and estate planning. The impact of personal finance on the economy will also be examined.
- FIN 2785 Introduction to Business and Economic Statistics** 3 cr.  
Offered each semester. Prerequisite: BA 2780, MATH 1115 or 1125 and 1140. Descriptive statistics including measures of location and dispersion; classical probability theory; statistical inference including sampling, point and interval estimation and hypothesis testing; time series; index numbers.
- FIN 2786 Intermediate Business and Economic Statistics** 3 cr.  
Prerequisite: BA 2780, MATH 2314 and concurrent enrollment in quantitative methods - QMBE 2787. Hypothesis testing; Chi-Squared distribution; analysis of variance; correlation; simple and multiple regression; non-parametric methods; forecasting.
- FIN 3099 Senior Honors Thesis** 1-6 cr.  
Offered each semester. Prerequisite: consent of department and Honors Program Director. Senior honors thesis under the direction of a faculty member. Section number will correspond with credit to be earned. Must be repeated for a total of six credit hours to be eligible to graduate with honors.
- FIN 3300 Principles of Financial Management** 3 cr.  
Offered each semester. Prerequisites: ECON 1203 or 1200. Introduction to investment, financing, and dividend decisions of business firms. Topics include valuation, capital budgeting, working capital management, capital structure and cost of capital, sources of financing, and dividend policy.
- FIN 3301 Small Business Finance** 3 cr.  
Prerequisite: FIN 3300. This course applies the skills of financial analysis to the particular problem of financing new ventures and existing small businesses. Specific topics covered include legal forms of organization and how they affect financing alternatives, ratio analysis, identifying and evaluating sources of small business financing, buying existing small businesses, financing growth and diversification, and dealing with bankruptcy and liquidation.

Emphasis is placed on the evaluation and preparation of financing packages for securing financing from banks, ventured capital investors and government agencies.

**FIN 3302 Investments** 3 cr.  
Offered each semester. Prerequisite: FIN 3300. Fundamental information regarding the organization, regulation, and performance of securities in the various markets and financial instruments.

**FIN 3303 Financial Institutions** 3 cr.  
Prerequisite: ECON 2221. Study of the impact of financial institutions on both the total level of economic activity and the allocation of funds to various sectors of the economy. Analysis of the intermediary process and the determination of interest rates in the financial markets.

**FIN 3321 Bank Administration** 3 cr.  
Prerequisites: ECON 2221 and FIN 3300. The financial management of the commercial bank from the perspective of senior management. An internal analysis of bank portfolio construction, bank capital structure, the lending function, and other decisions of the financial manager that affect the value of the bank.

**FIN 3355 Principles of Insurance** 3 cr.  
Offered each semester. Prerequisite: Junior standing. A course focused upon the consumer interest in an interdisciplinary approach to the subjects of pure risk and decision-making with emphasis upon planning family insurance programs. Principal topics include the impact on the family of economic risk, the private insurance mechanism, government benefit programs, and specific types of insurance coverage of importance to the family. Specific attention is focused upon such financial instruments as life insurance, health insurance, automobile insurance, and insurance for the home. Consumer issues related to the private insurance mechanism and government benefit programs are considered. The roles of economic facts and consumer attitudes in making decisions among alternatives also will be explored.

**FIN 3366 Income Property Analysis** 3 cr.  
Prerequisite: FIN 3300 or consent of department. A study of valuation and appraisal methods for commercial, industrial, residential, and other income properties. Included will be the problems of real estate development, redevelopment, and property taxation.

**FIN 3370 Residential Real Estate Development** 3 cr.  
Prerequisite: ECON 1203 and 1204. A survey of major topics in valuation of residential real estate. Topics include real estate valuation, supply and demand factors affecting land use, economics of land use, government and other external forces, affecting land use, planned unit development, historic properties, and major financial instruments.

**FIN 3392 Internship in Finance** 3 cr.  
Prerequisites: BA 2780, QMBE 2786, and FIN 3300 and consent of department. Student intern is engaged in ten hours per week at the site of an assigned participating organization which directs the intern in a specific research project. Students wishing to take this course should apply a semester in advance since enrollment is limited by internships available.

**FIN 3595 Academic Year Abroad: Special Topics in Finance** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck Austria and can be repeated once for credit.

**FIN 4200 Managerial Finance** 3 cr.  
Offered each semester. (May not be taken for graduate credit.) Prerequisite: FIN 3300. Emphasis on financial decision-making at the micro-financial level. Controller function: management of fixed and circulating capital, risk and uncertainty, role of leverage and

liquidity, and capital budgeting. Treasurer function: cash management, cost of capital analysis, dividend policy, and marketing new issues.

**FIN 4242 The Economics of State and Local Finance** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. This is a course designed to analyze the functions of state and local governments relating to the provision of public goods. The demand for and the supply of public goods as well as the production of these goods will be examined. Optimal methods of financing these government services will be investigated. The tax incidence and the equity of various financing forms will be presented. Grants-in-aid, revenue sharing, and other federal policies affecting intergovernmental relations in a federal system will also be analyzed.

**FIN 4301 Financial Theory** 3 cr.  
Offered each semester. Prerequisite: FIN 3300. Analysis of the financial theory of the business enterprise from the viewpoint of an internal decision-maker. In addition to the study of theories themselves, the course will cover empirical evidence as tests of theories. Topics to be covered will include: risk and uncertainty in investment and financial decisions, asset and security valuation theory, cost of capital and capital structure theory, dividend decisions, capital budgeting, and portfolio analysis. Students may not receive graduate credit for both FIN 4301 and FIN 6301.

**FIN 4305 Business Cycles and Forecasting** 3 cr.  
(ECON 4205 and FIN 4305 are cross-listed) Prerequisite: ECON 1203, 1204, and QMBE 2786. Univariate forecasting models; multiple time series model building. Applications to business trends and business cycles.

**FIN 4307 Portfolio Analysis** 3 cr.  
Prerequisite: FIN 3302 or 3306 or consent of department and FIN 4301. Demonstration of portfolio analysis techniques used by individuals and institutions. The course will utilize the computer to demonstrate and explore the various implications of portfolio analysis.

**FIN 4308 Speculative Markets: Options and Futures** 3 cr.  
Prerequisite: FIN 3302 or consent of instructor. An examination of the organization structure of speculative markets and the performance of speculative assets. Topics include the institutional nature of options and futures markets; investment and hedging strategies; and the valuation of options on stocks, interest rates, and futures contracts as well as the analysis of commodity, interest rate, stock index, and foreign exchange futures prices.

**FIN 4322 The Money and Capital Markets** 3 cr.  
Prerequisite: ECON 2221. The money and capital markets their composition regulation and operations; their influence in modern business; sources and uses of funds; commercial paper; acceptances; bank loans; call loans; negotiable certificates of deposit; investment banking and the Securities and Exchange Commission; the open market functions and activities of the Federal Reserve System.

**FIN 4354 Property and Liability Insurance** 3 cr.  
Prerequisite: FIN 3355. A functional course in property and liability insurance including areas of underwriting, reinsurance, investment, financial statement analysis, mathematical concepts of rate-making and reserves, types of insurance carriers, policy analysis, and government and social policy implications.

**FIN 4355 Life and Health Insurance** 3 cr.  
Prerequisite: FIN 3355 or consent of department. Functions and uses of life and health insurance, contract analysis, legal aspects, mathematics of life and health insurance, selection and classification of life and health risks, industrial and other forms of life and health insurance, and business uses of life insurance. A significant part

of the course is the role and uses of life insurance in personal financial planning.

**FIN 4362 International Finance** 3 cr.  
(ECON 4262 and FIN 4362 are cross-listed) Prerequisite: ECON 1203 and 1204. This course examines the financial operations of the firm from an international point of view. It draws upon topics such as exchange rate determination, foreign exchange exposures (risks) for the multinational firm and techniques to hedge such exposures, international bond, equity and currency markets, trade documentation, and international capital budgeting. Students may not receive graduate credit for both ECON 4262, FIN 4362, and FIN 6367.

**FIN 4370 Real Estate Feasibility and Site Location Analysis** 3 cr.  
Prerequisite: one of the following: FIN 2335, 3370, 3366, or 3368. A survey of the physical characteristics, market, economic, and financial considerations which enter into the decision process for selecting business locations; allocating land resources among a number of possible revenue producing uses, and analysis of locational considerations on the profitability of the firm. An extensive field research project is an integral part of the course.

**FIN 4391 Undergraduate Directed Individual Study** 3 cr.  
(ECON 4291 and FIN 4391 are cross-listed) Offered each semester. Prerequisites: Approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The student should refer to the College of Business Administration Policy On Undergraduate Directed Individual Study available in the Department of Economics and Finance. This course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and a research paper are required. May be repeated.

**FIN 4696 Washington Center Internship** 3-6 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).

**FIN 6300 Financial Administration** 3 cr.  
Offered each semester. Prerequisite: QMBE 2785, 2786 and FIN 3300 and credit for or concurrent registration in ACCT 6130. Study of advanced principles and practices in the administration of the financial affairs of business enterprises. Emphasis is on efficient use of financial resources, evaluation of investment project capital budgeting, and maintenance of credit-worthiness.

**FIN 6302 Investments** 3 cr.  
Prerequisite: FIN 6300 or 6301. The course provides an analysis of such topics as portfolio theory, capital asset pricing models, Arbitrage Pricing Theory, efficient capital market theory, option pricing theory, futures contracts and markets, and the securities market.

**FIN 6321 Commercial Bank Management** 3 cr.  
Prerequisites: ECON 2221 and FIN 3300. An examination of the role of commercial banking in the economy and advanced theoretical and applied analysis of commercial bank management.

**FIN 6333 Real Estate Finance and Market Feasibility Analysis** 3 cr.  
Prerequisite: one of the following: FIN 6300, URBN 6165, FIN 3366, FIN 3368 or the consent of the department. A survey of the physical characteristics and the market, economic, and financial

considerations which enter into the decision process for selecting business locations. Addresses the allocation of land resources among a number of possible revenue-producing uses and the impact of location considerations on the profitability of the firm. An extensive field research project is an integral part of the course.

**FIN 6355 Seminar in Risk Management and Insurance** 3 cr.  
Prerequisite: FIN 6300 or 6301. A comprehensive study of management of non-speculative risks in the business enterprise with emphasis on insurance as a tool. Topics covered include concepts of risk and insurance; risk analysis; treatment of risk control and financing; analysis of insurance contracts, group insurance and pensions; and investigation of insurance market.

**FIN 6391 Directed Individual Studies** 3 cr.  
Prerequisite: consent of department. This tutorial is arranged individually in order to provide latitude for specialized study and research. May be repeated for credit.

**FIN 6635 Seminar in Financial and Economic Analysis for Real Estate** 3 cr.  
Prerequisites: FIN 6300 or 6301, or URBN 6165, or consent of the department. An intensive study of real estate appraisal and evaluation, supply and demand factors affecting land use, the economics of land use, taxes and land use decisions, government and other external forces affecting land use, real estate investment and development decisions, and property analysis for investment decisions.

**FIN 6670 Seminar in Mortgage Markets and Real Estate Finance** 3 cr.  
Prerequisites: FIN 6300 or 6301, or URBN 6165, or consent of the department. Topics in primary and secondary market behavior and underwriting, mortgage loan underwriting, mortgage futures and options, tax exempt mortgage funds, interim and development loan analysis, and cash flow analyses.

**FIN 7050 Dissertation Research** 1-9 cr.  
(ECON 7050 and FIN 7050 are cross-listed) Preparation of dissertation by Ph.D. candidate under direction of major professor and dissertation committee. Section number will correspond with credit to be earned. To be repeated for credit until dissertation is accepted.

**FIN 4200G Managerial Finance** 3 cr.  
Offered each semester. (May not be taken for graduate credit.) Prerequisite: FIN 3300. Emphasis on financial decision-making at the micro-financial level. Controller function: management of fixed and circulating capital, risk and uncertainty, role of leverage and liquidity, and capital budgeting. Treasurer function: cash management, cost of capital analysis, dividend policy, and marketing new issues.

**FIN 4242G The Economics of State and Local Finance** 3 cr.  
Prerequisite: Economics 1203, 1204, or 2200. This is a course designed to analyze the functions of state and local governments relating to the provision of public goods. The demand for and the supply of public goods as well as the production of these goods will be examined. Optimal methods of financing these government services will be investigated. The tax incidence and the equity of various financing forms will be presented. Grants-in-aid, revenue sharing, and other federal policies affecting intergovernmental relations in a federal system will also be analyzed.

**FIN 4301G Financial Theory** 3 cr.  
Offered each semester. Prerequisite: FIN 3300. Analysis of the financial theory of the business enterprise from the viewpoint of an internal decision-maker. In addition to the study of theories themselves, the course will cover empirical evidence as tests of theories. Topics to be covered will include: risk and uncertainty in investment and financial decisions, asset and security valuation theory,

cost of capital and capital structure theory, dividend decisions, capital budgeting, and portfolio analysis. Students may not receive graduate credit for both FIN 4301 and FIN 6301.

**FIN 4305G Business Cycles and Forecasting** 3 cr.  
(ECON 4205 and FIN 4305 are cross-listed) Prerequisite: ECON 1203, 1204, and QMBE 2786. Univariate forecasting models; multiple time series model building. Applications to business trends and business cycles.

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Prerequisite: FIN 3302 or 3306 or consent of department and FIN 4301. Demonstration of portfolio analysis techniques used by individuals and institutions. The course will utilize the computer to demonstrate and explore the various implications of portfolio analysis.

**FIN 4308G Speculative Markets: Options and Futures** 3 cr.  
Prerequisite: FIN 3302 or consent of instructor. An examination of the organization structure of speculative markets and the performance of speculative assets. Topics include the institutional nature of options and futures markets; investment and hedging strategies; and the valuation of options on stocks, interest rates, and futures contracts as well as the analysis of commodity, interest rate, stock index, and foreign exchange futures prices.

**FIN 4322G The Money and Capital Markets** 3 cr.  
Prerequisite: ECON 2221. The money and capital markets their composition regulation and operations; their influence in modern business; sources and uses of funds; commercial paper; acceptances; bank loans; call loans; negotiable certificates of deposit; investment banking and the Securities and Exchange Commission; the open market functions and activities of the Federal Reserve System.

**FIN 4354G Property and Liability Insurance** 3 cr.  
Prerequisite: FIN 3355. A functional course in property and liability insurance including areas of underwriting, reinsurance, investment, financial statement analysis, mathematical concepts of rate-making and reserves, types of insurance carriers, policy analysis, and government and social policy implications.

**FIN 4355G Life and Health Insurance** 3 cr.  
Prerequisite: FIN 3355 or consent of department. Functions and uses of life and health insurance, contract analysis, legal aspects, mathematics of life and health insurance, selection and classification of life and health risks, industrial and other forms of life and health insurance, and business uses of life insurance. A significant part of the course is the role and uses of life insurance in personal financial planning.

**FIN 4362G International Finance** 3 cr.  
(ECON 4262 and FIN 4362 are cross-listed) Prerequisite: ECON 1203 and 1204. This course examines the financial operations of the firm from an international point of view. It draws upon topics such as exchange rate determination, foreign exchange exposures (risks) for the multinational firm and techniques to hedge such exposures, international bond, equity and currency markets, trade documentation, and international capital budgeting. Students may not receive graduate credit for both ECON 4262, FIN 4362, and FIN 6367.

**FIN 4370G Real Estate Feasibility and Site Location Analysis** 3 cr.  
Prerequisite: one of the following: FIN 2335, 3370, 3366, or 3368. A survey of the physical characteristics, market, economic, and financial considerations which enter into the decision process for selecting business locations; allocating land resources among a number of possible revenue producing uses, and analysis of locational considerations on the profitability of the firm. An extensive field research project is an integral part of the course.

**FIN 4391G Undergraduate Directed Individual Study** 3 cr.  
(ECON 4291 and FIN 4391 are cross-listed) Offered each semester. Prerequisites: Approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The student should refer to the College of Business Administration Policy On Undergraduate Directed Individual Study available in the Department of Economics and Finance. This course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and a research paper are required. May be repeated.

**FIN 4696G Washington Center Internship** 3-6 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).

## French

**FREN 3002 Practical French Phonetics** 3 cr.  
Analysis of the phonetic system of French. Intensive practice in the language laboratory (ear training, transcription, and corrective exercises). A consideration of the problems of teaching French pronunciation to English-speaking students.

**FREN 3005 Romance Linguistics** 3 cr.  
(SPAN 3005 and FREN 3005 are cross-listed) Comparative study of the history, phonology, morphology, and syntax of the principal Romance languages.

**FREN 3090 Advanced Practical French** 3 cr.  
Prerequisite: completion of 12 hours of beginning and intermediate level of the four-skills French sequence FREN 1001, 1002, 2001, 2002, or equivalent credit. Intensive instruction in the French language taught in France or in a French-speaking country and open only to students in the UNO-Montpellier Summer School or similar programs. Particular emphasis is placed on oral proficiency, sociolinguistic competence, and cultural awareness.

**FREN 3191 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated, but combined credit may not exceed six semester hours.

**FREN 3192 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated, but combined credit may not exceed six semester hours.

**FREN 3193 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated, but combined credit may not exceed six semester hours.

**FREN 3199 Independent Work for Honors Students** 3 cr.  
Admission by consent of department and the Director of the University Honors Program. Directed research culminating in a written

- thesis to meet the requirements for graduation with Honors in French, and if appropriate, University Honors.
- FREN 3402 Masterpieces of French Literature in Translation** 3 cr.  
(Open to all students including French and French Education majors, for degree credit as an elective.) French works in translation are chosen each time for reading, analysis, and discussion.
- FREN 3501 French for Research and Graduate Students I** 2 cr.  
A half-semester accelerated and intensive course in French for those with little or no previous study of French, especially designed to develop reading ability. This course will not count toward satisfying the Liberal Arts language requirement. Credit will not be granted for this course and for FREN 1001-1002. Grades will be assigned on a Pass-Fail basis.
- FREN 3502 French for Research and Graduate Students II** 2 cr.  
Prerequisite: FREN 3501. A half-semester accelerated and intensive course in French especially designed to develop reading ability. This course will not count toward satisfying the Liberal Arts language requirement. Credit will not be granted for this course and for FREN 1001-1002. Grades will be assigned on a Pass-Fail basis.
- FREN 4015 History of the French Language** 3 cr.  
A general survey of the development of the French language from its beginnings to the present day with particular attention to the phonology, morphology, and syntax of Old French. Lectures, reports, and term paper.
- FREN 4031 Advanced French Conversation** 3 cr.  
Prerequisite: FREN 3031 or equivalent. Intensive practice in the spoken language: conversation, oral discussions, interpretations, and reports. Conducted in French.
- FREN 4041 Problems of Grammatical Analysis** 3 cr.  
Prerequisite: FREN 3041 or equivalent. Problems of grammatical analysis and contrastive stylistics are discussed on a basis that combines traditional approaches and more recent theories. Application in translation exercises, from and into French, and introduction to literary translation.
- FREN 4051 Business French** 3 cr.  
Prerequisite: Language proficiency at the 2002 level. Study of fundamental sentence structure and specialized terminology and idioms related to business needs and correspondence; practice in business correspondence; oral exposés and conversations dealing with standard business situations and French economy; and readings from current magazines in economics and international business.
- FREN 4110 Medieval French Literature** 3 cr.  
Readings in the principal genres from the beginnings to 1500: the epic, the Romance, lyric poetry, and didactic literature.
- FREN 4152 The French Novel** 3 cr.  
A study of the novel from the French Revolution to the First World War with emphasis on key authors of the different literary movements.
- FREN 4154 French Drama of the Nineteenth Century** 3 cr.  
A study of the major dramatists and dramatic movements of the nineteenth century in France.
- FREN 4156 French Nineteenth Century Poetry and Selected Prose** 3 cr.  
A study of the major poets and poetic movements of the nineteenth century in France and the major critical and historical writers and their theories.
- FREN 4162 French Novel of the Twentieth Century** 3 cr.  
An historical and textual study of the major French novelists of the twentieth century.
- FREN 4164 French Poetry and Drama of the Twentieth Century** 3 cr.  
An historical and textual study of the major French playwrights of the twentieth century.
- FREN 4166 French Poetry from Symbolism to the Present** 3 cr.  
A study of the major movements in French poetry in the late nineteenth and twentieth centuries including Symbolism, Cubism, and the *esprit nouveau*, Dada, Surrealism, and the poetry of World War II and after.
- FREN 4202 French Civilization II** 3 cr.  
A continuation of FREN 4201 stressing the cultural history of France from the Renaissance to the present day. Readings and discussions in French.
- FREN 4265 Contemporary French Culture** 3 cr.  
Study of French intellectual and cultural life today: social, economic, and geographical factors; the country and its people; changing trends in contemporary French society and attitudes. Conducted in French.
- FREN 4400 Children's Literature in French** 3 cr.  
A study of the cultural heritage of stories songs rhymes and games. Selection evaluation and use of books and materials for children.
- FREN 6001 French Stylistics** 3 cr.  
The pragmatic aspects of the French language, i.e., those aspects which go beyond the basic structures (grammatical and lexical) to account for the functioning of a verbal system of communication in a social context. Topics to be studied include stylistic functions of language, stylistic levels, and "sociolects" (elegant versus popular, technical versus argotic), denotation versus connotation, subjectivity in language, speech acts, clichés, and figures of speech.
- FREN 6003 French "Commentaire De Texte"** 3 cr.  
The theory behind and practice in the French method of "commentaire de texte" textual exegesis. In addition to purely literary texts, the method will be applied to the analysis of historical and cultural documents.
- FREN 6007 French Linguistics** 3 cr.  
Advanced study of French phonology, syntax, and semantics within the framework of recent linguistic models, including consideration of solution of major descriptive problems proposed from at least 1900 to the present.
- FREN 6041 Theory and Practice of Translation** 3 cr.  
Advanced aspects of French are illustrated practically through translations selected from the French press, modern colloquial French fiction, and historical literary works. Practical work is complemented by the study of writings of well-known French authors on problems of translation.
- FREN 6097 Studies in French Linguistics** 3 cr.  
May be repeated once for credit.
- FREN 6190 Studies in Medieval French Literature** 3 cr.  
May be repeated once for credit.
- FREN 6191 Studies in French Renaissance Literature** 3 cr.  
May be repeated once for credit.
- FREN 6192 Studies in Seventeenth-Century French Literature** 3 cr.  
May be repeated once for credit.
- FREN 6193 Studies in Eighteenth-Century French Literature** 3 cr.  
May be repeated once for credit.
- FREN 6194 Studies in Nineteenth-Century French Literature** 3 cr.  
May be repeated once for credit.
- FREN 6195 Studies in Twentieth-Century French Literature** 3 cr.  
May be repeated once for credit.

- FREN 6197 Studies in French Literature** 3 cr.  
May be repeated once for credit.
- FREN 6205 French Thought** 3 cr.  
Intellectual history of France. Study of selected texts on the literature of ideas (political and social thought, science, religion and philosophy, and literary movements).
- FREN 6265 Contemporary French Society and Institutions** 3 cr.  
This course involves the study of aspects of contemporary French society. It focuses on the most recent developments on the French ideological and cultural scene.
- FREN 6295 Studies in French Culture and Civilization** 3 cr.  
May be repeated once for credit.
- FREN 6397 Directed Study** 3 cr.  
Readings, conferences, reports, and a research paper under the direction of a member of the graduate faculty. May be repeated once for credit.
- FREN 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- FREN 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- FREN 4015G History of the French Language** 3 cr.  
A general survey of the development of the French language from its beginnings to the present day with particular attention to the phonology, morphology, and syntax of Old French. Lectures, reports, and term paper.
- FREN 4031G Advanced French Conversation** 3 cr.  
Prerequisite: FREN 3031 or equivalent. Intensive practice in the spoken language: conversation, oral discussions, interpretations, and reports. Conducted in French.
- FREN 4041G Problems of Grammatical Analysis** 3 cr.  
Prerequisite: FREN 3041 or equivalent. Problems of grammatical analysis and contrastive stylistics are discussed on a basis that combines traditional approaches and more recent theories. Application in translation exercises, from and into French, and introduction to literary translation.
- FREN 4051G Business French** 3 cr.  
Prerequisite: Language proficiency at the 2002 level. Study of fundamental sentence structure and specialized terminology and idioms related to business needs and correspondence; practice in business correspondence; oral exposés and conversations dealing with standard business situations and French economy; and readings from current magazines in economics and international business.
- FREN 4110G Medieval French Literature** 3 cr.  
Readings in the principal genres from the beginnings to 1500: the epic, the Romance, lyric poetry, and didactic literature.
- FREN 4152G The French Novel** 3 cr.  
A study of the novel from the French Revolution to the First World War with emphasis on key authors of the different literary movements.
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A study of the major dramatists and dramatic movements of the nineteenth century in France.
- FREN 4156G French Nineteenth Century Poetry and Selected Prose** 3 cr.  
A study of the major poets and poetic movements of the nineteenth century in France and the major critical and historical writers and their theories.
- FREN 4162G French Novel of the Twentieth Century** 3 cr.  
An historical and textual study of the major French novelists of the twentieth century.
- FREN 4164G French Poetry and Drama of the Twentieth Century** 3 cr.  
An historical and textual study of the major French playwrights of the twentieth century.
- FREN 4166G French Poetry from Symbolism to the Present** 3 cr.  
A study of the major movements in French poetry in the late nineteenth and twentieth centuries including Symbolism, Cubism, and the *esprit nouveau*, Dada, Surrealism, and the poetry of World War II and after.
- FREN 4202G French Civilization II** 3 cr.  
A continuation of FREN 4201 stressing the cultural history of France from the Renaissance to the present day. Readings and discussions in French.
- FREN 4265G Contemporary French Culture** 3 cr.  
Study of French intellectual and cultural life today: social, economic, and geographical factors; the country and its people; changing trends in contemporary French society and attitudes. Conducted in French.
- FREN 4400G Children's Literature in French** 3 cr.  
A study of the cultural heritage of stories songs rhymes and games. Selection evaluation and use of books and materials for children.
- Geography**
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- GEOG 1001 World Regional Geography** 3 cr.  
Offered each semester. The nations of Europe (including the Soviet Union) and the Americas; emphasis on the analysis of physical and cultural relationships and interactions between countries in time and space.
- GEOG 1002 World Regional Geography** 3 cr.  
Offered each semester. The nations of Asia and Africa; emphasis on the analysis of physical and cultural relationships and interactions between countries in time and space.
- GEOG 1500 Elements of Geography** 3 cr.  
A survey of the basic concepts in physical and cultural geography.
- GEOG 1600 Environmental Geography** 3 cr.  
An analysis of the interactions between humankind and the world's physical environments which have led to present-day environmental stresses. Topics include the utilization of resources, population growth, food supplies, energy, and air and water pollution.
- GEOG 1690 Other People, Other Places** 1 cr.  
An examination of changing landscapes. Topics will vary each semester. Most topics will emphasize man's impact on his environment; other topics will stress the natural environment. Two hours of lecture per week for one-half semester.
- GEOG 2151 Elements of Physical Geography** 3 cr.  
An examination of the fundamentals of the natural landscape and their interactions. Includes weather and climate processes, world climate patterns, soil and vegetation types, and landforming processes.

- GEOG 2158 Conservation** 3 cr.  
An analysis of the basic principles of the conservation of the natural resources of the world. Emphasis will be placed on the United States.
- GEOG 2254 Elements of Economic Geography** 3 cr.  
Examination of factors influencing the location of economic activities with individual treatment of the primary, secondary, and tertiary sectors, and analysis of transportation and regional development problems.
- GEOG 2356 Cultural Geography** 3 cr.  
A consideration of cultural factors which influence the human use of the environment; emphasis on resulting patterns of settlement, resource utilization, and landscape modification.
- GEOG 2401 Geography of Louisiana** 3 cr.  
An examination of the physical and cultural landscapes of Louisiana. Emphasis placed upon the geographical implications of the state's varied cultural heritage. A sampling of topics includes Acadian settlement, rural folk housing, folk occupations, and the evolution of the New Orleans urban landscape.
- GEOG 2402 Geography of the United States and Canada** 3 cr.  
The physical and cultural geography of the United States and Canada. Emphasis on the physical landscape, culture, land use, urbanization, and economic development.
- GEOG 2406 Geography of the U.S. South** 3 cr.  
A survey and analysis of the physical and cultural environments of the southern United States. Emphasis on the physical landscape, culture, land use, urbanization, and economic development.
- GEOG 2422 Geography of Western Europe** 3 cr.  
A survey and analysis of the physical, cultural, and economic environments of Europe excluding the states of the former Soviet Union.
- GEOG 2431 Geography of the Middle East** 3 cr.  
A survey and analysis of the physical and cultural environment of the Middle East. Emphasis on physical landscape, land use, and economic and political development.
- GEOG 2801 Quantitative Methods in Geography** 3 cr.  
Prerequisites: Mathematics 1111 and three hours of statistics or consent of department. An introduction to quantitative methods and models used in analyzing geographic problems.
- GEOG 2810 Map Reading and Interpretation** 3 cr.  
Basic introduction to the skills and reasoning ability needed to appreciate and use maps as research tools and illustrative devices. Emphasis on reading and geographic analysis of U.S. topographic maps. Two hours lecture and two hours laboratory per week.
- GEOG 3390 Special Topics in Cultural Geography** 3 cr.  
Prerequisite: GEOG 2356 or consent of department. The examination of selected regions and social institutions to illustrate the manner in which the geographer achieves an understanding of the man-land relationship. Topics will vary from semester to semester. May be repeated once for credit.
- GEOG 3490 Special Topics in Physical Geography** 3 cr.  
Prerequisite: GEOG 2151 or consent of department. An examination of selected topics in physical geography. Designed to provide an in-depth examination of specific features of the physical landscape and to analyze the manner in which man has altered the natural environment. Topics will vary from semester to semester. May be repeated once for credit.
- GEOG 3595 Academic Year Abroad: Special Topics in Geography** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.
- GEOG 3822 Geomorphology** 3 cr.  
A study of land forms and the processes that have shaped the natural landscape. A study of the physical geography and geology of the United States through maps and aerial photographs is undertaken in the laboratory. Two hours of lecture and three hours of laboratory.
- GEOG 3850 Geography Internship** 3 cr.  
Prerequisite: consent of department. Each semester the department makes available internships with the City of New Orleans and other government agencies in the metropolitan area. Internships provide the opportunity to learn about geography from the perspective of the participating agency. This course may be repeated once for credit for a total of six hours.
- GEOG 3895 Senior Honors Thesis** 1-6 cr.  
Prerequisites: consent of department and the director of the Honors Program. The design and written preparation under faculty supervision of a major geographic research project. May be repeated for up to a total of six credits. Section number will correspond with credit to be carried.
- GEOG 4158 Environmental Impact Assessment** 3 cr.  
Prerequisites: GEOG 2151; and BIOS 1073 and 1083, or BIOS 1053 and 1063, or consent of department. Three hours of statistics are recommended. The course addresses the legal framework and provisions of environmental impact statement preparation as prescribed by the National Environmental Policy Act of 1969 and subsequent legislation and guidelines. Methodologies are considered for both analyzing and evaluating human impacts on the natural environment.
- GEOG 4220 Agricultural Geography** 3 cr.  
Prerequisite: three hours of geography or consent of department. An examination of physical, historical, and cultural factors influencing agricultural production in both industrialized and developing nations with emphasis on case studies representative of diverse agricultural systems. Topics include soil, water, and climatic regulators, small-scale subsistence systems versus mechanized Green-Revolution farming, tropical diets and nutritional diseases, promising new agricultural products and technologies, and home gardening as intensive agriculture.
- GEOG 4230 Geography of Manufacturing** 3 cr.  
A survey and analysis of the spatial dimension of manufacturing activities, including an examination of location factors, theories of location, and contemporary trends in the location of North American manufacturing. ECON 2203 is recommended.
- GEOG 4290 Special Topics in Economic Geography** 3 cr.  
Prerequisite: GEOG 2254 or consent of department. An examination of selected topics in economic geography designed to illustrate the manner in which man has changed and organized the earth's surface. Topics will vary from semester to semester. May be repeated once for credit.
- GEOG 4310 Political Geography** 3 cr.  
Examination of the spatial structure of the state spatial interactions among states, geopolitical theories, law of the sea, electoral patterns within the United States, and urban political geography.
- GEOG 4320 Tropical Lands and Their Utilization** 3 cr.  
The varying utilizations of savanna and rainforest environments by different cultural groups at different times and places; problems of human adaptation to tropical lands; emphasis on South America.

- GEOG 4513 Meteorology** 3 cr.  
Prerequisite: GEOG 2151 or consent of department. An examination and analysis of the elements of weather and the techniques and problems of weather forecasting.
- GEOG 4514 Climatology** 3 cr.  
Prerequisite: GEOG 2151 or consent of department. An analysis of climatic processes and their organization into regional patterns. Also includes inter-relationships among climate, vegetation, soils and landforms, applications of climatic information, and climatic modification and change.
- GEOG 4530 Biogeography** 3 cr.  
A study of the origin distribution adaptation and association of biota (plants and animals) emphasizing geographical relationships. Plant communities are correlated with climate and soil on a world-wide basis. Methods of dispersal and migration are studied along with past geological events that have affected biotic distribution.
- GEOG 4540 Biogeography of Birds** 3 cr.  
Prerequisite: GEOG 2151 or 4530 or consent of department. This course will investigate bird distribution patterns and resource use patterns on several spatial scales. Broad geographic patterns will be discussed, including patterns of migration and avian zoogeography. Distributional patterns will be interpreted in terms of the habitat use and behavior of birds at different stages in their annual cycles. Field observations of species nesting around the UNO campus will be incorporated to complement lecture information.
- GEOG 4550 Geography of Coastal Environments** 3 cr.  
A study of the coastal areas of the world as natural environments, as resources, and as human habitats. Topics covered will include the geomorphology of coasts, coastal oceanography, coastal resources, prehistoric and modern human settlement patterns, the coast as an environmental hazard, and coastal zone management. A substantial amount of time will be devoted to Southern Louisiana.
- GEOG 4610 Urban Geography** 3 cr.  
Prerequisite: three hours of geography or consent of department. An analysis of the origin and diffusion of cities, their internal arrangement, and external relations and the problems associated with urban living.
- GEOG 4620 Geography of the Western City** 3 cr.  
Prerequisite: three hours of geography or consent of department. Examination of the spatial patterns of urban evolution in Europe and North America. Emphasis on the form, function, and connectivity of Western cities from classical times to the present.
- GEOG 4630 Geography of the Third World City** 3 cr.  
Prerequisite: three hours of geography or consent of department. Geographic analysis of urbanism as a way of life and the physical processes of urbanization in the Third World developing countries.
- GEOG 4768 Selected Geographic Concepts for Teachers and Prospective Teachers** 3 cr.  
This course is designed to provide teachers and prospective teachers with a basic understanding and working knowledge of selected geographic concepts and skills. Topics include map use and interpretation, weather and storms, world climates, landforms, human ecology and pollution, reserves and utilization of natural resources, population growth, and Third World economic development and urbanization.
- GEOG 4801 Advanced Quantitative Methods in Geography** 3 cr.  
Prerequisite: GEOG 2801 or consent of department. An advanced course in the analysis of geographic data, focusing on the refinement of research design skills, the use of multivariate statistical techniques, and the application of commonly employed geographic sampling procedures in spatial and environmental analysis.
- GEOG 4833 Terrestrial Plant Ecology** 3 cr.  
(BIOS 4833 and GEOG 4833 are cross-listed). Prerequisite: BIOS 3653 or GEOG 4530, GEOG 2801 or BIOS 4003, or their equivalent, or consent of department. A broad overview of the specialized branches of plant ecology which will examine the essential interactions between plants and their environment. The focus of the course will be threefold: first, theoretical considerations providing students a solid background from which to examine plant environment interactions; second, the dynamic processes that continually shape the structure of plant communities; third, methodologies for sampling and analyzing plant communities. At least two field trips can be anticipated.
- GEOG 4901 Field Methods in Geography** 4 cr.  
Prerequisites: nine hours of geography including GEOG 2801 or equivalent and consent of department. Techniques of geographic field research. Projects will emphasize methods of gathering and organizing field data and subsequent geographical analysis of collected data. Two hours of lecture and six hours of laboratory.
- GEOG 4991 Independent Work in Geography** 1 cr.  
Prerequisite: admission by consent of department. Independent research under the direction of a designated faculty member. Regular conferences between the student and the instructor are required. GEOG 4991, 4992, 4993 may not be taken for a total of more than six hours credit. In no case may a student register in GEOG 3850 and 4991 through 4993 for a total of more than nine hours credit.
- GEOG 4992 Independent Work in Geography** 1 cr.  
Prerequisite: admission by consent of department. Independent research under the direction of a designated faculty member. Regular conferences between the student and the instructor are required. GEOG 4991, 4992, 4993 may not be taken for a total of more than six hours credit. In no case may a student register in GEOG 3850 and 4991 through 4993 for a total of more than nine hours credit.
- GEOG 4993 Independent Work in Geography** 1 cr.  
Prerequisite: admission by consent of department. Independent research under the direction of a designated faculty member. Regular conferences between the student and the instructor are required. GEOG 4991, 4992, 4993 may not be taken for a total of more than six hours credit. In no case may a student register in GEOG 3850 and 4991 through 4993 for a total of more than nine hours credit.
- GEOG 6001 Problems in Land Use and Environmental Analysis** 1 cr.  
Required of all master of arts in geography students. Examination of procedures and concepts important to the geographical analysis of human and environmental resources focusing on land resources. Topics include spatial analysis of rural and urban land use patterns, environmental consequences of land use decisions, and the role of environmental perception in land use decision-making behavior.
- GEOG 6310 Seminar in Regional Geography** 3 cr.  
Prerequisite: consent of instructor. Advanced analysis of the geography of a specific region. Region emphasized will vary depending on instructor. Course may be repeated once for credit.
- GEOG 6330 Seminar in Cultural Historical Geography** 3 cr.  
Prerequisite: consent of instructor. Intensive study of a topic in cultural and/or historical geography. Topic emphasized will vary depending on instructor. Seminar may be repeated once for credit.
- GEOG 6530 Seminar in Environmental Geography** 3 cr.  
Prerequisite: Geography 4158 and 4801 or consent of department. Intensive research into selected topics, including but not limited to

- environmental processes, human-environment interactions, environmental impact assessment, ecological risk analysis, and public policy making. Focus on the course will vary depending on instructor. Seminar may be repeated once for credit.
- GEOG 6550 Seminar in Physical Geography** 3 cr.  
Prerequisite: Geography 4801 or equivalent, and consent of instructor. Intensive study of selected problems in soils analysis, climatology, bioclimatology, plant geography, zoogeography, and geographical ecology. Area of study will vary depending on the instructor. Seminar may be repeated once for credit.
- GEOG 6605 Seminar in Land Use Analysis** 3 cr.  
(GEOG 6605 and URBN 6605 are cross-listed) Prerequisite: Geography 6001 or consent of department. Intensive research into selected rural and/or urban land-use problems in their environmental and historical contexts. Course may be repeated once for credit.
- GEOG 6820 Seminar in Remote Sensing** 3 cr.  
Prerequisite: GEOG 4820 or consent of department. Intensive research into the theories and techniques of digital image processing at advanced level. Application of satellite remote sensing technology and analysis to real world problems, including image preprocessing, image enhancement, supervised and unsupervised classification, change detection, classification accuracy assessment, and methods of interfacing remote sensing derived information with geographic information systems. Seminar may be repeated once for credit.
- GEOG 6825 Seminar in Geographical Information Systems** 3 cr.  
Prerequisite: Geography 4830 or consent of department. Intensive research into the theories and programming design techniques of Geographic Information Systems and their application to real world problems. This includes data gathering and management, network analysis, map projections and coordinate management, image integration, Dynamic segmentation, address geocoding, surface modeling, map display and query, and managing tabular data. Seminar may be repeated once for credit.
- GEOG 6887 Geographic Thought and Research Methods** 3 cr.  
Required of all Master of Arts in Geography students. Historical evolution of geography as an academic discipline and professional career; geographic subfields and career opportunities; and principles of library research and scholarly writing.
- GEOG 6990 Directed Study** 3 cr.  
Enrollment with consent of department. Independent research in the graduate student's area of specialization under the direction of a designated member of the graduate faculty.
- GEOG 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond to credit to be earned.
- GEOG 7040 Examination of Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation.
- GEOG 4158G Environmental Impact Assessment** 3 cr.  
Prerequisites: GEOG 2151; and BIOS 1073 and 1083, or BIOS 1053 and 1063, or consent of department. Three hours of statistics are recommended. The course addresses the legal framework and provisions of environmental impact statement preparation as prescribed by the National Environmental Policy Act of 1969 and subsequent legislation and guidelines. Methodologies are considered for both analyzing and evaluating human impacts on the natural environment.
- GEOG 4220G Agricultural Geography** 3 cr.  
Prerequisite: three hours of geography or consent of department. An examination of physical, historical, and cultural factors influencing agricultural production in both industrialized and developing nations with emphasis on case studies representative of diverse agricultural systems. Topics include soil, water, and climatic regulators, small-scale subsistence systems versus mechanized Green-Revolution farming, tropical diets and nutritional diseases, promising new agricultural products and technologies, and home gardening as intensive agriculture.
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Prerequisite: GEOG 2254 or consent of department. An examination of selected topics in economic geography designed to illustrate the manner in which man has changed and organized the earth's surface. Topics will vary from semester to semester. May be repeated once for credit.
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Examination of the spatial structure of the state spatial interactions among states, geopolitical theories, law of the sea, electoral patterns within the United States, and urban political geography.
- GEOG 4320G Tropical Lands and Their Utilization** 3 cr.  
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- GEOG 4513G Meteorology** 3 cr.  
Prerequisite: GEOG 2151 or consent of department. An examination and analysis of the elements of weather and the techniques and problems of weather forecasting.
- GEOG 4514G Climatology** 3 cr.  
Prerequisite: GEOG 2151 or consent of department. An analysis of climatic processes and their organization into regional patterns. Also includes inter-relationships among climate, vegetation, soils and landforms, applications of climatic information, and climatic modification and change.
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Prerequisite: three hours of geography or consent of department. An analysis of the origin and diffusion of cities, their internal

- arrangement, and external relations and the problems associated with urban living.
- GEOG 4620G Geography of the Western City** 3 cr.  
Prerequisite: three hours of geography or consent of department. Examination of the spatial patterns of urban evolution in Europe and North America. Emphasis on the form, function, and connectivity of Western cities from classical times to the present.
- GEOG 4630G Geography of the Third World City** 3 cr.  
Prerequisite: three hours of geography or consent of department. Geographic analysis of urbanism as a way of life and the physical processes of urbanization in the Third World developing countries.
- GEOG 4768G Selected Geographic Concepts for Teachers and Prospective Teachers** 3 cr.  
This course is designed to provide teachers and prospective teachers with a basic understanding and working knowledge of selected geographic concepts and skills. Topics include map use and interpretation, weather and storms, world climates, landforms, human ecology and pollution, reserves and utilization of natural resources, population growth, and Third World economic development and urbanization.
- GEOG 4801G Advanced Quantitative Methods in Geography** 3 cr.  
Prerequisite: GEOG 2801 or consent of department. An advanced course in the analysis of geographic data, focusing on the refinement of research design skills, the use of multivariate statistical techniques, and the application of commonly employed geographic sampling procedures in spatial and environmental analysis.
- GEOG 4833G Terrestrial Plant Ecology** 3 cr.  
(BIOS 4833 and GEOG 4833 are cross-listed). Prerequisite: BIOS 3653 or GEOG 4530, GEOG 2801 or BIOS 4003, or their equivalent, or consent of department. A broad overview of the specialized branches of plant ecology which will examine the essential interactions between plants and their environment. The focus of the course will be threefold: first, theoretical considerations providing students a solid background from which to examine plant environment interactions; second, the dynamic processes that continually shape the structure of plant communities; third, methodologies for sampling and analyzing plant communities. At least two field trips can be anticipated.
- GEOG 4901G Field Methods in Geography** 4 cr.  
Prerequisites: nine hours of geography including GEOG 2801 or equivalent and consent of department. Techniques of geographic field research. Projects will emphasize methods of gathering and organizing field data and subsequent geographical analysis of collected data. Two hours of lecture and six hours of laboratory.
- GEOG 4991G Independent Work in Geography** 1 cr.  
Prerequisite: admission by consent of department. Independent research under the direction of a designated faculty member. Regular conferences between the student and the instructor are required. GEOG 4991, 4992, 4993 may not be taken for a total of more than six hours credit. In no case may a student register in GEOG 3850 and 4991 through 4993 for a total of more than nine hours credit.
- GEOG 4992G Independent Work in Geography** 1 cr.  
Prerequisite: admission by consent of department. Independent research under the direction of a designated faculty member. Regular conferences between the student and the instructor are required. GEOG 4991, 4992, 4993 may not be taken for a total of more than six hours credit. In no case may a student register in GEOG 3850 and 4991 through 4993 for a total of more than nine hours credit.
- GEOG 4993G Independent Work in Geography** 1 cr.  
Prerequisite: admission by consent of department. Independent research under the direction of a designated faculty member. Regular conferences between the student and the instructor are required. GEOG 4991, 4992, 4993 may not be taken for a total of more than six hours credit. In no case may a student register in GEOG 3850 and 4991 through 4993 for a total of more than nine hours credit.
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- Geology**
- GEOL 1001 General Geology: Physical** 3 cr.  
Prerequisites: eligibility to enroll in ENGL 1157 or credit in English at the college level. A study of the structure and properties of materials composing the earth and processes which form and alter the crust including erosion igneous activity mountain building glaciation earthquakes and oceans. Credit in GEOL 1001 and/or 1003 and GEOL 1000 will not be allowed.
- GEOL 1002 General Geology:Historical** 3 cr.  
Offered each semester. Prerequisite: GEOL 1001. Evolutionary history of the earth including physical changes and an introduction to the record of life through time.
- GEOL 1003 Geology Laboratory** 1 cr.  
Prerequisite: credit or registration in GEOL 1001. Offered each semester. An introduction to working with geological materials. Distinction of rocks on the basis of physical properties and determination of how those properties can be used to predict behavior of various materials. Students are introduced to principles of mapping and geological laboratory and field observations. The course meets for three hours each week. Credit in both GEOL 1003 and GEOL 1000 will not be allowed.
- GEOL 1004 Geology Laboratory** 1 cr.  
Offered each semester. Prerequisite: GEOL 1003; concurrent enrollment in GEOL 1002 is recommended. A survey of the rocks maps and fossils used to unravel the history of earth and life. The course meets for three hours each week.
- GEOL 1005 Environmental Geology** 3 cr.  
A survey of the relationships between human populations and geological processes especially as they relate to the environment and natural resources.
- GEOL 1006 Dinosaurs** 3 cr.  
Prerequisite: eligibility for ENGL 1157. A lecture survey of dinosaurs and other extinct reptiles the theories about their life habits and evolution. Three hours of lecture a week.
- GEOL 1007 Geology of the National Parks** 3 cr.  
A study of geological processes which have shaped the landscapes of selected American National Parks and Monuments.
- GEOL 1900 Environmental Geology of Southeastern Louisiana** 1 cr.  
Prerequisites: GEOL 1001 and 1003. The geologic origin and history of southeastern Louisiana with special emphasis on the interaction of man and his physical environment. Two hours of lecture for one-half semester.
- GEOL 1920 Earth Materials** 1 cr.  
Prerequisites: GEOL 1001 and 1003. An introduction to the study of rocks and minerals and the principal physical and chemical conditions responsible for their formation. Two hours of lecture for one-half semester.
- GEOL 1927 Earth Resources** 1 cr.  
Prerequisites: GEOL 1001 and 1003. A look at the types distribution abundance and availability of mineral and energy resources and their influence on man. Two hours of lecture for one-half semester.

- GEOL 1940 The Oceans** 3 cr.  
Prerequisite: eligibility to enroll in MATH 1111 and ENGL 1157. An introduction to the marine environment and its physical chemical geological and biological processes. Three hours of lecture a week.
- GEOL 1952 The History of Life** 1 cr.  
Prerequisites: GEOL 1001 and 1003, or BIOS 1051 and 1053 (or 1071 and 1073). Origin and early development of life diversification of life and selected plant invertebrate and vertebrate evolutionary case histories. Two hours of lecture for one-half semester.
- GEOL 1956 The Meaning of Evolution** 1 cr.  
Prerequisites: GEOL 1001 and 1003, or BIOS 1051 and 1053 (or 1071 and 1073). An examination of the patterns of invertebrate and vertebrate evolution and the meaning they may have in terms of man's values and ethical standards and his possible destiny. Two hours of lecture for one-half semester.
- GEOL 1977 The Continental Drift Debate** 1 cr.  
Prerequisites: GEOL 1001 and 1003. Introduction to the scientific method in geology through the examination of the development of the theories of continental drift sea-floor spreading and plate tectonics. Two hours of lecture for one-half semester.
- GEOL 1980 Planetary Geology** 1 cr.  
Prerequisites: GEOL 1001 and 1003. A study of the structure origin and evolution of the planets their satellites and the asteroids. Two hours of lecture for one-half semester.
- GEOL 2000 History of Geology** 1 cr.  
Prerequisite: GEOL 1002 and 1004, or 1010 and 1011. An outline of the history and development of geology with emphasis on the period from the mid-eighteenth to the mid-nineteenth century. One hour of lecture.
- GEOL 2084 Introduction to Oceanography** 3 cr.  
Prerequisites: One of the following: GEOL 1001; BIOS 1051 or 1073; CHEM 1010, 1012, or 1017; or PHYS 1031 or 1061. Principles of physical and chemical properties of seawater ocean and atmospheric circulation; ocean influence on climate waves tides biological process and life in the sea; sedimentation processes and paleoceanography and global climate change.
- GEOL 2096 Special Topics in Geology** 1-3 cr.  
Prerequisite: consent of department. A lecture lecture-laboratory or seminar format will be used to discuss special topics in geology. The course content will vary from semester to semester.
- GEOL 2211 Principles of Paleontology** 3 cr.  
Fall semester. Prerequisites: GEOL 1002 and 1004, or GEOL 1010 and 1011 and credit or enrollment in BIOS 1071 and 1073. Study of ancient life as a geological and biological science. Lab will concentrate on invertebrates will also cover vertebrates and plants. Two hours of lecture three hours of laboratory and required field trip.
- GEOL 2255 Introductory Mineralogy and Crystallography** 3 cr.  
Fall semester. Prerequisites: GEOL 1001, 1003, CHEM 1017, MATH 1112, or consent of department. A study of crystal structure crystal chemistry mineral classification and mineral formation. Two hours of lecture and three hours of laboratory.
- GEOL 3090 Senior Thesis** 1-6 cr.  
Prerequisites: Senior status and written approval of the department and the supervising professor. Supervised research on some aspect of the geological sciences. Project must be completed as a written report and the final copy approved by adviser before the second semester's credit can be received. May be repeated for a total of six credits. Section number will correspond with credit to be earned.
- GEOL 3093 Regional Field Geology** 1 cr.  
Prerequisite: consent of department. An introduction to the regional stratigraphy structure and ore deposits of a geologically significant area. The area of study will vary from year to year and will be visited during a vacation break. These courses require a field service fee to cover transportation and incidentals and may not be taken concurrently.
- GEOL 3094 Regional Field Geology** 1 cr.  
Prerequisite: consent of department. An introduction to the regional stratigraphy structure and ore deposits of a geologically significant area. The area of study will vary from year to year and will be visited during a vacation break. These courses require a field service fee to cover transportation and incidentals and may not be taken concurrently.
- GEOL 3099 Senior Honors Thesis** 1-6 cr.  
Prerequisites: written consent of department professor(s) concerned and director of Honors Program. Approval of a written report and an oral defense of the thesis is required. Section number will correspond with credit to be earned. Must be repeated for a total of six credits.
- GEOL 3275 Igneous Petrology** 3 cr.  
Prerequisite: Geology 3300. The mode of origin and occurrence of igneous rocks and their study with the petrographic microscope. Two hours of lecture and three hours of laboratory per week.
- GEOL 3595 Academic Year Abroad: Special Topics in Geology** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck Austria and can be repeated once for credit.
- GEOL 3658 Introductory Geochemistry** 3 cr.  
Prerequisites: CHEM 1018 or 1011 and consent of department. Principles of chemistry applied to the study of geological materials and processes. Emphasis will be on isotope geochemistry thermodynamics crystal chemistry and petrogenesis.
- GEOL 3822 Geomorphology** 3 cr.  
A study of land forms and the processes that have shaped the natural landscape. A study of the physical geography and geology of the United States through maps and aerial photographs is undertaken in the laboratory. Two hours of lecture and three hours of laboratory.
- GEOL 4085 Quantitative Geology** 3 cr.  
Prerequisites: MATH 2112 and CSCI 1201 or equivalent experience. Analysis of quantitative geological data emphasizing computer-based procedures.
- GEOL 4096 Special Topics** 1-3 cr.  
Prerequisite: consent of department. A lecture lecture-laboratory or seminar format will be used to discuss special topics in geology. The course content will vary from semester to semester. Section number will correspond with credit to be earned.
- GEOL 4114 Introduction to Micropaleontology** 3 cr.  
Spring semester. Prerequisite: GEOL 2211 or consent of department. Systematics techniques of study life habits and geologic implications of microscopic fossils. Two hours of lecture and three hours of laboratory.
- GEOL 4161 Gulf Coast Geology** 3 cr.  
Fall semester. Prerequisites: GEOL 2110, 2130, 2150, or consent of department. Geology of the Gulf Coastal Plain and Gulf Basin including physiography stratigraphy structure and economic geology.
- GEOL 4336 Introduction to Carbonate Petrology** 3 cr.  
Prerequisite: GEOL 3300 or consent of department. Introduction to constituents depositional environments lithofacies and diagenesis

- of modern carbonate sediments and ancient carbonate rocks. Two hours of lecture and three hours of laboratory.
- GEOL 4557 Introductory X-Ray Crystallography** 2 cr.  
Fall semester. Prerequisites: GEOL 2300, MATH 2112, CHEM 1018, and consent of department. Introduction to the theory and techniques of X-ray analysis of crystalline materials. One hour of lecture and three hours of laboratory.
- GEOL 4659 Geochemical Thermodynamics** 3 cr.  
Prerequisites: CHEM 1018 or 1011 and MATH 2109 or 2112 or consent of department. Equilibrium thermodynamics for geologists. A basic background for understanding and using thermodynamic principles to solve geologic problems.
- GEOL 4660 Ore Deposits** 3 cr.  
Prerequisite: consent of department. The principles of the genesis of metallic and nonmetallic ore deposits. The distribution of ore deposits in space and time.
- GEOL 4830 Subsurface Geologic Methods** 3 cr.  
Fall semester. Prerequisites: GEOL 2100, 2130, 2150, and consent of department. Subsurface methods used in the study of the origin migration and accumulation of petroleum. Two hours of lecture and three hours of laboratory.
- GEOL 4850 Global Tectonics** 3 cr.  
Prerequisites: GEOL 2110, 2130 and 2150; MATH 2112 or 2109; GEOL 4810 or 4820 recommended; or consent of the department. Overview of plate tectonic principles with specific geologic applications. Geophysical characteristics of plate margins descriptions of plate motions and plate reconstructions. Geological characteristics of plate margins tectonic analysis of ancient plate margins and theories on the plate tectonic driving mechanism. Two hours of lecture and three hours of laboratory.
- GEOL 6090 Graduate Seminar** 1 cr.  
Offered each semester. Students and faculty will discuss their research work on timely topics in geology. Required each semester for graduate students in geology. One credit each semester to a maximum of three credits. One hour of lecture-discussion.
- GEOL 6096 Special Topics** 1-3 cr.  
Offered each semester. Prerequisite: consent of department. A lecture lecture/laboratory or seminar format will be used to discuss special topics in geology. The course content will vary from semester to semester. The section number will correspond with the credit to be earned.
- GEOL 6103 Advanced Paleontology** 3 cr.  
Prerequisite: consent of department. Understanding the basic principles of evolution and ecology through the study of fossil organisms. The use of fossils in historical interpretation. Two hours of lecture and three hours of laboratory.
- GEOL 6265 Recent Sedimentary Environments** 3 cr.  
Prerequisite: Geology 3265 or consent of department. A study of present-day continental shelf-coastal and oceanic environments emphasizing how understanding sedimentary processes can be used in developing lithofacies models. Three hours of lecture.
- GEOL 6337 Advanced Carbonate Petrology** 3 cr.  
Prerequisite: GEOL 4336. Analysis and interpretation of carbonate lithofacies and diagenetic fabrics. Two hours of lecture and three hours of laboratory.
- GEOL 6339 Basin Analysis** 3 cr.  
Prerequisites: GEOL 2288 and 3335 or consent of department. Tectonic classification of sedimentary basins; mechanisms of basin formation and subsidence; and depositional structural and thermal evolution of basins. Three hours of lecture.
- GEOL 6380 Advanced Stratigraphy of the Gulf Basin** 3 cr.  
Prerequisite: GEOL 4161 or consent of department. Mesozoic and Cenozoic stratigraphy of the Gulf basin; age origin and geologic history of the basin; occurrence of hydrocarbons with special emphasis on stratigraphic traps. Three hours of lecture.
- GEOL 6534 Clay Mineralogy** 3 cr.  
Fall semester. Prerequisite: consent of department. Clay minerals their petrology structure and methods of identification. Two hours of lecture and three hours of laboratory.
- GEOL 6658 Low-Temperature Geochemistry** 3 cr.  
Spring semester. Prerequisites: GEOL 4658 and CSCI 1060 or consent of department. Comprehensive study of chemical processes in geologic systems at temperatures and pressures from earth surface conditions through diagenesis (200EC and 1 kilobar). Emphasis will be placed on the use of equilibrium thermodynamics chemical kinetics diffusion and advection to explain reservoir diagenesis.
- GEOL 6665 Igneous Petrology** 3 cr.  
Prerequisite: consent of department. The physical-chemical principles governing the formation of igneous rocks. Petrographic and X-ray methods in petrology. Two hours of lecture and three hours of laboratory.
- GEOL 6666 Metamorphic Petrology** 3 cr.  
Prerequisite: consent of department. The mode of origin and occurrence of metamorphic rocks and their study with the petrographic microscope. Two hours of lecture and three hours of laboratory.
- GEOL 6710 Environmental Statistics** 3 cr.  
Prerequisites: MATH 2112 or consent of department. Applications of geostatistics to environmental problems. Extensive use of the U.S. Environmental Protection Agency's GEO-EAS and GEOPACK software for variogram analysis and kriging. Three hours lecture per week.
- GEOL 6820 Advanced Structure of the Gulf Basin** 3 cr.  
Prerequisite: GEOL 4161 or consent of department. Regional structural features of the Gulf basin; major positive and negative elements; active and passive salt tectonics; faulting and analysis of growth faults; origin and occurrence of normal and abnormal subsurface pressures. Three hours of lecture.
- GEOL 6830 Advanced Subsurface Geology** 3 cr.  
Spring semester. Prerequisite: GEOL 4830 or consent of department. Subsurface geology of the Central Gulf Coast Basin and analyses and evaluation of oil and gas prospects.
- GEOL 6888 Advanced Structural Geology** 3 cr.  
Prerequisites: GEOL 2288 and MATH 2109 or 2112 (recommended MATH 2511). Application of continuum mechanics to analysis of geologic structures. Emphasis is on quantitative assessment of structural problems but specific topics covered will depend upon the class' background and interests. Three lectures per week.
- GEOL 7000 Thesis Research** 1-9 cr.  
Offered each semester. By arrangement with the graduate adviser. Three hours of laboratory work per credit hour. Section number will correspond with credit to be earned. To be repeated for credit until thesis is accepted.
- GEOL 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.

- GEOL 4085G Quantitative Geology** 3 cr.  
Prerequisites: MATH 2112 and CSCI 1201 or equivalent experience. Analysis of quantitative geological data emphasizing computer-based procedures.
- GEOL 4096G Special Topics** 1-3 cr.  
Prerequisite: consent of department. A lecture lecture-laboratory or seminar format will be used to discuss special topics in geology. The course content will vary from semester to semester. Section number will correspond with credit to be earned.
- GEOL 4114G Introduction to Micropaleontology** 3 cr.  
Spring semester. Prerequisite: GEOL 2211 or consent of department. Systematics techniques of study life habits and geologic implications of microscopic fossils. Two hours of lecture and three hours of laboratory.
- GEOL 4161G Gulf Coast Geology** 3 cr.  
Fall semester. Prerequisites: GEOL 2110, 2130, 2150, or consent of department. Geology of the Gulf Coastal Plain and Gulf Basin including physiography stratigraphy structure and economic geology.
- GEOL 4336G Introduction to Carbonate Petrology** 3 cr.  
Prerequisite: GEOL 3300 or consent of department. Introduction to constituents depositional environments lithofacies and diagenesis of modern carbonate sediments and ancient carbonate rocks. Two hours of lecture and three hours of laboratory.
- GEOL 4557G Introductory X-Ray Crystallography** 2 cr.  
Fall semester. Prerequisites: GEOL 2300, MATH 2112, CHEM 1018, and consent of department. Introduction to the theory and techniques of X-ray analysis of crystalline materials. One hour of lecture and three hours of laboratory.
- GEOL 4659G Geochemical Thermodynamics** 3 cr.  
Prerequisites: CHEM 1018 or 1011 and MATH 2109 or 2112 or consent of department. Equilibrium thermodynamics for geologists. A basic background for understanding and using thermodynamic principles to solve geologic problems.
- GEOL 4660G Ore Deposits** 3 cr.  
Prerequisite: consent of department. The principles of the genesis of metallic and nonmetallic ore deposits. The distribution of ore deposits in space and time.
- GEOL 4830G Subsurface Geologic Methods** 3 cr.  
Fall semester. Prerequisites: GEOL 2100, 2130, 2150, and consent of department. Subsurface methods used in the study of the origin migration and accumulation of petroleum. Two hours of lecture and three hours of laboratory.
- GEOL 4850G Global Tectonics** 3 cr.  
Prerequisites: GEOL 2110, 2130 and 2150; MATH 2112 or 2109; GEOL 4810 or 4820 recommended; or consent of the department. Overview of plate tectonic principles with specific geologic applications. Geophysical characteristics of plate margins descriptions of plate motions and plate reconstructions. Geological characteristics of plate margins tectonic analysis of ancient plate margins and theories on the plate tectonic driving mechanism. Two hours of lecture and three hours of laboratory.
- Geophysics**
- GEOP 3261 Field Methods in Geophysics** 6 cr.  
(PHYS 3261 and GEOP 3261 are cross-listed) Prerequisites: PHYS 2064 and consent of instructor. Basic introduction to the application of geophysical field techniques. Includes collecting, processing, and interpreting gravity, magnetic, and seismic data. Practical experience in the conduct of geophysical surveys, operation of equipment, data reduction, and simple interpretation. Preparation of geophysical reports in the style normally used for published papers. Thirty-five hours of classroom work and field measurements per week during the summer session.
- GEOP 4381 Applied Seismic Data Acquisition and Processing** 3 cr.  
(PHYS 4381 and GEOP 4381 are cross-listed) Prerequisites: PHYS 4205, GEOP 4810 and MATH 2221 or consent of department. Basic acoustics and ray tracing; seismic data acquisition; CDP; noise analyses and arrays; physics of acoustic sources, measuring and recording instruments; demultiplexing; NMO and velocity analysis; statics; and introduction to deconvolution, filtering, and migration. Use of fundamental seismic data processing computer programs, graphics, and displays of seismic data; seismic data processing of field data. Two hours of lecture and two hours of computer laboratory per week.
- GEOP 4507 Gravity and Magnetism** 3 cr.  
(GEOP 4507 and PHYS 4507 are cross-listed) Prerequisites: GEOP 4810, PHYS 3301 or 4501, MATH 2221, or consent of department. Fundamentals of scalar potentials and analysis of vector fields as applied to geophysical problems in gravity and magnetism. Analytic properties of the earth's gravitational and magnetic fields in space and time. Modeling and interpretation of gravity and magnetic anomalies.
- GEOP 4610 Geophysical Exploration and Interpretation** 3 cr.  
Prerequisites: GEOL 2100 and PHYS 1062 or consent of department. A study of the fundamental methods of geophysical exploration and interpretation. To include geophysical principles of gravity magnetism and seismology in order to make better geological interpretation of geophysical data.
- GEOP 4805 Introduction to Earthquake Seismology** 3 cr.  
Prerequisites: GEOL 2100 and MATH 2221 or consent of department. A study of the effects of earthquakes on the environment efforts to predict earthquakes and the use of earthquake seismograms to map the interior of the Earth. Two hours of lecture and three hours of laboratory.
- GEOP 4810 Introduction to Geophysics** 3 cr.  
Spring semester. Prerequisites: GEOL 2100, and PHYS 1063. A study of the fundamental methods of geophysics. Emphasis is placed on seismic gravity and magnetic methods and their use in geophysical exploration. Two hours of lecture and three hours of laboratory.
- GEOP 4820 Earth Physics** 3 cr.  
Prerequisites: PHYS 1063 and MATH 2112. A study of the physics of the earth in relation to the earth's origin evolution and existing structure. To include such topics as earthquake seismology isostasy radioactive dating heat flow and the earth's gravity and magnetic field.
- GEOP 4835 Seismic Stratigraphy** 2 cr.  
Prerequisite: GEOP 4810 or consent of department. Interpretation of stratigraphy from seismic records. Analysis of unconformities environments of deposition and local and world-wide sea level curves. Two hours of lecture/discussion.
- GEOP 4840 Exploration Seismology** 3 cr.  
Prerequisites: MATH 2109 or 2112; PHYS 1061; GEOL 2110, 2130, and 2150. Application of physical principles to naturally deformed rocks and overview of modern structural geology. Quantitative applications to solve geologic problems practical exercises in rock mechanics determination of finite strain advanced cross-section construction techniques and methods of kinematic analysis. Three hours of lecture per week.
- GEOP 6810 Geophysical Data Processing** 3 cr.  
Prerequisites: GEOP 4840, CSCI 1060, MATH 2221, and PHYS 4205 or MATH 4213 or consent of department. Transforms one-sided

functions spectral factorization resolution matrices and multi-channel time series data modeling by least squares waveform applications of least squares layers revealed by scattered wave filtering and mathematical physics in stratified media.

**GEOP 6840 Reflection Seismology** 3 cr.  
Prerequisites: GEOP 4840, CSCI 1060, MATH 2221, and PHYS 4205 or MATH 4213 or consent of department. Seismic velocity synthetic seismogram filtering convolution and deconvolution of seismic data; migration for the delineation of geological structures; and geophysical Inverse Theory for determining lithology.

**GEOP 4381G Applied Seismic Data Acquisition and Processing** 3 cr.  
(PHYS 4381 and GEOP 4381 are cross-listed) Prerequisites: PHYS 4205, GEOP 4810 and MATH 2221 or consent of department. Basic acoustics and ray tracing; seismic data acquisition; CDP; noise analyses and arrays; physics of acoustic sources, measuring and recording instruments; demultiplexing; NMO and velocity analysis; statics; and introduction to deconvolution, filtering, and migration. Use of fundamental seismic data processing computer programs, graphics, and displays of seismic data; seismic data processing of field data. Two hours of lecture and two hours of computer laboratory per week.

**GEOP 4507G Gravity and Magnetism** 3 cr.  
(GEOP 4507 and PHYS 4507 are cross-listed) Prerequisites: GEOP 4810, PHYS 3301 or 4501, MATH 2221, or consent of department. Fundamentals of scalar potentials and analysis of vector fields as applied to geophysical problems in gravity and magnetism. Analytic properties of the earth's gravitational and magnetic fields in space and time. Modeling and interpretation of gravity and magnetic anomalies.

**GEOP 4610G Geophysical Exploration and Interpretation** 3 cr.  
Prerequisites: GEOL 2100 and PHYS 1062 or consent of department. A study of the fundamental methods of geophysical exploration and interpretation. To include geophysical principles of gravity magnetism and seismology in order to make better geological interpretation of geophysical data.

**GEOP 4805G Introduction to Earthquake Seismology** 3 cr.  
Prerequisites: GEOL 2100 and MATH 2221 or consent of department. A study of the effects of earthquakes on the environment efforts to predict earthquakes and the use of earthquake seismograms to map the interior of the Earth. Two hours of lecture and three hours of laboratory.

**GEOP 4810G Introduction to Geophysics** 3 cr.  
Spring semester. Prerequisites: GEOL 2100, and PHYS 1063. A study of the fundamental methods of geophysics. Emphasis is placed on seismic gravity and magnetic methods and their use in geophysical exploration. Two hours of lecture and three hours of laboratory.

**GEOP 4820G Earth Physics** 3 cr.  
Prerequisites: PHYS 1063 and MATH 2112. A study of the physics of the earth in relation to the earth's origin evolution and existing structure. To include such topics as earthquake seismology isostasy radioactive dating heat flow and the earth's gravity and magnetic field.

**GEOP 4835G Seismic Stratigraphy** 2 cr.  
Prerequisite: GEOP 4810 or consent of department. Interpretation of stratigraphy from seismic records. Analysis of unconformities environments of deposition and local and world-wide sea level curves. Two hours of lecture/discussion.

**GEOP 4840G Exploration Seismology** 3 cr.  
Prerequisites: MATH 2109 or 2112; PHYS 1061; GEOL 2110, 2130, and 2150. Application of physical principles to naturally deformed rocks

and overview of modern structural geology. Quantitative applications to solve geologic problems practical exercises in rock mechanics determination of finite strain advanced cross-section construction techniques and methods of kinematic analysis. Three hours of lecture per week.

## German

**GER 3002 German Phonetics** 3 cr.  
Analysis of German phonetic principles with extensive practice and corrective drill in the language laboratory and with special reference to the teaching of German pronunciation to English-speaking students.

**GER 3015 History of the German Language** 3 cr.  
A study of the position of German among the Indo-European languages and the development of German from the time of its first written records. Special attention to a comparison of the development of German with that of English. Examination of illustrative passages in various Teutonic languages and dialects. Etymological studies.

**GER 3102 The German Novelle** 3 cr.  
Prerequisite: GER 3042. History and theory of this genre with extensive readings illustrative of its stages of development from Goethe to Thomas Mann.

**GER 3106 German Lyric Poetry** 3 cr.  
Prerequisite: GER 3100 or 3101 or consent of department. A study of selected poems with emphasis on representative authors of the different literary periods.

**GER 3144 Schiller: His Theoretical and Literary Works** 3 cr.  
Readings, lectures, and discussions.

**GER 3145 Lessing and His Age** 3 cr.  
The history of the Enlightenment from Gottsched to Lessing with readings in various works of the Enlightenment; emphasis on Lessing's dramas and theoretical works.

**GER 3150 The Romantic Movement in Germany** 3 cr.  
A study of the Romantic writers in Germany from Novalis to Heine with emphasis on the cultural, philosophical, and political background of the Romantic Movement.

**GER 3155 German Realism** 3 cr.  
Prerequisite: GER 2042. Poetic realism, political literature, Biedermeier, and the dramas of Grabbe, Grillparzer, and Heibel, including a study of the philosophical and historical background of the period.

**GER 3160 Twentieth Century Literature: Naturalism and Expression** 3 cr.  
A study of these movements and their related and unrelated aspects with emphasis on representative writers such as Hauptmann, Wedekind, Kaiser, Kafka, Brecht, and others.

**GER 3165 20th Cent Lit: Impressionism and Subsequent Trends** 0 cr.  
A study of the characteristics of these movements, emphasizing representative writers such as George, Hofmannsthal, Rilke, Schnitzler, Hesse, Mann, Durrenmatt, and others.

**GER 3180 German Literature Since 1945** 3 cr.  
A study of contemporary trends in East and West German literature with extensive readings of representative works.

**GER 3191 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered

in the departmental courses. Each course may be repeated, but combined credit may not exceed six semester hours.

**GER 3192 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated, but combined credit may not exceed six semester hours.

**GER 3193 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated, but combined credit may not exceed six semester hours.

**GER 3199 Independent Work for Honors Students** 3 cr.  
Preparation of an honors essay under the direction of a member of the German faculty.

**GER 3402 Masterpieces of German Literature in Translation** 3 cr.  
(Open to all students including German and German Education majors for degree credit as an elective.) German works in translation are chosen each time for reading, analysis, and discussion.

## Greek

**GREK 2191 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings and conferences under the direction of a member of the faculty. The course allows the student to supplement the work covered in the basic Greek course. Each course may be repeated but combined credit may not exceed six semester hours.

**GREK 2192 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings and conferences under the direction of a member of the faculty. The course allows the student to supplement the work covered in the basic Greek course. Each course may be repeated but combined credit may not exceed six semester hours.

**GREK 2193 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings and conferences under the direction of a member of the faculty. The course allows the student to supplement the work covered in the basic Greek course. Each course may be repeated but combined credit may not exceed six semester hours.

## History

**HIST 1000 The Last Five Years** 3 cr.  
Offered each semester. This course analyzes the historical processes of continuity and change through lectures, assigned readings, and organized discussions focused on issues and events of the last five years their background and development. Open to freshmen only.

**HIST 1001 History of Western Civilization** 3 cr.  
Offered each semester. Survey of movements and institutions that contributed most to present day civilization. First semester: ancient and medieval periods; second semester: modern period. An honors section (1019) is available for qualified students.

**HIST 1002 History of Western Civilization** 3 cr.  
Offered each semester. Survey of movements and institutions that contributed most to present day civilization. First semester: ancient and medieval periods; second semester: modern period. An honors section (1029) is available for qualified students.

**HIST 1010 Introduction to African-American History** 3 cr.  
Offered each semester. An introduction to the origins and patterns of African-American life and culture in the United States. Lectures and discussions.

**HIST 1019 History of Western Civilization Honors** 3 cr.  
Survey of movements and institutions that contributed most to present day civilization. First semester: ancient and medieval periods; second semester: modern period. This is an honors course for qualified students.

**HIST 1029 History of Western Civilization Honors** 3 cr.  
Survey of movements and institutions that contributed most to present day civilization. First semester: ancient and medieval periods; second semester: modern period. This is an honors class for qualified students.

**HIST 2080 The Impact of Science on Western Society** 3 cr.  
A non-technical survey of the impact of scientific ideas, methods, and discoveries on life and thought in the western world, examined through critical episodes in the history of science from ancient to modern times and their impact on society.

**HIST 2086 The Jews in the Making of Europe** 3 cr.  
Spring semester. A study of the Jews as a minority ethnic group in western civilization, focusing on the contributions of Judaism to the western religious and intellectual tradition, the role of Jews in the growth of Europe's economy, and the development of anti-Semitism and the Jewish response to it.

**HIST 2087 The Jews in the Making of America** 3 cr.  
Fall semester. The Jewish experience in America viewed as an example of cultural conflict and adaptation; the effects of the Jewish struggle to transmit and preserve a cultural heritage and identity under pressures of external hostility and internal conflicts.

**HIST 2201 History of Asian Civilizations** 3 cr.  
A comparative approach to the study of Asia divided into five culture zones (West, South, East, Southeast, and Central) from the dawning of civilization to the sixteenth century C.E.

**HIST 2202 Modern Asian History** 3 cr.  
A comparative approach to the study of Asia divided into five culture zones (West, South, East, Southeast, and Central) from the sixteenth century to the present.

**HIST 2301 Introduction to Archaeology** 3 cr.  
A survey of the development of archaeological research emphasizing modern principles and current techniques of excavation and dating.

**HIST 2302 The Emergence of Christianity** 3 cr.  
A study of the Jewish and Hellenistic background of Christianity, the life of Jesus, and the development of the Church during the first two centuries A.D.

**HIST 2307 English History to 1688** 3 cr.  
Medieval and early modern England to 1688; medieval society and institutions, constitutional developments, Tudor society and the English Reformation, Stuart kings and revolution.

**HIST 2308 English History Since 1688** 3 cr.  
Modern England since 1688; evolution of parliamentary government, the industrial revolution and labour, the rise and decline of the British Empire, Britain since World War II.

**HIST 2315 Conquest Slavery and Disruption: the Age of Discovery** 3 cr.  
A survey of the disruptive effects of European exploration and settlement of the New World (1492-1650) on African and Native

- American societies together with the corresponding impact on European economics and cultures.
- HIST 2360 English Constitutional and Legal History** 3 cr.  
Origin and development of English legal institutions; their influence on American legal institutions.
- HIST 2401 Colonial Latin America** 3 cr.  
Survey of the colonial period, emphasizing the European background, explorations, political, and economic systems and wars of independence.
- HIST 2402 Latin America Since Independence** 3 cr.  
Survey of the Latin American countries in the nineteenth and twentieth centuries, emphasizing the search for political stability, economic and social progress, and international relations.
- HIST 2501 American History** 3 cr.  
Offered each semester. Survey of American history from the earliest times to 1860.
- HIST 2502 American History** 3 cr.  
Offered each semester. Survey of American history from 1860 to the present.
- HIST 2587 Women in American History** 3 cr.  
An examination of the diverse historical experience of women in America from the colonial period to the present.
- HIST 2601 History of Louisiana** 3 cr.  
Offered each semester. A survey of the political, economic, social, and cultural development of Louisiana from the founding of the French colony to the present day.
- HIST 2602 The Negro in Louisiana** 3 cr.  
A study of the role of African Americans in the development of Louisiana with particular emphasis on their contributions to the history of the state, its traditions, and culture.
- HIST 2603 The History of New Orleans** 3 cr.  
The social, economic, and political growth of New Orleans from colonial times to the present, with particular attention to its ethnic groupings and physical development.
- HIST 2991 Special Studies in History** 3 cr.  
Prerequisite: consent of department. Topic may vary from semester to semester. The course may be repeated once for credit.
- HIST 3001 Historical Thought and Writing** 3 cr.  
This course is a practicum designed to introduce undergraduate students to the actual process of writing history. Practice in critical analysis, research methodology, documentation, bibliographic forms, and composition, culminating in a major research paper.
- HIST 3551 African-American History** 3 cr.  
The history of African-Americans from African origins to 1860.
- HIST 3552 African-American History** 3 cr.  
The history of African-Americans since 1860.
- HIST 3575 United States Presidents and Contemporary History** 3 cr.  
A special view of American history, seen from the perspective of our national leaders. The course will deal with the Presidents since Franklin D. Roosevelt, their earlier careers, their programs, their foreign policies, their wars, their successes, and their failures.
- HIST 3586 American Social and Cultural History, 1600-1865** 3 cr.  
A study of art, music, and architecture as well as the clothing, food, houses, work, and amusements of early Americans.
- HIST 3588 Religion in American History** 3 cr.  
The role of religion in shaping American attitudes and institutions.
- HIST 3595 Academic Year Abroad: Special Topics in History** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.
- HIST 3995 Independent Study: Readings** 1 cr.  
Prerequisite: consent of department. The courses consist of directed readings designed to meet the needs and interests of the individual student; regular conferences between the student and the instructor are required.
- HIST 3996 Independent Study: Readings** 1 cr.  
Prerequisite: consent of department. The courses consist of directed readings designed to meet the needs and interests of the individual student; regular conferences between the student and the instructor are required.
- HIST 3999 Senior Honors Thesis** 1-6 cr.  
Prerequisite: consent of department and the director of the Honors Program. Directed research culminating in a written thesis to meet the requirements for graduation with University Honors and Honors in History. May be repeated for up to a total of six credits. Section number will correspond with credit to be earned.
- HIST 4001 The City and Civilization** 3 cr.  
Major developments in world urban history from ancient times to the present with emphasis on the European city.
- HIST 4003 Modern Military History** 3 cr.  
An examination of war and military institutions in western society since the end of the Middle Ages.
- HIST 4005 History of Social Radicalism** 3 cr.  
A study of socialist and communist ideas and political action in the formation of the modern world.
- HIST 4201 History of Modern China** 3 cr.  
The Empire of the Manchus; China's internal development from 1842 to 1911; political, social, and intellectual movements in the Republican period, 1911-1949; and China under communism.
- HIST 4301 The Ancient Near East** 3 cr.  
A study of the civilizations of Mesopotamia, Egypt, Anatolia, Syria, Palestine, and Persia from earliest times to the Hellenistic period.
- HIST 4302 Ancient Greece** 3 cr.  
A history of Greek civilization from earliest times to the end of the Hellenistic period.
- HIST 4303 Roman History** 3 cr.  
A history of Roman civilization from the beginning to the empire of Constantine.
- HIST 4304 Ancient Israel** 3 cr.  
A study of the history, archaeology, and religious development of ancient Israel from earliest times to the end of the first century B.C.
- HIST 4306 The Early Middle Ages** 3 cr.  
An examination of changes in European civilization from the disintegration of the Roman hegemony to the eleventh century.
- HIST 4307 The High Middle Ages** 3 cr.  
An examination of European civilization in the eleventh, twelfth, and thirteenth centuries with emphasis on cultural and institutional developments.
- HIST 4310 The Renaissance and the Reformation** 3 cr.  
Transition from medieval to modern conditions, emphasizing social, economic, and cultural changes of the fourteenth and fifteenth centuries and the religious upheaval of the sixteenth century.
- HIST 4320 The Rise of Modern Europe** 3 cr.  
History of Europe in the seventeenth and eighteenth centuries.
- HIST 4345 Twentieth Century Europe** 3 cr.

- Analysis of world power politics, war dynamics, changing imperialism, emerging totalitarianism, statism, nationalist policies and problems. HIST 4345 treats the period 1918-1945; HIST 4346 treats the period 1945 to the present. Either semester may be taken independently.
- HIST 4346 Twentieth Century Europe** 3 cr.  
Analysis of world power politics, war dynamics, changing imperialism, emerging totalitarianism, statism, nationalistic policies and problems. HIST 4345 treats the period 1918 to 1945; HIST 4346 treats the period 1945 to the present. Either semester may be taken independently.
- HIST 4361 Tudor England** 3 cr.  
England from the Wars of the Roses to the death of Elizabeth, 1471-1603. Moves from Richard III's death on Bosworth field to Henry VIII and Anne Boleyn, Edward VI, "Bloody" Mary, and the Age of Elizabeth, with special emphasis on the Shakespearean Renaissance, the rise of Parliament, and the naval exploits of the English "Sea Dogs."
- HIST 4362 Stuart England** 3 cr.  
The political, economic, and cultural history of England in the seventeenth century, 1603-1714.
- HIST 4365 The Age of Churchill** 3 cr.  
Political, social, and economic developments in England and the British Empire during recent times; emergence of the modern social state.
- HIST 4366 The British Empire** 3 cr.  
General survey of the British Empire and development of the British Commonwealth of Nations.
- HIST 4367 The Age of Louis XIV** 3 cr.  
France in the seventeenth century. The course will focus on the formation of the modern state with a political-military bureaucracy that was imitated, like Versailles, on a lesser scale in other countries; the development of the French colonial empire, including Louisiana; and the dominant cultural, intellectual, scientific, and religious trends along with their impact elsewhere in Europe. Several slide lectures will illustrate the art and architecture of the period.
- HIST 4368 Modern France** 3 cr.  
Major political, social, and economic forces that molded the French nation after 1815.
- HIST 4369 Modern Spain** 3 cr.  
An examination of the formation of modern Spain, emphasizing the transition from the pluralistic society of the middle ages to the orthodoxy of Ferdinand and Isabella and the imperialism of the sixteenth century, and tracing the development of social, economic, and political structures to the present day.
- HIST 4373 History of the Hapsburg Empire** 3 cr.  
A study of the Hapsburg Empire from its emergence as a major power in the eighteenth century to the disintegration of Austria-Hungary in 1918.
- HIST 4375 Tsarist Russia** 3 cr.  
Russian institutions and life under the Romanovs.
- HIST 4376 Modern and Contemporary Russia** 3 cr.  
Focus on late Imperial and Soviet periods.
- HIST 4380 Europe's Quest for Power and Peace** 3 cr.  
A study of the major developments in European international relations with emphasis on diplomacy as an instrument of national policy. The first semester examines developments from the Congress of Vienna to the origins of the First World War; the second covers from the Versailles peace settlement through Second World War and the Cold War to the present. Either semester may be taken independently.
- HIST 4381 Europe's Quest for Power and Peace** 3 cr.  
A study of the major developments in European international relations with emphasis on diplomacy as an instrument of national policy. The first semester examines developments from the Congress of Vienna to the origins of the First World War; the second covers from the Versailles peace settlement through Second World War and the Cold War to the present. Either semester may be taken independently.
- HIST 4382 The European Intellectual Tradition** 3 cr.  
This course is not a history of formal thought, but relates central ideas to political, economic, social, artistic, and scientific movements. The first semester concentrates on the earlier periods and the second semester on modern Europe. Either semester may be taken independently.
- HIST 4383 The European Intellectual Tradition** 3 cr.  
This course is not a history of formal thought, but relates central ideas to political, economic, social, artistic, and scientific movements. The first semester concentrates on the earlier periods and the second semester on modern Europe. Either semester may be taken independently.
- HIST 4403 History of Mexico** 3 cr.  
Political, economic, and social developments from the colonial period to the present.
- HIST 4406 Caribbean Civilization** 3 cr.  
Survey of the West Indies, Central America, Colombia, and Venezuela from colonial to modern times.
- HIST 4501 The Colonial Period in American History** 3 cr.  
An examination of the establishment and development of the English colonies in North America.
- HIST 4502 The Revolutionary Period in American History** 3 cr.  
An analysis of the causes, progress, and consequences of the revolution in the British colonies of North America.
- HIST 4503 The New Nation 1789-1815** 3 cr.  
Development of American political, social, and cultural institutions during the formative years of the new Republic.
- HIST 4504 The Jackson Era 1815-1845** 3 cr.  
Examination of the nature of Jacksonian Democracy and its treatment in American historiography.
- HIST 4505 The Disruption of the Union 1845-1861** 3 cr.  
A study of the divisive political, social, and economic forces which intensified in the 1840s and culminated in the Civil War.
- HIST 4506 Civil War and Reconstruction** 3 cr.  
A study of the wartime problems of the Union and Confederacy, the consequences of the war, and the efforts to create a new Union.
- HIST 4508 America in Transition 1877-1900** 3 cr.  
An intensive study of the rise of the United States as an industrial and world power with particular stress on the changing patterns within American society.
- HIST 4510 Recent American History** 3 cr.  
Historical evolution of the United States in recent times.
- HIST 4511 Recent American History** 3 cr.  
Historical evolution of the United States in recent times.
- HIST 4521 The New South** 3 cr.  
Political, social, and economic changes in the South since 1880.

- HIST 4543 United States Urban History** 3 cr.  
Urban development in the United States from the colonial town to the twentieth century megalopolis.
- HIST 4551 African-American Slavery** 3 cr.  
A study of the origins and the political, economic, and social structure of slavery in the European colonial empires of the western hemisphere with special emphasis on the British Empire and the United States.
- HIST 4552 Black Movements and Messiahs** 3 cr.  
A study of the organizations, leadership, and programs of late nineteenth and twentieth century movements that have sought escape from personal and institutional racism in the United States.
- HIST 4561 U.S. Constitutional Development to 1865** 3 cr.  
The historical development of the U.S. Constitution from its British origins to the end of the American Civil War.
- HIST 4562 U.S. Constitutional History Since 1865** 3 cr.  
The role of the constitution in the transformation of the federal union into the indivisible nation.
- HIST 4570 World War II-An International History** 3 cr.  
A look at World War II from a global perspective: the intricate international diplomacy and strategic planning of the principal combatants; the war's major military campaigns and battles, its impact on the involved societies and economies, its brutal effect on victims, its difficult choices of appeasement/collaboration or resistance, as well as the postwar "mastering" of the war's harsh memories.
- HIST 4580 Diplomatic History of the United States** 3 cr.  
Historical evolution of American foreign policies since 1776.
- HIST 4581 Diplomatic History of the United States** 3 cr.  
Historical evolution of American foreign policies since 1776.
- HIST 4582 Sources of American Thought** 3 cr.  
Ideas and beliefs which have shaped American life, traced from early colonial times to 1865. Special attention to Puritan attitudes, the Enlightenment, southern particularism, Romantic currents, and perceptions of nature and technology.
- HIST 4583 Modern American Thought** 3 cr.  
Ideas and beliefs which have shaped American life since the Civil War. Special attention to the impact of Darwinian evolution, idealism, and pragmatism, modernist and anti-modernist attitudes, the South, and radical and conservative critiques of American society.
- HIST 4587 American Social and Cultural History 1865 to the Present** 3 cr.  
A study of the historical development of American Cultural and Social Movements, with an emphasis upon literature, art, architecture, and popular culture.
- HIST 4603 Research in New Orleans History** 3 cr.  
(HIST 4603 and URBN 4603 are cross-listed) Prerequisite: HIST 2603 or HIST 4543 or consent of instructor. A detailed survey of qualitative research techniques, their application to local and urban history, and the preparation of a written project based on primary research in New Orleans history.
- HIST 4926 New Orleans Ethnic Studies for Teachers** 3 cr.  
An analysis of the different peoples who came to New Orleans and their cultural contributions to the unique features of the city. Conceptual structure, techniques, and basic bibliography for teaching the subject in local secondary schools. Not normally recommended for history majors.
- HIST 4943 World History for Teachers** 3 cr.  
This course is primarily intended for teachers. New interpretations in world history, organizational and conceptual structures, classroom techniques, materials, and basic bibliography for teaching world history at the secondary level.
- HIST 4945 New Interpretations of American History for Teachers** 3 cr.  
A course designed primarily for secondary school social science teachers on recent interpretations of U.S. history. Appropriate teaching techniques and basic bibliography.
- HIST 4991 Special Studies in History** 3 cr.  
Prerequisite: consent of department. Topic may vary from semester to semester. The course may be repeated once for credit.
- HIST 6001 Historiography** 3 cr.  
Fall semester. The history and theory of historical writing and an analysis of the role of the professional historian in today's world.
- HIST 6003 Historical Editing** 3 cr.  
The practice of preparing manuscripts and historical documents for publication. Offered biennially.
- HIST 6004 Archival Methods** 3 cr.  
Summer session only. The basics of archival work: archival theory, principles, and methodology; terminology; archives, legislation, and history; the profession of archivist; problems of forgery, authentication, and evaluation; acquisition policies and programs; records scheduling; disposition and disposal; accessioning and arrangement; description, conservation, and storage.
- HIST 6005 Archives and Records Administration** 3 cr.  
Summer session only. The fundamentals of administering archives and records programs; institutional goals; priorities, planning, and evaluation; budgeting; funding; staffing; reference services; access; security.
- HIST 6006 Advanced Archives and Records Administration** 3 cr.  
Advanced techniques in administering archives and records programs. Special attention will be given to the nature, development, and administration of modern records systems, the administration of non-paper records, reprography including micrographies, and computer use in archival administration.
- HIST 6007 Archives and Records Internship** 3-9 cr.  
Offered each semester. Prerequisite: HIST 6004. Internship in a local archive for individually supervised practical training and independent study in all facets of a full-service archival program, including acquisitions, arrangement, description, and reference service. The student will be expected to complete specific projects, including field collection, preservation, and conservation. Credit for satisfactory work completed in the practicum will be computed on the basis of three semester hours credit per 120 hours on the job, e.g., 16 hours a week on the job for one semester (or 30 per week during the summer term) yields six credit hours. Internship may be scheduled only in units of three, six, nine, or twelve credits. Open only to students enrolled in the History Department's graduate curriculum in archives and records administration.
- HIST 6301 Proseminar in European History** 3 cr.  
Intensive reading on a particular problem area, or period of European history. Discussions, conferences, short reports, or short papers. Each course may be taken twice for credit.
- HIST 6302 Seminar in European History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper. Each course may be taken twice for credit.

- HIST 6303 Proseminar in European History** 3 cr.  
Intensive reading on a particular problem area, or period of European history. Discussions, conferences, short reports, or short papers. Each course may be taken twice for credit.
- HIST 6304 Seminar in European History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper. Each course may be taken twice for credit.
- HIST 6305 Proseminar in British History** 3 cr.  
Intensive reading on a particular problem culminating in presentation of a paper. Each course may be taken twice for credit.
- HIST 6306 Seminar in British History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper.
- HIST 6307 Proseminar in British History** 3 cr.  
Intensive reading on a particular problem culminating in presentation of a paper. Each course may be taken twice for credit.
- HIST 6308 Seminar in British History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper.
- HIST 6401 Proseminar in Latin American History** 3 cr.  
Intensive reading on a particular problem, area, or period of Latin American history. Discussions, conferences, short reports, or short papers.
- HIST 6402 Seminar in Latin American History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper.
- HIST 6403 Proseminar in Latin American History** 3 cr.  
Intensive reading on a particular problem, area, or period of Latin American history. Discussions, conferences, short reports, or short papers.
- HIST 6404 Seminar in Latin American History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper.
- HIST 6501 Proseminar in American History** 3 cr.  
Intensive reading on a particular problem, area, or period of American history. Discussions, conferences, short reports, or short papers. Each course may be taken twice for credit.
- HIST 6502 Seminar in American History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper. Each course may be taken twice for credit.
- HIST 6503 Proseminar in American History** 3 cr.  
Intensive reading on a particular problem, area, or period of American history. Discussions, conferences, short reports, or short papers. Each course may be taken twice for credit.
- HIST 6504 Seminar in American History** 3 cr.  
Intensive research on a particular problem culminating in presentation of a paper. Each course may be taken twice for credit.
- HIST 6803 Proseminar in Urban History: Social and Cultural Change** 3 cr.  
(URBN 6803, URBN 6805, HIST 6803, and HIST 6805 are cross-listed) Prerequisite: URBN 6850 or HIST 4543 or consent of instructor. Intensive reading in urban, social, and cultural change. Focus will be on American, European, and/or Third World urban development, from the founding of initial settlements to the present day. Discussions, conferences, short reports, and essays will be required. Each course may be repeated once for credit.
- HIST 6804 Seminar In Urban History** 3 cr.  
Intensive research on a particular problem culminating in the presentation of a paper. Each course may be taken twice for credit.
- HIST 6805 Proseminar in Urban History: Social and Cultural Change** 3 cr.  
(URBN 6803, URBN 6805, HIST 6803, and HIST 6805 are cross-listed) Prerequisite: URBN 6850 or HIST 4543 or consent of instructor. Intensive reading in urban, social, and cultural change. Focus will be on American, European, and/or Third World urban development, from the founding of initial settlements to the present day. Discussions, conferences, short reports, and essays will be required. Each course may be repeated once for credit.
- HIST 6806 Seminar In Urban History** 3 cr.  
Intensive research on a particular problem culminating in the presentation of a paper. Each course may be taken twice for credit.
- HIST 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- HIST 7040 Examination Or Thesis Only** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- HIST 4001G The City and Civilization** 3 cr.  
Major developments in world urban history from ancient times to the present with emphasis on the European city.
- HIST 4003G Modern Military History** 3 cr.  
An examination of war and military institutions in western society since the end of the Middle Ages.
- HIST 4005G History of Social Radicalism** 3 cr.  
A study of socialist and communist ideas and political action in the formation of the modern world.
- HIST 4201G History of Modern China** 3 cr.  
The Empire of the Manchus; China's internal development from 1842 to 1911; political, social, and intellectual movements in the Republican period, 1911-1949; and China under communism.
- HIST 4301G The Ancient Near East** 3 cr.  
A study of the civilizations of Mesopotamia, Egypt, Anatolia, Syria, Palestine, and Persia from earliest times to the Hellenistic period.
- HIST 4302G Ancient Greece** 3 cr.  
A history of Greek civilization from earliest times to the end of the Hellenistic period.
- HIST 4303G Roman History** 3 cr.  
A history of Roman civilization from the beginning to the empire of Constantine.
- HIST 4304G Ancient Israel** 3 cr.  
A study of the history, archaeology, and religious development of ancient Israel from earliest times to the end of the first century B.C.
- HIST 4306G The Early Middle Ages** 3 cr.  
An examination of changes in European civilization from the disintegration of the Roman hegemony to the eleventh century.
- HIST 4307G The High Middle Ages** 3 cr.  
An examination of European civilization in the eleventh, twelfth, and thirteenth centuries with emphasis on cultural and institutional developments.
- HIST 4310G The Renaissance and the Reformation** 3 cr.  
Transition from medieval to modern conditions, emphasizing social, economic, and cultural changes of the fourteenth and fifteenth centuries and the religious upheaval of the sixteenth century.

- HIST 4320G The Rise of Modern Europe** 3 cr.  
History of Europe in the seventeenth and eighteenth centuries.
- HIST 4345G Twentieth Century Europe** 3 cr.  
Analysis of world power politics, war dynamics, changing imperialism, emerging totalitarianism, statism, nationalist policies and problems. HIST 4345 treats the period 1918-1945; HIST 4346 treats the period 1945 to the present. Either semester may be taken independently.
- HIST 4346G Twentieth Century Europe** 3 cr.  
Analysis of world power politics, war dynamics, changing imperialism, emerging totalitarianism, statism, nationalistic policies and problems. HIST 4345 treats the period 1918 to 1945; HIST 4346 treats the period 1945 to the present. Either semester may be taken independently.
- HIST 4361G Tudor England** 3 cr.  
England from the Wars of the Roses to the death of Elizabeth, 1471-1603. Moves from Richard III's death on Bosworth field to Henry VIII and Anne Boleyn, Edward VI, "Bloody" Mary, and the Age of Elizabeth, with special emphasis on the Shakespearean Renaissance, the rise of Parliament, and the naval exploits of the English "Sea Dogs"
- HIST 4362G Stuart England** 3 cr.  
The political, economic, and cultural history of England in the seventeenth century, 1603-1714.
- HIST 4365G The Age of Churchill** 3 cr.  
Political, social, and economic developments in England and the British Empire during recent times; emergence of the modern social state.
- HIST 4366G The British Empire** 3 cr.  
General survey of the British Empire and development of the British Commonwealth of Nations.
- HIST 4367G The Age of Louis XIV** 3 cr.  
France in the seventeenth century. The course will focus on the formation of the modern state with a political-military bureaucracy that was imitated, like Versailles, on a lesser scale in other countries; the development of the French colonial empire, including Louisiana; and the dominant cultural, intellectual, scientific, and religious trends along with their impact elsewhere in Europe. Several slide lectures will illustrate the art and architecture of the period.
- HIST 4368G Modern France** 3 cr.  
Major political, social, and economic forces that molded the French nation after 1815.
- HIST 4369G Modern Spain** 3 cr.  
An examination of the formation of modern Spain, emphasizing the transition from the pluralistic society of the middle ages to the orthodoxy of Ferdinand and Isabella and the imperialism of the sixteenth century, and tracing the development of social, economic, and political structures to the present day.
- HIST 4373G History of the Hapsburg Empire** 3 cr.  
A study of the Hapsburg Empire from its emergence as a major power in the eighteenth century to the disintegration of Austria-Hungary in 1918.
- HIST 4375G Tsarist Russia** 3 cr.  
Russian institutions and life under the Romanovs.
- HIST 4376G Modern and Contemporary Russia** 3 cr.  
Focus on late Imperial and Soviet periods.
- HIST 4380G Europe's Quest for Power and Peace** 3 cr.  
A study of the major developments in European international relations with emphasis on diplomacy as an instrument of national policy. The first semester examines developments from the Congress of Vienna to the origins of the First World War; the second covers from the Versailles peace settlement through Second World War and the Cold War to the present. Either semester may be taken independently.
- HIST 4381G Europe's Quest for Power and Peace** 3 cr.  
A study of the major developments in European international relations with emphasis on diplomacy as an instrument of national policy. The first semester examines developments from the Congress of Vienna to the origins of the First World War; the second covers from the Versailles peace settlement through Second World War and the Cold War to the present. Either semester may be taken independently.
- HIST 4382G The European Intellectual Tradition** 3 cr.  
This course is not a history of formal thought, but relates central ideas to political, economic, social, artistic, and scientific movements. The first semester concentrates on the earlier periods and the second semester on modern Europe. Either semester may be taken independently.
- HIST 4383G The European Intellectual Tradition** 3 cr.  
This course is not a history of formal thought, but relates central ideas to political, economic, social, artistic, and scientific movements. The first semester concentrates on the earlier periods and the second semester on modern Europe. Either semester may be taken independently.
- HIST 4403G History of Mexico** 3 cr.  
Political, economic, and social developments from the colonial period to the present.
- HIST 4406G Caribbean Civilization** 3 cr.  
Survey of the West Indies, Central America, Colombia, and Venezuela from colonial to modern times.
- HIST 4501G The Colonial Period in American History** 3 cr.  
An examination of the establishment and development of the English colonies in North America.
- HIST 4502G The Revolutionary Period in American History** 3 cr.  
An analysis of the causes, progress, and consequences of the revolution in the British colonies of North America.
- HIST 4503G The New Nation 1789-1815** 3 cr.  
Development of American political, social, and cultural institutions during the formative years of the new Republic.
- HIST 4504G The Jackson Era 1815-1845** 3 cr.  
Examination of the nature of Jacksonian Democracy and its treatment in American historiography.
- HIST 4505G The Disruption of the Union 1845-1861** 3 cr.  
A study of the divisive political, social, and economic forces which intensified in the 1840s and culminated in the Civil War.
- HIST 4506G Civil War and Reconstruction** 3 cr.  
A study of the wartime problems of the Union and Confederacy, the consequences of the war, and the efforts to create a new Union.
- HIST 4508G America in Transition 1877-1900** 3 cr.  
An intensive study of the rise of the United States as an industrial and world power with particular stress on the changing patterns within American society.
- HIST 4510G Recent American History** 3 cr.  
Historical evolution of the United States in recent times.

- HIST 451G Recent American History** 3 cr.  
Historical evolution of the United States in recent times.
- HIST 452G The New South** 3 cr.  
Political, social, and economic changes in the South since 1880.
- HIST 454G United States Urban History** 3 cr.  
Urban development in the United States from the colonial town to the twentieth century megalopolis.
- HIST 455G African-American Slavery** 3 cr.  
A study of the origins and the political, economic, and social structure of slavery in the European colonial empires of the western hemisphere with special emphasis on the British Empire and the United States.
- HIST 455G Black Movements and Messiahs** 3 cr.  
A study of the organizations, leadership, and programs of late nineteenth and twentieth century movements that have sought escape from personal and institutional racism in the United States.
- HIST 456G U.S. Constitutional Development to 1865** 3 cr.  
The historical development of the U.S. Constitution from its British origins to the end of the American Civil War.
- HIST 456G U.S. Constitutional History Since 1865** 3 cr.  
The role of the constitution in the transformation of the federal union into the indivisible nation.
- HIST 457G World War II-An International History** 3 cr.  
A look at World War II from a global perspective: the intricate international diplomacy and strategic planning of the principal combatants; the war's major military campaigns and battles, its impact on the involved societies and economies, its brutal effect on victims, its difficult choices of appeasement/collaboration or resistance, as well as the postwar "mastering" of the war's harsh memories.
- HIST 458G Diplomatic History of the United States** 3 cr.  
Historical evolution of American foreign policies since 1776.
- HIST 458G Diplomatic History of the United States** 3 cr.  
Historical evolution of American foreign policies since 1776.
- HIST 458G Sources of American Thought** 3 cr.  
Ideas and beliefs which have shaped American life, traced from early colonial times to 1865. Special attention to Puritan attitudes, the Enlightenment, southern particularism, Romantic currents, and perceptions of nature and technology.
- HIST 458G Modern American Thought** 3 cr.  
Ideas and beliefs which have shaped American life since the Civil War. Special attention to the impact of Darwinian evolution, idealism, and pragmatism, modernist and anti-modernist attitudes, the South, and radical and conservative critiques of American society.
- HIST 458G American Social and Cultural History 1865 to the Present** 3 cr.  
A study of the historical development of American Cultural and Social Movements, with an emphasis upon literature, art, architecture, and popular culture.
- HIST 460G Research in New Orleans History** 3 cr.  
(HIST 4603 and URBN 4603 are cross-listed) Prerequisite: HIST 2603 or HIST 4543 or consent of instructor. A detailed survey of qualitative research techniques, their application to local and urban history, and the preparation of a written project based on primary research in New Orleans history.
- HIST 492G New Orleans Ethnic Studies for Teachers** 3 cr.  
An analysis of the different peoples who came to New Orleans and their cultural contributions to the unique features of the city. Conceptual structure, techniques, and basic bibliography for teaching the subject in local secondary schools. Not normally recommended for history majors.
- HIST 494G World History for Teachers** 3 cr.  
This course is primarily intended for teachers. New interpretations in world history, organizational and conceptual structures, classroom techniques, materials, and basic bibliography for teaching world history at the secondary level.
- HIST 494G New Interpretations of American History for Teachers** 3 cr.  
A course designed primarily for secondary school social science teachers on recent interpretations of U.S. history. Appropriate teaching techniques and basic bibliography.
- HIST 499G Special Studies in History** 3 cr.  
Prerequisite: consent of department. Topic may vary from semester to semester. The course may be repeated once for credit.

### Hotel, Restaurant and Tourism Administration

- HRT 2000 Introduction to Hotel, Restaurant and Tourism Administration** 3 cr.  
A comprehensive survey of the lodging, food service, and travel industries emphasizing their historical development and current trends by examining the social, economic, technological, and geographic factors contributing to their evolution. Basic operating principles and industry concepts and terms are stressed. Guest lecturers are featured, affording students the opportunity to discuss hospitality careers with local industry executives and leaders.
- HRT 2020 Hotel Operations** 3 cr.  
Study of the operating departments and functions of contemporary hotels. Topics will include analysis of commercial, transient, resort, and convention properties. The course will examine the management processes and problems in operating hotels.
- HRT 2030 Principles of Food Preparation I** 4 cr.  
This course is designed to introduce students to the basic techniques of food and beverage production and a commercial kitchen environment. Topics include purchasing, receiving, storage, preparation, equipment use and maintenance. There is both a lecture and laboratory segment of this course. A lab fee and physical exam are required, and the student will also be required to purchase a laboratory uniform. Preference given to Hotel, Restaurant, and Tourism Administration majors.
- HRT 2050 Principles of Travel and Tourism** 3 cr.  
An introduction to the principles of domestic and international tourism analyzing its history, organization and transportation modes; the motivation of travel and travel choice; tourism supply, demand, economic, and destination development; tourism marketing and research; and the future of tourism in international social and economic development.
- HRT 3002 Hotel, Restaurant, and Tourism Experience** 0 cr.  
This course is a required work experience that may be completed prior to, during, or after completion of course work. The program consists of two different hospitality industry experiences of 400 hours each for a total of 800 hours of approved work experience. The students in this course must submit a report on each work experience and the employers will be required to submit an evaluation of the student's performance.
- HRT 3011 Tourism and Hospitality Marketing** 3 cr.  
A survey of modern marketing theory and techniques as applied in the tourism and hospitality industry. Emphasis will be placed on services marketing, and topics include an analysis of hospitality customer needs, marketing planning, segmentation, positioning, and promotion.

- HRT 3016 Legal Environment in the Hospitality Industry** 3 cr.  
Nature and function of law and legal institutions in society; with emphasis on those areas of law most relevant to hospitality operations. Topics include attributes of hotels, licensing, regulation, hotel-guest and restaurant-patron relationship, obligations of hotels, guest property, rights of hotels and restaurants, sale of alcoholic beverages, and travel industry law.
- HRT 3017 Service Organization Management in Hospitality** 3 cr.  
Prerequisites: Management 3401 3467. Principles and practices of service management as applied to the hospitality firm. Emphasis will be upon the human resource component of the organization as well as the practical application of theoretical concepts.
- HRT 3140 Cost Control of Hospitality Operations** 3 cr.  
Study of factors important in the control of expenses in food service and lodging operations. Topics will include: purchasing, receiving, storage, issuing, budgeting, menu pricing, labor cost control, and the use of source documents and forms.
- HRT 3141 Management of Beverage Service** 3 cr.  
An advanced, comprehensive examination of beverage operations in the hospitality industry. Topics will include: purchasing, storing, issuing and serving alcoholic beverages; survey and study of wines, spirits, and beers; and a study of laws and social considerations pertaining to the serving of alcoholic beverages. Restricted to Hotel, Restaurant, and Tourism Administration majors.
- HRT 3145 Layout, Design, and Maintenance of Hospitality Facilities** 3 cr.  
A study of facilities design and layout for effective delivery of hospitality services. Topics include equipment selection, space allocation, maintenance of the physical plant in hospitality facilities, principles of utilities management, ventilation, sanitation, acoustics, furniture and fixture selection, and maintenance.
- HRT 3150 Tourism Planning and Operations** 3 cr.  
Prerequisite: HRT 2050. This course examines the tourism planning approach, considering political, physical, social, and economic elements as interrelated and interdependent components. The development process of various tourism products at the national, regional, and community levels will be examined including the functions of tour operators, wholesale and retail travel agencies.
- HRT 3240 Club Management and Operations** 3 cr.  
An analysis of the operation and management of private and public clubs (golf, tennis, military, country clubs, professional, and business clubs).
- HRT 3290 Hospitality Internship** 3 cr.  
Under the supervision of an Hotel, Restaurant, and Tourism Administration faculty member, the student will intern at the site of a participating organization which directs the intern in a specific research project. Readings and other research activities may be assigned. Students desiring to take this course should apply a semester in advance for school approval. Only open to Hotel, Restaurant, and Tourism Administration majors. A minimum of eight hours per week at the site of a participating organization will be required. This course may be repeated once for credit.
- HRT 3295 Independent Study in Hotel, Restaurant and Tourism Administration** 1-3 cr.  
Offered each semester. Prerequisite: Approval of the directed individual study by the director of HRT and the supervising professor is required prior to registration. The student should refer to the College of Business Administration Policy on Undergraduate Directed Individual Study available in the School of Hotel, Restaurant, and Tourism Administration. Arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and a research paper are required. May be repeated for up to six hours credit.
- HRT 4110 Tourism and Hospitality Research** 3 cr.  
Prerequisites: HRT 2050, 3011, MATH 2314 or the consent of the department. An advanced course in tourism research techniques for the tourism and the hospitality industry. Students will formulate and execute a research study including research design, data collection, computerized data analysis and interpretation of results. Not available for graduate credit.
- HRT 4250 International Tourism** 3 cr.  
Prerequisites: HRT 2050, 3011, or consent of department. A comprehensive examination of the complex world of international tourism as a modern mass cultural activity. The course will emphasize world geography and traveler flows, political environments and security relationships, government planning and destination development, economic development strategies and international competition, and the role of international agencies and organizations in world tourism.
- HRT 4290 Special Topics in Hotel, Restaurant and Tourism Administration** 3 cr.  
Prerequisite: consent of the school. An advanced study of contemporary issues in Hotel, Restaurant, and Tourism. May be repeated for credit when topics vary.
- HRT 4299 Senior Honors Thesis** 3 cr.  
Prerequisite: consent of school and the director of the Honors Program. Only students maintaining an overall 3.0 grade-point average and a 3.5 grade-point average in Hotel, Restaurant, and Tourism Administration may apply. Senior honors thesis research in Hotel, Restaurant, and Tourism Administration under the direction of a faculty member. Students may earn up to a total of six credits. Oral defense of thesis is required. Not available for graduate credit.
- HRT 4110G Tourism and Hospitality Research** 3 cr.  
Prerequisites: HRT 2050, 3011, MATH 2314 or the consent of the department. An advanced course in tourism research techniques for the tourism and the hospitality industry. Students will formulate and execute a research study including research design, data collection, computerized data analysis and interpretation of results. Not available for graduate credit.
- HRT 4250G International Tourism** 3 cr.  
Prerequisites: HRT 2050, 3011, or consent of department. A comprehensive examination of the complex world of international tourism as a modern mass cultural activity. The course will emphasize world geography and traveler flows, political environments and security relationships, government planning and destination development, economic development strategies and international competition, and the role of international agencies and organizations in world tourism.
- HRT 4290G Special Topics in Hotel, Restaurant and Tourism Administration** 3 cr.  
Prerequisite: consent of the school. An advanced study of contemporary issues in Hotel, Restaurant, and Tourism. May be repeated for credit when topics vary.
- Humanities**
- HUMS 4090 Special Topics In Humanities** 3 cr.  
An interdisciplinary course in the humanities. Topics will vary. May be repeated once for credit.
- HUMS 4090G Special Topics In Humanities** 3 cr.  
An interdisciplinary course in the humanities. Topics will vary. May be repeated once for credit.

## Italian

**ITAL 2031 Italian Conversation** 3 cr.  
Prerequisite: ITAL 2002 or consent of instructor. Conversation, oral discussions, interpretations, and reports; practicing the spoken language.

## Japanese

**JAPN 1001 Basic Japanese** 3 cr.  
A sequence of courses for beginners that aims at the acquisition of the four basic language skills: speaking, understanding, reading, and writing. The mastery of basic language structures will be achieved through aural-oral exercises and practice. The Japanese writing system will be introduced from the beginning (all Katakana and Hiragana). Kanji (Chinese characters) will be gradually introduced later in the first course.

**JAPN 1002 Basic Japanese** 3 cr.  
A continuation of JAPN 1001.

**JAPN 2001 Intermediate Japanese** 3 cr.  
Continuation of the development of all four language skills: speaking, understanding, reading, and writing. The course includes the study of approximately 100 Japanese characters, and the presentation and discussion of Japanese culture.

**JAPN 2002 Intermediate Japanese** 3 cr.  
Continuation of the development of all language skills: speaking, understanding, reading, and writing. The course includes the study of additional Japanese characters and the presentation and discussion of aspects of Japanese culture.

## Journalism

**JOUR 2700 Introduction to Journalism** 3 cr.  
(DRCM 2700 and JOUR 2700 are cross-listed) Introduction to news gathering, copy, and continuity composition, basic skills and techniques of journalism in public relations, advertising, and the mass media. (Not available for credit for Speech-Education degree.)

**JOUR 2791 Independent Study** 1 cr.  
(DRCM 2791 and JOUR 2791 are cross-listed) Admission by consent of department. Reading, conferences, and preparation of articles, reports, and special projects concerning print journalism under direction of a member of the journalism faculty.

**JOUR 2792 Independent Study** 1 cr.  
(DRCM 2791 and JOUR 2791 are cross-listed) Admission by consent of department. Reading, conferences, and preparation of articles, reports, and special projects concerning print journalism under direction of a member of the journalism faculty.

**JOUR 2793 Independent Study** 1 cr.  
(DRCM 2791 and JOUR 2791 are cross-listed) Admission by consent of department. Reading, conferences, and preparation of articles, reports, and special projects concerning print journalism under direction of a member of the journalism faculty.

**JOUR 3700 Advanced Journalism** 3 cr.  
Prerequisites: DRCM 1110, 1111, 2770, and 2771. This course uses the fundamental principles of communication theory and develops the skills needed to solve communication problems through the design of persuasive verbal, written, and visual messages. The major emphasis is placed on the development of message design strategies appropriate for audiences within the mass media.

**JOUR 3760 Educational Journalism** 3 cr.  
(DRCM 3760 and JOUR 3760 are cross-listed) The editorial, business, and mechanical techniques of producing school publications. Designed for school publications advisers.

## Latin

**LAT 2102 Selected Orations of Cicero** 3 cr.  
Departmental consent. The selections are read and interpreted with due attention to prose style

## Library Science

**LIBS 4200 Adolescent Literature** 3 cr.  
(ENGL 4240 and LIBS 4200 are cross listed). A survey of books and materials appropriate for use with the adolescent reader. Emphasis will be placed on selection and discussion of books for today's teenagers. This course can be used to satisfy general degree requirements in literature for upper elementary education students only.

**LIBS 4500 Government Publications** 3 cr.  
Study of municipal, state, and federal documents of the United States and documents of the United Nations. Emphasis is placed on the nature and use of official publications with consideration given to their selection, acquisition, and organization.

**LIBS 4800 School Library Administration** 3 cr.  
A critical study of school library administration: selection and organization of materials, evaluation of the library and its relationship to the school's objectives, and trends in school librarianship.

**LIBS 4990 Special Topics in Library Science** 3 cr.  
Prerequisite: consent of department. Topic will vary from semester to semester. This course may be repeated once for credit.

**LIBS 4995 Practicum in Library Science** 3 cr.  
Prerequisite: nine semester hours of library science to include six semester hours from the following: LIBS 4410, 4520, 4800; a minimum grade-point average of "C" in all library science courses attempted; and consent of department. Students will be assigned to a school for a minimum of eight hours per week. This course may not be scheduled concurrently with student teaching.

**LIBS 6545 Literature for the Gifted and Talented** 3 cr.  
(LIBS 6545 and EDSP 6545 are cross-listed) An exploration of research relating to reading behavior of gifted youngsters, examination of criteria for assessing books useful in promoting cognitive growth of high-ability children, and selection and utilization of literature with this population.

**LIBS 6710 Nonfiction Across the Curriculum** 3 cr.  
(EDCI 6710 and LIBS 6710 are cross-listed) A critical examination of nonfiction books used in schools. Focus is on standards for evaluation and curricular uses for informational and biographical works.

**LIBS 4200G Adolescent Literature** 3 cr.  
(ENGL 4240 and LIBS 4200 are cross listed). A survey of books and materials appropriate for use with the adolescent reader. Emphasis will be placed on selection and discussion of books for today's teenagers. This course can be used to satisfy general degree requirements in literature for upper elementary education students only.

**LIBS 4500G Government Publications** 3 cr.  
Study of municipal, state, and federal documents of the United States and documents of the United Nations. Emphasis is placed on the nature and use of official publications with consideration given to their selection, acquisition, and organization.

**LIBS 4800G School Library Administration** 3 cr.  
A critical study of school library administration: selection and organization of materials, evaluation of the library and its relationship to the school's objectives, and trends in school librarianship.

**LIBS 4990G Special Topics in Library Science** 3 cr.  
Prerequisite: consent of department. Topic will vary from semester to semester. This course may be repeated once for credit.

**LIBS 4995G Practicum in Library Science** 3 cr.  
Prerequisite: nine semester hours of library science to include six semester hours from the following: LIBS 4410, 4520, 4800; a minimum grade-point average of "C" in all library science courses attempted; and consent of department. Students will be assigned to a school for a minimum of eight hours per week. This course may not be scheduled concurrently with student teaching.

## Library Instruction

**LIIN 1001 Information in Today's Society** 1 cr.  
This course will provide a basic introduction to efficient and effective use of libraries and their resources specifically those of the Earl K. Long Library. Lectures will deal with fundamentals of research and bibliography preparation in the humanities the sciences and the social sciences covering the basic abstracting and indexing services reference tools and catalogs. Emphasis will be given to modern methods of information retrieval using on-line interactive computer capability.

## Management

**MANG 3090 Internship in Management** 3 cr.  
Prerequisite: Management 3401 and 3402 or consent of department. This course will permit undergraduates to be engaged at least ten hours per week at the site of an assigned participating organization that directs the interns in specific projects relating to their majors. Students wishing to take this course should apply a semester in advance since enrollment is limited by internships available. This course may be repeated once for credit.

**MANG 3099 Senior Honors Thesis** 3 cr.  
Offered each semester. Prerequisite: consent of department and Honors Program Director. Extended and original research paper upon a topic of current concern in management under direction of a faculty member. Section number will correspond with credit to be earned.

**MANG 3402 Operations and Systems Management** 3 cr.  
Offered each semester. Prerequisites: Management 3401 Quantitative Methods Business and Economics 2785 Economics 1203. A study of systems concepts and their application in the design and operation of profit and non-profit organizations that are engaged in the production of goods or services in the domestic and global environments.

**MANG 3467 Human Resource Management** 3 cr.  
A study of the problems of personnel relations as applied to the employment, development, maintenance, and utilization of a labor force.

**MANG 3471 Business Communication** 3 cr.  
Developing skills and behavior to promote successful communication in the corporate setting with emphasis on theory, presentation technology, research skills, principles for written and oral business presentations, collaborative skills, interpersonal skills, multicultural communication, legal and ethical constraints, and employment. Students participate in case studies, experiential exercises, small-group activities involving problem solving and document development and design. Successful completion of this course satisfies the general degree requirement for oral competency.

**MANG 3472 Business Communication Oral** 3 cr.  
Offered each semester. An extensive study of oral business communication techniques, including use of visual aids. Students make oral presentations individually and in groups relating to a variety of business problems (e.g., analysis of quarterly, annual, and other financial reports; results of feasibility studies or of surveys;

conducting directive and non-directive interviews; dictating skills etc.).

**MANG 3475 Communications** 3 cr.  
Prerequisite: MANG 3401 or consent of department. The course introduces the student to the communication knowledge and skills necessary to function as a manager in a contemporary organization. Topical coverage includes the role of verbal and nonverbal language, perception, listening, and media choice. The role of communication is emphasized in a variety of managerial activities such as problem solving, interviewing, managing conflict and introducing change. Communication is examined at the intrapersonal, interpersonal, organizational, and system levels.

**MANG 3476 Management Science I** 3 cr.  
Prerequisite: MANG 3402. An introduction to the concepts, tools, and applications of management science in organizations. Emphasis will be on cases, application studies, and computer analysis of problems in the following areas: decision theory, managerial forecasting, inventory analysis, linear programming, transportation models, assignment models, integer and goal programming, queuing analysis, simulation, and network models.

**MANG 3478 Management Information Systems** 3 cr.  
Prerequisites: MANG 3401 and BA 2780. The nature of information systems and how computers assist management in decision making. Includes examples in creating and implementing management information systems and an analysis of computer hardware and software.

**MANG 3491 Independent Study in Management** 3 cr.  
Prerequisite: Approval of the directed individual study by the department chair and the supervising professor is required prior to registration. Offered each semester. The student should refer to the College of Business Administration Policy on Undergraduate Directed Individual Study available in the Management Department. This course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, conferences, and a research paper are required. May be repeated for up to six hours credit.

**MANG 3595 Academic Year Abroad: Special Topics in Management** 3 cr.  
This course in only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.

**MANG 4402 Research Methodology in Management** 3 cr.  
Prerequisite: MANG 3402. Background and understanding of research methodology and management. Interpretation of research, experimental and quasi-experimental design, problems of generalizability, hypothesis testing, control, and techniques for collecting and analyzing data.

**MANG 4407 Management of Technology and Innovation** 3 cr.  
Prerequisites: senior standing. May not receive graduate credit for both MANG 4407 and MANG 6407. Basic concepts involved with the management of technology in an organizational setting. Discussion of types of technologies, tactical and strategic impact of new organizational design considerations influenced by technology, fostering creativity and innovation in an organization, and technology/employee interface considerations. Text, readings, short case studies, videos, and guest speakers who are managers in technological environments are used as presentational media. Term project required.

**MANG 4420 Organizational Theory** 3 cr.  
Prerequisite: Management 3401 or consent of department. May not receive graduate credit for both MANG 4420 and MANG 6420. Designed to present general theory and analysis of organization

- design and structure. Includes a survey of both classical and contingency theories of organization, structure and process approaches to organizational design, and major dimensions of organizational design. Includes discussion of principles of organizational analysis with case studies.
- MANG 4471 Quality Management** 3 cr.  
Prerequisite: MANG 3402 or consent of department. May not receive graduate credit for both MANG 4471 and MANG 6471. Describes the basic concepts of quality planning and quality control. Discussion on quality improvement plans, Deming philosophy, and Juran's quality trilogy, the Deming prize and Baldrige award for quality excellence, and quality circles. Study of the statistical approach to quality control and the use of control charts and other quality control tools. Case studies from around the world on the implementation of total quality management.
- MANG 4473 Environmental Management** 3 cr.  
Prerequisite: senior standing or consent of department. Examination of the impact of environmental issues on organizational structure and operations from a management perspective with a focus on how environmental concerns create threats opportunities and affect organizational strategic management. Discussion of current environmental issues involving research and development, legislation, regulatory policies, and technological advances in environmental management and examination of the new "corporate culture" that integrates environmental considerations into organizational design. A special emphasis will be placed on public perceptions of environmental issues and how they affect business strategy.
- MANG 4477 Purchasing Materials Management** 3 cr.  
Prerequisites: MANG 3402 or consent of department. This course examines the role of purchasing in domestic and international business environments. The course introduces purchasing and material procurement tools and techniques necessary for meeting supply-demand market impact. Legal aspects of purchasing activity will also be addressed. The course encourages students' active participation in team projects and case studies.
- MANG 4478 Operations Planning and Control** 3 cr.  
Prerequisite: MANG 3402 or consent of instructor. An analytical study of modern concepts and techniques which have been developed to plan and control operations. The objective of the course is to bring the range of concepts and techniques to a point of useful application. The practical design of production planning and inventory control systems is the focus of study.
- MANG 4480 Business Policies and Problems** 3 cr.  
Offered each semester. Prerequisites: MANG 3402, MKT 3501, FIN 3300, and senior standing. Specific problems involved in the formulation of consistent business policies and maintenance of an efficient organization. This course is not open to graduate students.
- MANG 4497 Current Topics in Management** 1-4 cr.  
Prerequisite: MANG 3401 or consent of department. Designed as a seminar to expose the student to current research and theory in a variety of management topics. May be repeated once for credit
- MANG 4697 Washington Center Special Topics** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- MANG 6021 Law and Contemporary Problems** 3 cr.  
Prerequisite: Business Administration 3010 or equivalent. A study of the judicial and legislative processes and their role in dealing with significant modern business problems.
- MANG 6401 Seminar in Organizational Behavior** 3 cr.  
Prerequisite: Management 3401 or Engineering Management 6101 or consent of department. A study of organizational behavior across all levels of organizational life: the individual, interpersonal, group, organizational, and society. Problems to be discussed and dealt with include motivation, communications, leadership, group dynamics, power, organizational structures and design, and various types of environmental constraints including competition, markets, and governmental regulations. Lecture, discussion, and group problem-solving project reports are included in instructional methodology.
- MANG 6407 Management of Technology and Innovation** 3 cr.  
Prerequisite: MANG 6401 or Engineering Management 6401 or consent of department. May not receive credit for both MANG 6407 and MANG 4407. Concepts involved with the management of technology in an organizational setting. Discussion on the issues of types of technologies, tactical and strategic impact of new technologies, justification and assessment of new technologies, organizational design considerations influenced by technology, fostering creativity and innovation in an organization, and technology-employee interface considerations. Text, readings, case studies, and videos are used as presentational media. Term project required.
- MANG 6446 International Management** 3 cr.  
Prerequisites: Management 3401 Marketing 3501 Economics 1203 and 1204 Accounting 2100 or equivalents. This course will deal with complex managerial problems of the multinational enterprise. The principal areas of study will be: 1) nature and scope of international business; 2) international business and the nation-state; 3) assessing and forecasting the international business environment; and 4) managing the multinational enterprise.
- MANG 6467 Personnel/Human Resource Management** 3 cr.  
Prerequisite: Management 3401 or Engineering Management 6101 or consent of department. A study of the theories and techniques of modern human resource management with respect to attracting, motivating, and retaining a competent workforce. Emphasis of this course is on the management of a human resource function.
- MANG 6471 Total Quality Management** 3 cr.  
Prerequisites: Management 6476 or consent of the department. May not receive graduate credit for both Management 4471 and 6471. The essential concepts, practices, and methods of total quality management. Guidelines for managers to provide competent and visible leadership to insure effective quality assurance. The use of statistical quality in service and manufacturing organizations. Cases on the management of TQM programs.
- MANG 6476 Operations Management** 3 cr.  
Prerequisites: QMBE 6780 or ENMG 6112 or consent of department. A study of techniques used in the analysis, design, and control of organizational operations. Emphasis on total quality management of manufacturing and service sector operations. Forecasting, inventory control, layout and location, queuing, automation and JIT are discussed as well as cases and computer programs for operations management.
- MANG 6480 Seminar in Business Policies** 3 cr.  
(Open to master's candidates in their final semester only.) A study of business policies integrating the functions of all fields of business administration. The course is designed to give the student the top management viewpoint of the operation of the business enterprise. Strategy development and implementation are emphasized

**MANG 6491 Independent Study in Management** 3 cr.  
Prerequisites: Management 3401, Marketing 3501, Economics 1203, and 1204, three semester hours in accounting, and consent of department. Readings, weekly or biweekly reports, conferences, and a research paper under the direction of a graduate faculty member is required.

**MANG 4402G Research Methodology in Management** 3 cr.  
Prerequisite: MANG 3402. Background and understanding of research methodology and management. Interpretation of research, experimental and quasi-experimental design, problems of generalizability, hypothesis testing, control, and techniques for collecting and analyzing data.

**MANG 4407G Management of Technology and Innovation** 3 cr.  
Prerequisites: senior standing. May not receive graduate credit for both MANG 4407 and MANG 6407. Basic concepts involved with the management of technology in an organizational setting. Discussion of types of technologies, tactical and strategic impact of new organizational design considerations influenced by technology, fostering creativity and innovation in an organization, and technology/employee interface considerations. Text, readings, short case studies, videos, and guest speakers who are managers in technological environments are used as presentational media. Term project required.

**MANG 4420G Organizational Theory** 3 cr.  
Prerequisite: Management 3401 or consent of department. May not receive graduate credit for both MANG 4420 and MANG 6420. Designed to present general theory and analysis of organization design and structure. Includes a survey of both classical and contingency theories of organization, structure and process approaches to organizational design, and major dimensions of organizational design. Includes discussion of principles of organizational analysis with case studies.

**MANG 4471G Quality Management** 3 cr.  
Prerequisite: MANG 3402 or consent of department. May not receive graduate credit for both MANG 4471 and MANG 6471. Describes the basic concepts of quality planning and quality control. Discussion on quality improvement plans, Deming philosophy, and Juran's quality trilogy, the Deming prize and Baldrige award for quality excellence, and quality circles. Study of the statistical approach to quality control and the use of control charts and other quality control tools. Case studies from around the world on the implementation of total quality management.

**MANG 4473G Environmental Management** 3 cr.  
Prerequisite: senior standing or consent of department. Examination of the impact of environmental issues on organizational structure and operations from a management perspective with a focus on how environmental concerns create threats opportunities and affect organizational strategic management. Discussion of current environmental issues involving research and development, legislation, regulatory policies, and technological advances in environmental management and examination of the new "corporate culture" that integrates environmental considerations into organizational design. A special emphasis will be placed on public perceptions of environmental issues and how they affect business strategy.

**MANG 4477G Purchasing Materials Management** 3 cr.  
Prerequisites: MANG 3402 or consent of department. This course examines the role of purchasing in domestic and international business environments. The course introduces purchasing and material procurement tools and techniques necessary for meeting supply-demand market impact. Legal aspects of purchasing activity

will also be addressed. The course encourages students' active participation in team projects and case studies.

**MANG 4478G Operations Planning and Control** 3 cr.  
Prerequisite: MANG 3402 or consent of instructor. An analytical study of modern concepts and techniques which have been developed to plan and control operations. The objective of the course is to bring the range of concepts and techniques to a point of useful application. The practical design of production planning and inventory control systems is the focus of study.

**MANG 4480G Business Policies and Problems** 3 cr.  
Offered each semester. Prerequisites: MANG 3402, MKT 3501, FIN 3300, and senior standing. Specific problems involved in the formulation of consistent business policies and maintenance of an efficient organization. This course is not open to graduate students.

**MANG 4497G Current Topics in Management** 1-4 cr.  
Prerequisite: MANG 3401 or consent of department. Designed as a seminar to expose the student to current research and theory in a variety of management topics. May be repeated once for credit.

**MANG 4697G Washington Center Special Topics** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).

**Mathematics**

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**MATH 1021 Modern Mathematics for Elementary Teachers** 3 cr.  
Offered each semester. Prerequisites: Developmental Mathematics 0107 or satisfactory performance on either the departmental placement exam or the ACT or SAT. Mathematics 1021 is prerequisite to Mathematics 1022. Logic and sets, numeration systems, mathematical systems; the integers, elementary number theory; the rational numbers, the real numbers. Sentences, the number line. Elementary Euclidean and coordinate geometry. These courses may be used for degree credit only in the College of Education.

**MATH 1022 Modern Mathematics for Elementary Teachers** 3 cr.  
Offered each semester. Mathematics 1021 is prerequisite to Mathematics 1022. Logic and sets, numeration systems, mathematical systems; the integers, elementary number theory; the rational numbers, the real numbers. Sentences, the number line. Elementary Euclidean and coordinate geometry. These courses may be used for degree credit only in the College of Education.

**MATH 1031 A Survey of Mathematical Thought** 3 cr.  
Offered each semester. Prerequisite: DEVM 0106 or satisfactory performance on either the departmental placement exam or the ACT or SAT. MATH 1031 is prerequisite to MATH 1032. Not open to students with credit in MATH 2111. Non-technical survey of major branches of mathematics with examples of problems and methods in each.

**MATH 1032 A Survey of Mathematical Thought** 3 cr.  
Offered each semester. Prerequisite: DEVM 0106 or satisfactory performance on either the departmental placement exam or the ACT or the SAT. MATH 1031 is prerequisite to MATH 1032. Not open to students with credit in MATH 2111. Non-technical survey of major branches of mathematics with examples of problems and methods in each.

- MATH 1111 Algebra** 3 cr.  
Prerequisite: Developmental Mathematics 0107 or satisfactory performance on the departmental placement exam, the ACT, or the SAT. Real numbers and equations, functions, polynomial functions and graphs, exponential and logarithmic functions. Designed for students who are not required to take calculus. This course will not serve as a prerequisite to Mathematics 1126; it will be followed by Mathematics 1116 or 1140 according to major. A strong component of this course will be applications taken from different areas of concentration. Credit for both Mathematics 1115 and 1125 will not be allowed.
- MATH 1112 Plane Trigonometry** 3 cr.  
Prerequisite: Mathematics 1115 with a grade of C or better. Introduction to trigonometric functions, graphs of trigonometric functions, trigonometric identities, applications of trigonometry, linear and nonlinear systems, binomial theorem. Designed for students who are not required to take calculus. This course will not serve as a prerequisite to Mathematics 2107 or 2111. A strong component of this course will be applications taken from different areas of concentration. Credit for both Mathematics 1116 and 1126 will not be allowed.
- MATH 1114 College Algebra and Plane Trigonometry** 6 cr.  
Offered each semester. Prerequisite: Sufficiently high scores on both the mathematics part of the ACT and a UNO placement test. This course is intended only for those students who are preparing to take MATH 2107 or 2111.
- MATH 1140 Finite Mathematics** 3 cr.  
Offered each semester. Prerequisite: Mathematics 1115 and Mathematics 1125 or consent of department. Introduction to logic and naive set theory, partitions and counting, probability theory, vectors and matrices, linear programming and applications to the behavioral sciences.
- MATH 2010 Calculus for Business and Social Sciences** 3 cr.  
Offered each semester. Prerequisite: Mathematics 1115 or 1125 or 1140. An intuitive approach to calculus: straight line, slope and rate, conic sections; polynomials, exponential, and logarithmic functions; sequences, limits, continuity, techniques of differentiation; maximum and minimum problems; techniques of integration; applications to models from business, sociology, and psychology. Credit may not be earned for any two of Mathematics 2010, 2107, and 2111.
- MATH 2090 History of Mathematics** 3 cr.  
Prerequisite: credit or registration in MATH 2112. A survey starting with the mathematics of the Babylonians and the Egyptians, continuing with the logic, geometry, and number theory of the Greeks; development of logarithms and projective geometry, analytic geometry, calculus, and the beginnings of modern analysis and the origins of modern algebra.
- MATH 2107 Calculus and Analytic Geometry** 3 cr.  
Offered each semester. Prerequisite: MATH 1126 with a grade of C or better. MATH 2107 with a grade of C or better recommended is prerequisite to MATH 2108; MATH 2108 with a grade of C or better recommended is prerequisite to MATH 2109. These courses cover the same topics in three semesters that MATH 2111, 2112 cover in two. A student may not receive more than five hours of degree credit for taking MATH 2107 and 2111 or more than six hours for MATH 2107, 2108, and 2111 or more than 10 hours for MATH 2107, 2108, 2109, and MATH 2111, 2112.
- MATH 2108 Calculus and Analytic Geometry** 3 cr.  
Offered each semester. Prerequisite: MATH 1126 with a grade of C or better. MATH 2107 with a grade of C or better recommended is prerequisite to MATH 2108; MATH 2108 with a grade of C or better recommended is prerequisite to MATH 2109. These courses cover the same topics in three semesters that MATH 2111, 2112 cover in two. A student may not receive more than five hours of degree credit for taking MATH 2107 and 2111 or more than six hours for MATH 2107, 2108, and 2111 or more than 10 hours for MATH 2107, 2108, 2109, and MATH 2111, 2112.
- MATH 2109 Calculus and Analytic Geometry** 4 cr.  
Offered each semester. Prerequisite: MATH 1126 with a grade of C or better. MATH 2107 with a grade of C or better recommended is prerequisite to MATH 2108; MATH 2108 with a grade of C or better recommended is prerequisite to MATH 2109. These courses cover the same topics in three semesters that MATH 2111, 2112 cover in two. A student may not receive more than five hours of degree credit for taking MATH 2107 and 2111 or more than six hours for MATH 2107, 2108, and 2111 or more than 10 hours for MATH 2107, 2108, 2109, and MATH 2111, 2112.
- MATH 2111 Calculus with Analytic Geometry** 5 cr.  
Offered each semester. Prerequisite: MATH 1126 with a grade of C or better. MATH 2111 with a grade of C or better recommended is prerequisite to MATH 2112. Brief review of pre-calculus topics; limits, continuity; algebraic and transcendental functions, their derivatives, their inverses and their integrals; fundamental theorems, conic sections, maximum-minimum problems. Integration techniques, polar coordinates, sequences, series, convergence, Taylor series, L'Hospital's Rule, improper integrals, plane vectors, lines, solids of revolution.
- MATH 2112 Calculus with Analytic Geometry** 5 cr.  
Offered each semester. Prerequisite: MATH 1126 with a grade of C or better. MATH 2111 with a grade of C or better recommended is prerequisite to MATH 2112. Brief review of pre-calculus topics; limits, continuity; algebraic and transcendental functions, their derivatives, their inverses and their integrals; fundamental theorems, conic sections, maximum-minimum problems. Integration techniques, polar coordinates, sequences, series, convergence, Taylor series, L'Hospital's Rule, improper integrals, plane vectors, lines, solids of revolution.
- MATH 2115 Calculus of Several Variables** 3 cr.  
Offered each semester. Prerequisite: MATH 2109 or 2112 with a grade of C or better recommended or consent of department. Vectors and solid analytic geometry, partial derivatives, multiple integrals, line integrals, Green's Theorem, divergence, curl and applications.
- MATH 2221 Elementary Differential Equations** 3 cr.  
Offered each semester. Prerequisite: MATH 2109 or 2112 with a grade of C or better recommended or consent of department. Differential equations of first and higher order; constant coefficient equations with and without forcing terms and applications; series solutions; Laplace transforms and systems of differential equations.
- MATH 2271 Mathematical Programming** 3 cr.  
(Same as Computer Science 2271) Fall semester. Prerequisites: Mathematics 2109 or 2112 and Computer Science 1060 or consent of department. On-line programming techniques on computer terminals. Development and programming of algorithms of an intermediate nature for curve fitting, matrix algebra, solution of ordinary differential equations, zeros of equations, and numerical integration. Data analysis and floating point arithmetic.
- MATH 2314 Elementary Statistical Methods** 3 cr.  
Prerequisite: A grade of C or better in MATH 1115 or MATH 1125 in six hours of mathematics courses numbered at least 1000 or consent of department. Introduction to statistical methods. Topics include data analysis, frequency distributions, probability, inference, estimation, hypothesis testing, regression and correlation.

- MATH 2400 Geometry** 3 cr.  
Spring semester. Prerequisite: MATH 2109 or 2112 or consent of department. Absolute geometry, introduction to non-Euclidean geometries, Euclidean geometries, metric approach.
- MATH 2511 Introduction to Linear Algebra** 3 cr.  
Offered each semester. Prerequisite: MATH 2109 or 2112 or consent of department. Matrices, systems of linear equations, vector spaces, linear transformations, determinants, inner products and norms, eigenvalues and eigenvectors, diagonalization.
- MATH 2721 Introduction to Discrete Structures** 3 cr.  
Prerequisite: MATH 1116 or 1126. An introduction to the discrete structures that serve as a foundation for mathematics and computer science: set theory and mathematical logic; binary relations; counting and algorithm analysis; induction and strings.
- MATH 2990 Special Topics** 1-3 cr.  
Prerequisite: consent of department. May be repeated up to six credit hours. Subject matter may change from semester to semester. Section number will correspond with credit to be earned.
- MATH 2998 Independent Study: Readings** 1-3 cr.  
Prerequisite: consent of department. Course may be repeated to a total of three hours. The course consists of directed readings designed to meet the needs and interests of the individual student; regular conferences between the student and the instructor are required. Section number will correspond with credit to be earned.
- MATH 3099 Senior Honor Thesis** 1-6 cr.  
Prerequisite: consent of department and the director of the Honors Program. Honors thesis research in mathematics under the direction of a faculty member. May be repeated until thesis is accepted for a total of six credits. Section number will correspond with credit earned.
- MATH 3300 Statistical Computer Packages** 1 cr.  
Prerequisite: MATH 2314 or consent of department. Introduction to statistical packages, emphasis will be on the use of SAS.
- MATH 3512 Introduction to Abstract Algebra** 3 cr.  
Prerequisite: MATH 2511. An introduction to modern algebraic structures: relations, mappings, semigroups, groups, rings and fields.
- MATH 4010 Introduction to Modern Algebra** 3 cr.  
Prerequisites: MATH 1021 and 1022. Groups, finite groups and permutation groups, rings and fields. Linear algebra, vector spaces, determinants and matrices, linear transformations. This course may be used for degree credit only in the elementary education curriculum at the undergraduate or graduate level.
- MATH 4020 Geometry I** 3 cr.  
Incidence and separation in planes and spaces; congruences between lines angles and triangles; parallel postulate; perpendicular lines and planes in space; constructions with ruler and compass. This course may be used for degree credit only in the elementary education curriculum at the undergraduate or graduate level.
- MATH 4030 Probability and Finite Mathematics** 3 cr.  
Prerequisites: MATH 1021 and 1022. Probability theory, convex sets, finite Markov chains, continuous probability theory. This course may be used for degree credit only in the elementary education curriculum at the undergraduate or graduate level.
- MATH 4101 Advanced Calculus** 3 cr.  
Prerequisite: MATH 2115. MATH 4101 is prerequisite to MATH 4102. These courses emphasize a balance between proofs and techniques in intermediate analysis involving one and several variables. Limits, continuity, differentiation, integration and convergence. Series of functions, functional dependence, Jacobian, vector analysis or other techniques of use in applications.
- MATH 4102 Advanced Calculus** 3 cr.  
Prerequisite: MATH 2115. MATH 4101 is prerequisite to MATH 4102. These courses emphasize a balance between proofs and techniques in intermediate analysis involving one and several variables. Limits, continuity, differentiation, integration and convergence. Series of functions, functional dependence, Jacobian, vector analysis or other techniques of use in applications.
- MATH 4213 Fourier Series and Transforms** 3 cr.  
Prerequisite: MATH 2115 and 2221 or consent of department. Fourier series and discrete frequency spectra, Fourier integral and continuous spectra, transformation of special functions, applications in physics and engineering.
- MATH 4221 Intermediate Ordinary Differential Equations** 3 cr.  
Prerequisite: MATH 2221 and 2511 or consent of department. Topics to be selected from the following: introduction to qualitative theory, phase plane analysis of autonomous systems, classification of equilibria, stability theory, Liapunov methods, limit cycles, Poincaré Bendixson theorem, introduction to bifurcation theory and chaotic oscillations, Frobenius method for series solutions, special functions, Sturm comparison and separation theorems.
- MATH 4224 Partial Differential Equations I** 3 cr.  
Prerequisite: MATH 2115 and 2221 or consent of department. Basic techniques for solving linear partial differential equations, separation of variables, eigenfunction expansions, integral transforms, Sturm-Liouville boundary value problems, initial value problems and boundary value problems for hyperbolic, parabolic, and elliptic equations, fundamental solutions, maximum principle, classical and modern applications.
- MATH 4230 Finite Element Analysis** 3 cr.  
Prerequisites: MATH 2115, 2221, 2511, and a knowledge of Fortran or consent of department. Variational principle, weighted residual methods, finite element analysis of one and two dimensional steady state and transient boundary value problems involving partial differential equations, software development and implementations.
- MATH 4240 Boundary Element Method** 3 cr.  
Prerequisites: MATH 2115, 2221, and 2511. Some knowledge of computer programming is also required. Weak variational formulation, fundamental solutions, formulation of two- and three-dimensional boundary element equations, potential problems, nonconvex regions, linear elasticity, fluid flows, acoustics, software development.
- MATH 4251 Numerical Analysis** 3 cr.  
Prerequisite: MATH 2115 and a working knowledge of FORTRAN or PASCAL, or consent of department. Numerical solution of systems of linear and nonlinear equations; interpolation, approximation, and minimization of functions; numerical integration.
- MATH 4252 Numerical Analysis** 3 cr.  
Prerequisites: MATH 2221 and 4251. Eigenvalue problems; numerical Fourier transforms; modeling of data; introduction to numerical solution of initial and boundary value problems in ordinary and partial differential equations.
- MATH 4271 Advanced Mathematical Programming** 3 cr.  
(Same as Computer Science 4271) Prerequisites: Mathematics 2271 and either Mathematics 4102 or 4251 or consent of department. Algorithms and numerical techniques for advanced work in mathematical programming. Approximations by interpolation and least squares, orthogonal polynomials, matrix inversion and other selected topics. General information handling languages with applications to symbol manipulations and recursive formulas.

- MATH 4280 Mathematical Modeling for Continuous Systems** 3 cr.  
Prerequisite: MATH 2115 and 2221, or consent of department. General principles in mathematical modeling, derivation and analysis of specific models using ordinary and partial differential equations; examples drawn from the applied sciences may include traffic flow, biological systems, mechanical systems, discussion of stability and dependence on parameters.
- MATH 4301 Analysis of Variance and Experimental Design** 3 cr.  
Prerequisite: MATH 2314 or an equivalent course in statistics, and credit or concurrent registration in Mathematics 3300; or consent of department. Only one of MATH 4301 or MATH 6301 may be counted toward a master's degree in Mathematics. An introduction to the SAS statistical computer package. Basic analysis of variance with fixed and random effects models, multifactor analysis of variance, analysis of covariance. Experimental designs including completely randomized designs, randomized block designs, nested designs, and Latin squares.
- MATH 4304 Introduction to Regression Analysis** 3 cr.  
Prerequisite: MATH 2314 or an equivalent course in statistics, and credit or concurrent registration in MATH 3300; or consent of department. Only one of MATH 4304 or 6304 may be counted toward a master's degree in Mathematics. Linear regression, inferences in regression analysis, aptness of model and remedial measures, matrices, multiple and polynomial regression, indicator variables, multi-collinearity, selection of independent variables, nonlinear regression. SAS will be used for data analysis.
- MATH 4311 Introduction to Mathematical Statistics** 3 cr.  
Prerequisite: MATH 2115 or consent of department. MATH 4311 is prerequisite to MATH 4312. Axiomatic probability, discrete and continuous distributions, expectation, estimation, central limit theorem, confidence intervals and tests of hypotheses, regression, Bayesian statistics, other topics.
- MATH 4312 Introduction to Mathematical Statistics** 3 cr.  
Prerequisite: MATH 2115 or consent of department. MATH 4311 is prerequisite to MATH 4312. Axiomatic probability, discrete and continuous distributions, expectation, estimation, central limit theorem, confidence intervals and tests of hypotheses, regression, Bayesian statistics, other topics.
- MATH 4341 Nonparametric Statistics** 3 cr.  
Prerequisite: MATH 4301 or 4304, or consent of department. Organizing and summarizing data; one-sample, two-sample, and k-sample tests; tests based on the binomial distribution; confidence intervals; Wilcoxon type tests; Kruskal-Wallis and Friedman tests; contingency tables; tests based on ranks; and Kolgoromov-Smirnoff type statistics.
- MATH 4360 Mathematical Information Theory** 3 cr.  
Prerequisite: MATH 2010 or 2112 or consent of department. A self-contained development of both elementary applications and basic probability theory for a study of certain qualitative and quantitative concepts involving information, uncertainty, entropy, information channels, transmission rates, and capacities and coding.
- MATH 4371 Probability Theory** 3 cr.  
Prerequisite: MATH 2115 or consent of department. Discrete probability theory, Markov chains, elementary limit laws and theorems.
- MATH 4372 Applied Stochastic Processes** 3 cr.  
Prerequisite: MATH 4311 or 4371 or consent of department. Introduction to Poisson processes, Brownian motion, branching processes, and related topics with applications.
- MATH 4411 Introduction to Complex Analysis** 3 cr.  
Prerequisite: Mathematics 4102 or consent of department. Complex plane, analytic functions, Cauchy-Riemann equations, mappings by elementary functions, complex integration, Cauchy's theorem, Cauchy integral formula and applications, Taylor series, Laurent series, isolated singularities, residue theorem and applications.
- MATH 4511 Linear Algebra** 3 cr.  
Prerequisite: MATH 3512 or consent of department. Inner product spaces, dual spaces, canonical forms, the spectral theorem, quadratic forms, operators, the classical groups, multilinear algebra and applications.
- MATH 4512 Abstract Algebra** 3 cr.  
Prerequisite: MATH 3512. Ideals, Euclidean and principal ideal domains, finite fields, Sylow theorems, and solvable groups.
- MATH 4518 Elementary Number Theory** 3 cr.  
Prerequisite: consent of department. Divisibility, congruences, power residues, quadratic residues, certain arithmetic functions and selected topics.
- MATH 4524 Mathematical Logic** 3 cr.  
Prerequisite: MATH 2115. Propositional and predicate calculus; formal systems; computability and decidability.
- MATH 4527 Formal Languages and Automata** 3 cr.  
(Math 4527 and CSCI 4103 are cross-listed) Prerequisite: CSCI 2125 or MATH 3512 or consent of department. Introduction to formal languages and their relation to automata; the Chomsky hierarchy of classes of grammars; normal forms; recognition of languages by automata; parsing classes of context free languages; decidability problems.
- MATH 4611 Topology** 3 cr.  
Prerequisite: MATH 4101 or consent of department. Topological spaces, continuous maps and homeomorphisms, product spaces, connectedness, separation axioms, compactness, and metric spaces.
- MATH 4711 Graph Theory** 3 cr.  
Prerequisite: MATH 2511 or MATH 2721 or consent of department. An introduction to graph theory and its applications; the basic theorems and algorithms. Paths and cycles, colorings, planarity, directed graphs, networks.
- MATH 4721 Combinatorics** 3 cr.  
Prerequisite: MATH 2511 or 2721 or consent of department. Permutations, combinations, and partitions; inclusion-exclusion principle; generating functions and recurrence relations; matchings; combinatorial designs.
- MATH 4990 Special Topics** 3 cr.  
Prerequisite: consent of department. Six hours maximum will be accepted for graduate credit.
- MATH 4991 Special Topics** 3 cr.  
Prerequisite: consent of department. Six hours maximum will be accepted for graduate credit.
- MATH 4992 Special Topics** 3 cr.  
Prerequisite: consent of department. Six hours maximum will be accepted for graduate credit.
- MATH 4998 Selected Readings in Mathematics** 1-3 cr.  
Prerequisite: consent of department. This course may be repeated to a total of six credits. The course consists of directed readings designed to meet the needs and interests of the individual student; regular conferences between the student and the instructor are required. The section number will correspond with credit to be earned.
- MATH 6005 Higher Algebra** 3 cr.  
Prerequisites: a working knowledge of college algebra and consent of department. (This course is intended for candidates in the M.A. in Science Teaching program.) Topics covered include inequalities,

- complex numbers, theory of equations, mathematical induction, binomial theorem, progressions, infinite series and applications.
- MATH 6006 Analytic and Vector Geometry** 3 cr.  
Prerequisites: a working knowledge of plane geometry and college algebra and consent of department. (This course is intended for candidates in the M.A. in Science Teaching program.) Plane and solid geometry by analytic methods. Topics covered include vectors, lines, conic sections, translation and rotation of axes, polar coordinates, parametric representations; plane and three-space curves and surfaces.
- MATH 6007 Topics in Higher Algebra and Geometry** 3 cr.  
Prerequisite: MATH 6005 or 6006 or consent of department. (This course is intended for candidates in the M.A. in Science Teaching program.) Topics selected from inequalities, theory of equations, Euclidean geometry, and non-Euclidean geometry.
- MATH 6020 Geometry II** 3 cr.  
Prerequisites: Mathematics 1021 1022 and 4020. Space figures: similarity and trigonometry, area and volume measurement, elements of spherical geometry, plane coordinate geometry. This course may be used for degree credit only in the elementary education curriculum.
- MATH 6201 Introduction to Applied Mathematics** 3 cr.  
Prerequisites: MATH 2221, MATH 2115, and MATH 4101 or consent of department. MATH 4101 may be taken concurrently. System of linear ordinary differential equations, fundamental matrices, nonlinear systems of ODE's, stability, limit cycles, separation of variables, heat equation, wave equation, Laplace's equation, Sturm-Liouville boundary value problems, Green's functions, integral transforms, conformal mapping, complex intergration.
- MATH 6211 Applied Analysis** 3 cr.  
Prerequisite: MATH 4411. Calculus of residues, Fourier and Laplace transforms, orthogonal expansion; special functions; solution of boundary value problems of partial differential equations by various methods; separation of variable, transform techniques; Sturm-Liouville theory; perturbation and asymptotic developments; Green's functions; the method of characteristics.
- MATH 6221 Advanced Differential Equations** 3 cr.  
Prerequisites: MATH 4221 and 4411. Ordinary differential equations in the real and complex domains, existence and uniqueness theorems, linear systems with constant and periodic coefficients. Linear differential equations of order  $n$ , self-adjoint eigenvalue problems, nonlinear equations, and stability theory.
- MATH 6224 Partial Differential Equations II** 3 cr.  
Prerequisite: MATH 4224 or consent of department. Topics in modern linear and nonlinear partial differential equations, distributions and weak solutions, method of characteristics, shock waves, Green functions, fixed point theorems, reaction diffusion equations.
- MATH 6230 Advanced Finite Element Analysis** 3 cr.  
Prerequisites: MATH 4230 or 4224 or consent of department. Some knowledge of computer programming is required. Galerkin method, linear triangular elements, bilinear rectangular elements, axisymmetric elements, isoparametric elements, heat transfer by conduction and convection, torsion of noncircular sections, ground water with sources and sinks, biharmonic equation, vibration of membrane, iterative methods, software maintenance and development.
- MATH 6242 Functional Analysis** 3 cr.  
Prerequisite: MATH 4102 or consent of department. Topics will be selected from the following: metric spaces, normed spaces, Banach spaces, functionals, dual spaces and weak topology, inner product spaces, Hilbert spaces, compact operators, spectral analysis, fixed point theorems, implicit function theorem, Fredholm theory.
- MATH 6260 Optimal Control** 3 cr.  
Prerequisites: MATH 2221 and 4102 or consent of department. The calculus of variations and the Pontryagin maximum principle. Optimal control of linear and nonlinear systems. Algorithms for computing optimal controls.
- MATH 6270 Advanced Optimization** 3 cr.  
Prerequisite: MATH 4101 and 4270 or approval of department. Theory and application of advanced computational methods for extremizing linear and nonlinear functions of many variables including constrained and unconstrained problems. Particular topics include a review of the simplex method an introduction to interior point methods for linear programming problems, descent methods, Newton-like methods, conjugate direction methods, and quadratic and nonlinear programming.
- MATH 6290 Topics in Numerical Analysis** 3 cr.  
Prerequisite: consent of department.
- MATH 6301 Applied Statistics** 3 cr.  
Prerequisite: credit or concurrent registration in MATH 3300 or consent of department. Only one of MATH 4301 or 6301 may be counted toward a master's degree in mathematics. Data analysis, analysis of variance, regression analysis, nonparametric methods, use of computer packages.
- MATH 6303 Multivariate Statistical Analysis** 3 cr.  
Prerequisite: MATH 6301 or consent of department. Multivariate normal distribution, test of hypothesis on means, multivariate analysis of variance, canonical correlation.
- MATH 6304 Regression Analysis** 3 cr.  
Prerequisite: MATH 6301 or consent of department. Linear regression, regression diagnostics, multiple regression, nonlinear regression. Only one of MATH 4304 or 6304 may be counted toward a master's degree in Mathematics.
- MATH 6311 Mathematical Statistics** 3 cr.  
Prerequisites: Consent of department. MATH 6311 is prerequisite to MATH 6312. Theory of probability distributions, random variables and functions of random variables, multivariate and conditional distributions, order statistics, sampling distributions, theory of estimation and hypothesis testing.
- MATH 6312 Mathematical Statistics** 3 cr.  
Prerequisites: Consent of department. MATH 6311 is prerequisite to MATH 6312. Theory of probability distributions, random variables and functions of random variables, multivariate and conditional distributions, order statistics, sampling distributions, theory of estimation and hypothesis testing.
- MATH 6321 Sampling Theory** 3 cr.  
Prerequisite: MATH 4311 or consent of department. Simple random sampling with and without replacement, sampling with varying probabilities, stratified sampling, cluster sampling, subsampling, systematic sampling, two-stage sampling, and sequential sampling.
- MATH 6331 Categorical Data Analysis** 3 cr.  
Prerequisite: MATH 4311 or consent of department. Analysis of contingency tables, exact small sample tests, large sample inference, logistic regression, logit, probit, extreme value, loglineaar and other generalized linear models, model building and applications.
- MATH 6341 Linear Statistical Models** 3 cr.  
Prerequisite: MATH 4312 or consent of department. Multivariate normal distribution, matrix operations, distributions of quadratic forms, general linear hypotheses, standard models, computing techniques.

- MATH 6342 Design of Experiments** 3 cr.  
Prerequisite: MATH 4312 or consent of department. Matrix methods including calculus, principles of experimental design, techniques of analysis.
- MATH 6351 Time Series Analysis** 3 cr.  
Prerequisite: MATH 4311 or consent of department. Autocorrelation, spectral analysis and filtering, autoregressive (AR) models, moving average (MA) models, ARMA models, ARIMA models, model identification, forecasting, and estimation of parameters.
- MATH 6361 Statistical Quality Control** 3 cr.  
Prerequisite: MATH 4301 or 4304 or consent of department. Management and quality, construction and analysis of control charts for variables and attributes, Markov chain representations of control charts, capability analysis, reliability, continuous sampling plans, acceptance sampling, tolerances.
- MATH 6371 Probability** 3 cr.  
Prerequisite: MATH 4371 or 6450 or consent of department. Measure theoretic origins, infinite dimensional probability spaces, modes of convergence, laws of large numbers, central limit theorems; certain topics from infinitely divisible laws, stochastic processes, separability, martingales and semi-martingales, ergodic theory, systems theory and stopping rules.
- MATH 6381 Biostatistics** 3 cr.  
Prerequisite: MATH 6311 or consent of the department. Biostatistical design of medical studies, one- and two-sample inference, counting data, nonparametric, distribution-free and permutation models: robust procedures, simple and multiple regression, multiple comparisons, cross-over designs, discrimination and classification, and other topics.
- MATH 6390 Topics in Probability and Statistics** 3 cr.  
Prerequisite: consent of department.
- MATH 6411 Complex Analysis** 3 cr.  
Prerequisite: MATH 4411. Analytic continuation, reflection principle, argument principle, Rouché's theorem. Convergence of sequences, series, and infinite products of analytic functions. Entire functions, conformal mappings, Riemann mapping theorem, Riemann surfaces, gamma function, Riemann zeta function.
- MATH 6450 Measure and Integration** 3 cr.  
Prerequisite: MATH 4102 or consent of department. MATH 6450 is prerequisite to MATH 6451. Measure theory, integration, types of convergence, absolute continuity, function spaces.
- MATH 6451 Measure and Integration** 3 cr.  
Prerequisite: MATH 4102 or consent of department. MATH 6450 is prerequisite to MATH 6451. Measure theory integration types of convergence absolute continuity function spaces.
- MATH 6490 Topics in Analysis** 3 cr.  
Prerequisite: consent of department.
- MATH 6491 Topics in Analysis** 3 cr.  
Prerequisite: consent of department.
- MATH 6492 Topics in Analysis** 3 cr.  
Prerequisite: consent of department.
- MATH 6511 Algebra** 3 cr.  
Prerequisite: MATH 4512. Infinite Abelian groups, ordered groups, free groups, finite groups, rings, fields, field extensions, finite fields, Galois theory.
- MATH 6590 Topics in Algebra** 3 cr.  
Prerequisite: consent of department.
- MATH 6591 Topics in Algebra** 3 cr.  
Prerequisite: consent of department.
- MATH 6592 Topics in Algebra** 3 cr.  
Prerequisite: consent of department.
- MATH 6611 Topology** 3 cr.  
Prerequisite: MATH 4611. Homotopy, dimension theory, uniform spaces, compactification and other basic advanced topics.
- MATH 6690 Topics in Topology** 3 cr.  
Prerequisite: MATH 6611 or consent of department.
- MATH 6998 Advanced Readings in Mathematics** 1-3 cr.  
Prerequisite: consent of department. This course may be repeated to a total of six credits. The course consists of directed readings designed to meet the needs and interests of the individual student; regular conferences between the student and the instructor are required. The section number will correspond with credit to be earned.
- MATH 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- MATH 7040 Examination or Thesis Only** 0 cr.  
No credit. Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- MATH 4010G Introduction to Modern Algebra** 3 cr.  
Prerequisites: MATH 1021 and 1022. Groups, finite groups and permutation groups, rings and fields. Linear algebra, vector spaces, determinants and matrices, linear transformations. This course may be used for degree credit only in the elementary education curriculum at the undergraduate or graduate level.
- MATH 4020G Geometry I** 3 cr.  
Incidence and separation in planes and spaces; congruences between lines angles and triangles; parallel postulate; perpendicular lines and planes in space; constructions with ruler and compass. This course may be used for degree credit only in the elementary education curriculum at the undergraduate or graduate level.
- MATH 4030G Probability and Finite Mathematics** 3 cr.  
Prerequisites: MATH 1021 and 1022. Probability theory, convex sets, finite Markov chains, continuous probability theory. This course may be used for degree credit only in the elementary education curriculum at the undergraduate or graduate level.
- MATH 4101G Advanced Calculus** 3 cr.  
Prerequisite: MATH 2115. MATH 4101 is prerequisite to MATH 4102. These courses emphasize a balance between proofs and techniques in intermediate analysis involving one and several variables. Limits, continuity, differentiation, integration and convergence. Series of functions, functional dependence, Jacobian, vector analysis or other techniques of use in applications.
- MATH 4102G Advanced Calculus** 3 cr.  
Prerequisite: MATH 2115. MATH 4101 is prerequisite to MATH 4102. These courses emphasize a balance between proofs and techniques in intermediate analysis involving one and several variables. Limits, continuity, differentiation, integration and convergence. Series of functions, functional dependence, Jacobian, vector analysis or other techniques of use in applications.
- MATH 4213G Fourier Series and Transforms** 3 cr.  
Prerequisite: MATH 2115 and 2221 or consent of department. Fourier series and discrete frequency spectra, Fourier integral and continuous spectra, transformation of special functions, applications in physics and engineering.

- MATH 4221G Intermediate Ordinary Differential Equations** 3 cr.  
Prerequisite: MATH 2221 and 2511 or consent of department. Topics to be selected from the following: introduction to qualitative theory, phase plane analysis of autonomous systems, classification of equilibria, stability theory, Liapunov methods, limit cycles, Poincaré-Bendixson theorem, introduction to bifurcation theory and chaotic oscillations, Frobenius method for series solutions, special functions, Sturm comparison and separation theorems.
- MATH 4224G Partial Differential Equations I** 3 cr.  
Prerequisite: MATH 2115 and 2221 or consent of department. Basic techniques for solving linear partial differential equations, separation of variables, eigenfunction expansions, integral transforms, Sturm-Liouville boundary value problems, initial value problems and boundary value problems for hyperbolic, parabolic, and elliptic equations, fundamental solutions, maximum principle, classical and modern applications.
- MATH 4230G Finite Element Analysis** 3 cr.  
Prerequisites: MATH 2115, 2221, 2511, and a knowledge of Fortran or consent of department. Variational principle, weighted residual methods, finite element analysis of one and two dimensional steady state and transient boundary value problems involving partial differential equations, software development and implementations.
- MATH 4240G Boundary Element Method** 3 cr.  
Prerequisites: MATH 2115, 2221, and 2511. Some knowledge of computer programming is also required. Weak variational formulation, fundamental solutions, formulation of two- and three-dimensional boundary element equations, potential problems, nonconvex regions, linear elasticity, fluid flows, acoustics, software development.
- MATH 4251G Numerical Analysis** 3 cr.  
Prerequisite: MATH 2115 and a working knowledge of FORTRAN or PASCAL, or consent of department. Numerical solution of systems of linear and nonlinear equations; interpolation, approximation, and minimization of functions; numerical integration.
- MATH 4252G Numerical Analysis** 3 cr.  
Prerequisites: MATH 2221 and 4251. Eigenvalue problems; numerical Fourier transforms; modeling of data; introduction to numerical solution of initial and boundary value problems in ordinary and partial differential equations.
- MATH 4271G Advanced Mathematical Programming** 3 cr.  
(Same as Computer Science 4271) Prerequisites: Mathematics 2271 and either Mathematics 4102 or 4251 or consent of department. Algorithms and numerical techniques for advanced work in mathematical programming. Approximations by interpolation and least squares, orthogonal polynomials, matrix inversion and other selected topics. General information handling languages with applications to symbol manipulations and recursive formulas.
- MATH 4280G Mathematical Modeling for Continuous Systems** 3 cr.  
Prerequisite: MATH 2115 and 2221, or consent of department. General principles in mathematical modeling, derivation and analysis of specific models using ordinary and partial differential equations; examples drawn from the applied sciences may include traffic flow, biological systems, mechanical systems, discussion of stability and dependence on parameters.
- MATH 4301G Analysis of Variance and Experimental Design** 3 cr.  
Prerequisite: MATH 2314 or an equivalent course in statistics, and credit or concurrent registration in Mathematics 3300; or consent of department. Only one of MATH 4301 or MATH 6301 may be counted toward a master's degree in Mathematics. An introduction to the SAS statistical computer package. Basic analysis of variance with fixed and random effects models, multifactor analysis of variance, analysis of covariance. Experimental designs including completely randomized designs, randomized block designs, nested designs, and Latin squares.
- MATH 4304G Introduction to Regression Analysis** 3 cr.  
Prerequisite: MATH 2314 or an equivalent course in statistics, and credit or concurrent registration in MATH 3300; or consent of department. Only one of MATH 4304 or 6304 may be counted toward a master's degree in Mathematics. Linear regression, inferences in regression analysis, aptness of model and remedial measures, matrices, multiple and polynomial regression, indicator variables, multi-collinearity, selection of independent variables, nonlinear regression. SAS will be used for data analysis.
- MATH 4311G Introduction to Mathematical Statistics** 3 cr.  
Prerequisite: MATH 2115 or consent of department. MATH 4311 is prerequisite to MATH 4312. Axiomatic probability, discrete and continuous distributions, expectation, estimation, central limit theorem, confidence intervals and tests of hypotheses, regression, Bayesian statistics, other topics.
- MATH 4312G Introduction to Mathematical Statistics** 3 cr.  
Prerequisite: MATH 2115 or consent of department. MATH 4311 is prerequisite to MATH 4312. Axiomatic probability, discrete and continuous distributions, expectation, estimation, central limit theorem, confidence intervals and tests of hypotheses, regression, Bayesian statistics, other topics.
- MATH 4341G Nonparametric Statistics** 3 cr.  
Prerequisite: MATH 4301 or 4304, or consent of department. Organizing and summarizing data; one-sample, two-sample, and k-sample tests; tests based on the binomial distribution; confidence intervals; Wilcoxon type tests; Kruskal-Wallis and Friedman tests; contingency tables; tests based on ranks; and Kolmogorov-Smirnov type statistics.
- MATH 4360G Mathematical Information Theory** 3 cr.  
Prerequisite: MATH 2010 or 2112 or consent of department. A self-contained development of both elementary applications and basic probability theory for a study of certain qualitative and quantitative concepts involving information, uncertainty, entropy, information channels, transmission rates, and capacities and coding.
- MATH 4371G Probability Theory** 3 cr.  
Prerequisite: MATH 2115 or consent of department. Discrete probability theory, Markov chains, elementary limit laws and theorems.
- MATH 4372G Applied Stochastic Processes** 3 cr.  
Prerequisite: MATH 4311 or 4371 or consent of department. Introduction to Poisson processes, Brownian motion, branching processes, and related topics with applications.
- MATH 4411G Introduction to Complex Analysis** 3 cr.  
Prerequisite: Mathematics 4102 or consent of department. Complex plane, analytic functions, Cauchy-Riemann equations, mappings by elementary functions, complex integration, Cauchy's theorem, Cauchy integral formula and applications, Taylor series, Laurent series, isolated singularities, residue theorem and applications.
- MATH 4511G Linear Algebra** 3 cr.  
Prerequisite: MATH 3512 or consent of department. Inner product spaces, dual spaces, canonical forms, the spectral theorem, quadratic forms, operators, the classical groups, multilinear algebra and applications.
- MATH 4512G Abstract Algebra** 3 cr.  
Prerequisite: MATH 3512. Ideals, Euclidean and principal ideal domains, finite fields, Sylow theorems, and solvable groups.

- MATH 4518G Elementary Number Theory** 3 cr.  
Prerequisite: consent of department. Divisibility, congruences, power residues, quadratic residues, certain arithmetic functions and selected topics.
- MATH 4524G Mathematical Logic** 3 cr.  
Prerequisite: MATH 2115. Propositional and predicate calculus; formal systems; computability and decidability.
- MATH 4527G Formal Languages and Automata** 3 cr.  
(Math 4527 and CSCI 4103 are cross-listed) Prerequisite: CSCI 2125 or MATH 3512 or consent of department. Introduction to formal languages and their relation to automata; the Chomsky hierarchy of classes of grammars; normal forms; recognition of languages by automata; parsing classes of context free languages; decidability problems.
- MATH 4611G Topology** 3 cr.  
Prerequisite: MATH 4101 or consent of department. Topological spaces, continuous maps and homeomorphisms, product spaces, connectedness, separation axioms, compactness, and metric spaces.
- MATH 4711G Graph Theory** 3 cr.  
Prerequisite: MATH 2511 or MATH 2721 or consent of department. An introduction to graph theory and its applications; the basic theorems and algorithms. Paths and cycles, colorings, planarity, directed graphs, networks.
- MATH 4721G Combinatorics** 3 cr.  
Prerequisite: MATH 2511 or 2721 or consent of department. Permutations, combinations, and partitions; inclusion-exclusion principle; generating functions and recurrence relations; matchings; combinatorial designs.
- MATH 4990G Special Topics** 3 cr.  
Prerequisite: consent of department. Six hours maximum will be accepted for graduate credit.
- MATH 4991G Special Topics** 3 cr.  
Prerequisite: consent of department. Six hours maximum will be accepted for graduate credit.
- MATH 4992G Special Topics** 3 cr.  
Prerequisite: consent of department. Six hours maximum will be accepted for graduate credit.
- MATH 4998G Selected Readings in Mathematics** 1-3 cr.  
Prerequisite: consent of department. This course may be repeated to a total of six credits. The course consists of directed readings designed to meet the needs and interests of the individual student; regular conferences between the student and the instructor are required. The section number will correspond with credit to be earned.

## Military Science

- MILS 3001 Basic Tactics** 3 cr.  
Offered fall semester. Prerequisite: MILS 2002 or consent of department. Introduction to U.S. Army tactical concepts and procedures, principles and evolution of war, and relationship between weapons and tactics. Includes a comparative study of U.S. and U.S.S.R. organizations, advanced map reading and terrain association, operation orders format, and concludes with a study of offensive operations (movement techniques formations, control measures, conduct of the offense, and offensive operation order exercise). Course includes training in physical conditioning and periodic field trips. Three hours of lecture and three hours of laboratory.
- MILS 3002 Advanced Tactics** 3 cr.  
Offered spring semester. Prerequisite: MILS 3001. Continuation of the study of U.S. Army tactical concepts. The course begins with

a study of defense operations (range cards and sector sketches, retrograde operations) and continues with patrolling techniques, low intensity conflict, call for fire. Concludes with an overview of advanced camp communication procedures, physical training program, practical application of drill and ceremonies, review of tactics, and explanation of the tactical application exercise. Course includes training in physical conditioning and periodic field trips. Three hours of lecture and three hours of laboratory.

- MILS 3402 Ethics of Leadership** 3 cr.  
Prerequisite: Military Science 3002. First part of the capstone course leading to commissioning in the U.S. Army. Course includes a study of military ethics and professionalism (introduction to the profession of arms, basic understanding of the professional soldier's responsibilities to the Army and the nation, an awareness and sensitivity to ethical issues, improved ethical decision making skills). Course concludes with cadet presentation of professional knowledge subjects (conduct briefings, military correspondence, information decision paper, after-action report, counseling techniques, intelligence and combat information, post and installation support). Course includes training in physical conditioning and periodic field trips. Two hours of lecture and three hours of laboratory.
- MILS 4001 Ethics Of Leadership** 2 cr.  
Fall semester. Prerequisites: MILS 3002. A study of military ethics and professionalism (introduction to the profession of arms, basic understanding of the professional soldier's responsibilities to the Army and the Nation, an awareness and sensitivity to ethical issues, improved ethical decisions making skills). Course concludes with cadet presentation of professional knowledge subjects (conducts briefings, military correspondence, information/decision paper, after-action report, counseling techniques, intelligence and combat information, post and installation support). Includes training in physical conditioning and periodic field trips. Two hours of lecture and one hour of laboratory.
- MILS 4002 Professionalism Of Leadership** 2 cr.  
Spring semester. Prerequisite: MILS 4001. Emphasis is on command and staff functions, planning and preparation of training, logistics, and personal management. Course concludes with the study of military justice and the law of war. Includes training in physical conditioning and periodic field trips. Two hours of lecture and one hour of laboratory.
- MILS 4001G Ethics Of Leadership** 2 cr.  
Fall semester. Prerequisites: MILS 3002. A study of military ethics and professionalism (introduction to the profession of arms, basic understanding of the professional soldier's responsibilities to the Army and the Nation, an awareness and sensitivity to ethical issues, improved ethical decisions making skills). Course concludes with cadet presentation of professional knowledge subjects (conducts briefings, military correspondence, information/decision paper, after-action report, counseling techniques, intelligence and combat information, post and installation support). Includes training in physical conditioning and periodic field trips. Two hours of lecture and one hour of laboratory.
- MILS 4002G Professionalism Of Leadership** 2 cr.  
Spring semester. Prerequisite: MILS 4001. Emphasis is on command and staff functions, planning and preparation of training, logistics, and personal management. Course concludes with the study of military justice and the law of war. Includes training in physical conditioning and periodic field trips. Two hours of lecture and one hour of laboratory.

## Marketing

- MKT 3505 Consumer Behavior** 3 cr.  
Offered each semester. Prerequisites: MKT 2501 and three hours of psychology. An interdisciplinary approach to the study of the decision-making process as it applies to the purchase of consumer goods. The viewpoint of both consumer and of the marketing manager are considered so that the student may apply the principles of the courses to personal as well as professional life. A wide variety of examples is used to establish the practical value of the subjects discussed. Graduate students will not receive credit for both Marketing 3050 and 6510.
- MKT 3510 Introduction to Marketing Research** 3 cr.  
Prerequisites: MKT 2501 BA 2780 and QMBE 2786. The scientific method is applied to the solution of marketing problems for the development of sound marketing strategies. Basic methodologies and applications are stressed. Analytical techniques and analysis beyond those in QMBE2786 are introduced.
- MKT 3511 Applied Marketing Research** 3 cr.  
Prerequisites: MKT 3510 and BA 2780 or approved substitutes. The student proposes, formulates, and executes a marketing research study, utilizing the techniques developed in MKT 3510. Discussion of exploratory research techniques, case studies, and advanced statistical analysis. Research costs will be incurred by the student.
- MKT 3520 Direct Response Marketing** 3 cr.  
Prerequisites: MKT 2501. The theory and practice of direct response marketing as an aspect of the total marketing system for both small and large businesses. Emphasis is given to direct mail, print and broadcast advertising, telephone promotion, and interactive media. Development of student's analytical techniques needed for successful application in profit and nonprofit organizations, both public and private.
- MKT 3526 The Legal Environment of Marketing** 3 cr.  
Prerequisites: BA 3510 and MKT 2501. A study of the federal anti-trust laws and other federal and state laws regulating and affecting the sales, marketing, and distribution processes. Subject areas include price fixing laws, exclusive dealings and tie-in arrangements, patent laws, horizontal and vertical restraints of trade, illegal boycotts and discriminatory discounts, illegal advertising, product liability, and consumer protection laws.
- MKT 3530 Sales Management** 3 cr.  
Prerequisite: MKT 2501. The theory and practice of recruiting training motivating and compensating the professional sales force with emphasis on the role of the salesman in buyer-seller relationships.
- MKT 3552 Retailing** 3 cr.  
Prerequisite: MKT 2501. Store organization, operation, and management; and problems and practices of retailers in buying, selling, control, and promotion.
- MKT 3553 Retailing Cases and Problems** 3 cr.  
Prerequisites: MKT 2501 and MKT 3552. Advanced course in retailing management using case studies and special projects to examine selected retail organizations and for organizational situations. In a seminar format, principles of retail strategy and organization are applied to retail management decisions.
- MKT 3570 Business-to-Business Marketing** 3 cr.  
Prerequisite: MKT 2501. The course emphasizes the special nature of marketing to organizations as opposed to individual consumers. These organizations include commercial enterprises, institutions, and government units. Emphasis is placed on providing frameworks which can be used by business marketers to help develop more effective marketing strategies.
- MKT 3580 Advertising** 3 cr.  
Prerequisite: MKT 2501. Analysis of principal means of promotion. Includes preparation of an advertising campaign and appropriation determination. Brief treatment of personal selling and secondary promotional devices.
- MKT 3585 Marketing Internship** 3 cr.  
Prerequisite: MKT 2501 and consent of department. The student intern works for ten to twenty hours per week at the sight of a participating organization which directs the intern in a specific marketing project. Students desiring to take this course should apply early. Enrollment is limited by the internships available.
- MKT 3590 Topic Seminar in Marketing** 3 cr.  
Prerequisite: nine hours of marketing Senior standing or consent of department. Topics of current interest in marketing. Topic changes from semester to semester.
- MKT 3591 Independent Study in Marketing** 3 cr.  
Offered each semester. Prerequisite: MKT 2501 and approval of the directed individual study by the department chair and the supervising professor is required prior to registration. The students should refer to the College of Business Administration Policy on Directed Individual Study available in the Marketing Department. This course is arranged individually in order to provide latitude for specialized study and research under the direction of a faculty member. Progress reports, readings, conferences, and a research paper are required. May be repeated once for credit.
- MKT 3595 Academic Year Abroad: Special Topics in Marketing** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.
- MKT 3599 Senior Honors Thesis** 3 cr.  
Offered each semester. Prerequisites: MKT 3510 consent of department consent of director of the Honors Program and grade point averages of at least 3.5 in marketing and at least 3.25 overall. Senior honors thesis research in marketing under the direction of a faculty member. Students may earn up to a total of six credits.
- MKT 4546 International Marketing Management** 3 cr.  
Prerequisites: MKT 2501. A study of the significant aspects of international business operations including the historical development of foreign trade policy and operative problems of international business operations, private and public organizations in foreign trade, and the legal dimensions of foreign trade. Graduate students will not receive credit for both MKT 4546 and 6546
- MKT 4570 Distribution Channels** 3 cr.  
Prerequisites: MKT 2501. Theory and practice of analysis and management of interfirm relationships within the marketing channel. Oriented toward strategic planning, the course examines the scope, environments, and dynamics of channel structure with a strategic planning orientation.
- MKT 4575 Logistics** 3 cr.  
Prerequisites: MANG 3402 and MKT 2501. A study of the flow of goods as it relates to the success of the firm. Topics include transportation and storage and their control, information flow, inventory, location theory, and scheduling.
- MKT 4580 Marketing Management** 3 cr.  
Prerequisite: 12 hours of marketing which must include MKT 2501, MKT 3505, and 3510. Focuses on the steps of marketing planning, which include planning, implementing, and controlling marketing programs. This includes product and brand development, channels of distribution, promotion, and pricing. The course cannot be taken for credit in the M.B.A. program.

**MKT 6333 Real Estate Finance and Market**

**Feasibility Analysis** 3 cr.  
Prerequisite: one of the following: FIN 6300, URBN 6165, FIN 4366, or FIN 4368. A survey of the physical characteristics and the market, economic, and financial considerations which enter into the decision process for selecting business locations. Addresses the allocation of land resources among a number of possible revenue-producing uses and the impact of location considerations on the profitability of the firm. An extensive field research project is an integral part of the course.

**MKT 6503 Marketing Problem Analysis** 3 cr.  
Prerequisite: Marketing 3501 or Engineering Management 6101 or consent of the department. Development of the ability to solve marketing problems using the case method. Emphasis is given to the use of data obtained from business firms.

**MKT 6510 Advanced Analysis of Consumer Behavior** 3 cr.  
Prerequisite: MKT 6503. Theoretical, conceptual, and methodological issues in consumer behavior. Emphasis will be on current publications, breakthroughs, and research.

**MKT 6546 Advanced Seminar in International Marketing** 3 cr.  
Prerequisite: MKT 6503. An in-depth review of trends and developments in the global marketing environment. Topics covered include import-export, joint ventures as well as international marketing systems and multinational marketing strategies.

**MKT 6555 Marketing Research Methods** 3 cr.  
Prerequisite: QMBE 2786 and MKT 6503. Advanced marketing research methods including experimentation, questionnaire construction, and sampling, used to investigate marketing problems, and design of strategies. Other applications include market position assessment, image studies, product design, advertising effectiveness, and pricing. Elementary and multivariate data analysis methodology will be applied.

**MKT 6590 Current Topics in Marketing** 3 cr.  
Prerequisite: MKT 6503. An intensive study of selected current topics in marketing. Topics will vary based on contemporary needs as dictated by the discipline as well as the interests of the students and the instructor.

**MKT 6591 Independent Study in Marketing** 3 cr.  
Prerequisite: consent of department. Readings, weekly reports, conferences, and a research paper.

**MKT 4546G International Marketing Management** 3 cr.  
Prerequisites: MKT 2501. A study of the significant aspects of international business operations including the historical development of foreign trade policy and operative problems of international business operations, private and public organizations in foreign trade, and the legal dimensions of foreign trade. Graduate students will not receive credit for both MKT 4546 and 6546

**MKT 4570G Distribution Channels** 3 cr.  
Prerequisites: MKT 2501. Theory and practice of analysis and management of interfirm relationships within the marketing channel. Oriented toward strategic planning, the course examines the scope, environments, and dynamics of channel structure with a strategic planning orientation.

**MKT 4575G Logistics** 3 cr.  
Prerequisites: MANG 3402 and MKT 2501. A study of the flow of goods as it relates to the success of the firm. Topics include transportation and storage and their control, information flow, inventory, location theory, and scheduling.

**MKT 4580G Marketing Management** 3 cr.  
Prerequisite: 12 hours of marketing which must include MKT 2501, MKT 3505, and 3510. Focuses on the steps of marketing planning,

which include planning, implementing, and controlling marketing programs. This includes product and brand development, channels of distribution, promotion, and pricing. The course cannot be taken for credit in the M.B.A. program.

**Music**

**MUS 1000 Music Appreciation** 3 cr.  
Offered each semester. An appreciation and analysis from the viewpoint of the listener of representative works in Western art tradition, covering for example, selected masterworks of Bach, Handel, Mozart, Beethoven, Brahms, Tchaikovsky, Bartok, and Stravinsky. No previous knowledge of or about music is required.

**MUS 1004 Contemporary Jazz** 3 cr.  
Offered each semester. An introduction to the principal innovators styles and schools of jazz from World War II to the present. Music 1003 and 1004 may be taken separately or in reverse order. No previous knowledge of or about music is required.

**MUS 1100 Fundamentals of Music** 3 cr.  
Offered each semester. An introduction to the rudiments of music theory including structure, notation, and written and aural skills.

**MUS 1101 Music Theory I** 3 cr.  
Fundamentals of music grammar, melodic writing and two-voice 16th century contrapuntal techniques

**MUS 1102 Music Theory II** 6 cr.  
Prerequisite: Music 1101 or equivalent. Principles of tonal music as exemplified by selected Baroque composers. Emphasis on melody, rhythm, texture, figured bass, functional harmony, counterpoint, dramatic techniques, and formal structures of the Baroque era.

**MUS 1103 Elementary Musicianship** 1 cr.  
Offered each semester. A course in aural skills, keyboard skills, sight singing, and rhythm training. Normally to be taken simultaneously with Music 1101 and 1102. Two hours of class per week.

**MUS 1104 Elementary Musicianship** 1 cr.  
Offered each semester. A course in aural skills, keyboard skills, sight singing, and rhythm training. Normally to be taken simultaneously with MUS 1101 and 1102. Two hours of class per week.

**MUS 1401 Applied Keyboard** 3 cr.  
Private instruction (one hour per week).  
MUS 1402 Applied Keyboard 3 cr.  
Private instruction (one hour per week).

**MUS 1403 Applied Keyboard** 2 cr.  
Private instruction (one hour per week).

**MUS 1405 Piano Class** 2 cr.  
Offered each semester. Class instruction in piano for music majors not majoring in piano. Two one-hour classes and six hours practice per week. These courses are intended for music majors with little or no previous piano training.

**MUS 1406 Piano Class** 2 cr.  
Offered each semester. Class instruction in piano for music majors not majoring in piano. Two one-hour classes and six hours practice per week. These courses are intended for music majors with little or no previous piano training.

**MUS 1407 Piano Class** 2 cr.  
Offered each semester. Class instruction in piano for music majors not majoring in piano. Two one-hour classes and six hours practice per week. These courses are intended for music majors with little or no previous piano training.

<b>MUS 1408 Piano Class</b>	2 cr.	<b>MUS 1603 Applied Strings</b>	2 cr.
Offered each semester. Class instruction in piano for music majors not majoring in piano. Two one-hour classes and six hours practice per week. These courses are intended for music majors with little or no previous piano training.		Private instruction (one hour per week).	
<b>MUS 1431 Applied Keyboard-Principal</b>	3 cr.	<b>MUS 1611 Classical Guitar for Non-Music Majors</b>	2 cr.
Private instruction (one hour per week) or small group instruction (two hours per week).		Group instruction in the fundamentals of classical guitar. Open to all University students. Students must have a classical guitar.	
<b>MUS 1432 Applied Keyboard-Principal</b>	3 cr.	<b>MUS 1612 Classical Guitar for Non-Music Majors</b>	2 cr.
Private instruction (one hour per week) or small group instruction (two hours per week).		Prerequisites: MUS 1611 or equivalent and consent of department. Group instruction in the fundamentals of classical guitar. Open to all University students. Students must have a classical guitar. MUS 1612 is a continuation of MUS 1611.	
<b>MUS 1433 Applied Keyboard-Principal</b>	2 cr.	<b>MUS 1631 Applied Strings-Principal</b>	3 cr.
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week) or small group instruction (two hours per week).	
<b>MUS 1501 Applied Voice</b>	3 cr.	<b>MUS 1632 Applied Strings-Principal</b>	3 cr.
Private instruction (one hour per week).		Private instruction (one hour per week) or small group instruction (two hours per week).	
<b>MUS 1502 Applied Voice</b>	3 cr.	<b>MUS 1633 Applied Strings-Principal</b>	2 cr.
Private instruction (one hour per week).		Private instruction (one hour per week) or small group instruction (two hours per week).	
<b>MUS 1503 Applied Voice</b>	2 cr.	<b>MUS 1701 Applied Woodwind</b>	3 cr.
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 1505 Voice Class</b>	2 cr.	<b>MUS 1702 Applied Woodwind</b>	3 cr.
Fundamentals of voice production. Class instruction in correct breathing, tone production, and diction. These courses are intended for music majors with little or no previous voice training.		Private instruction (one hour per week).	
<b>MUS 1506 Voice Class</b>	2 cr.	<b>MUS 1703 Applied Woodwind</b>	2 cr.
Fundamentals of voice production. Class instruction in correct breathing, tone production, and diction. These courses are intended for music majors with little or no previous voice training.		Private instruction (one hour per week).	
<b>MUS 1507 Voice Class</b>	2 cr.	<b>MUS 1705 String Methods and Techniques</b>	2 cr.
Fundamentals of voice production. Class instruction in correct breathing, tone production, and diction. These courses are intended for music majors with little or no previous voice training.		A study of the instruments of the string family with an emphasis on their teaching methods and techniques. Designed for the instrumental education major.	
<b>MUS 1508 Voice Class</b>	2 cr.	<b>MUS 1706 Woodwind Methods and Techniques</b>	2 cr.
Fundamentals of voice production. Class instruction in correct breathing, tone production, and diction. These courses are intended for music majors with little or no previous voice training.		A study of the instruments of the woodwind family with an emphasis on their teaching methods and techniques. Designed for the instrumental music major.	
<b>MUS 1511 Voice Class for Non-Music Majors</b>	2 cr.	<b>MUS 1707 Brass Methods and Techniques</b>	2 cr.
Introduction to the fundamental principles of singing. Group instruction in voice production. Open to all University students.		A study of the instruments of the brass family with an emphasis on their teaching methods and techniques. Designed for the instrumental music major.	
<b>MUS 1512 Voice Class for Non-Music Majors</b>	2 cr.	<b>MUS 1708 Percussion Methods and Techniques</b>	2 cr.
Prerequisites: MUS 1511 or equivalent and consent of department. Introduction to the fundamental principles of singing. Group instruction in voice production. Open to all University students. MUS1512 is a continuation of MUS 1511.		A study of the instruments of the percussion family with an emphasis on their teaching methods and techniques. Designed for the instrumental music major.	
<b>MUS 1531 Applied Voice-Principal</b>	3 cr.	<b>MUS 1711 Applied Brass</b>	3 cr.
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week).	
<b>MUS 1532 Applied Voice-Principal</b>	3 cr.	<b>MUS 1712 Applied Brass</b>	3 cr.
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week).	
<b>MUS 1533 Applied Voice-Principal</b>	2 cr.	<b>MUS 1713 Applied Brass</b>	2 cr.
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week).	
<b>MUS 1601 Applied Strings</b>	3 cr.	<b>MUS 1721 Applied Percussion</b>	3 cr.
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 1602 Applied Strings</b>	3 cr.	<b>MUS 1722 Applied Percussion</b>	3 cr.
Private instruction (one hour per week).		Private instruction (one hour per week).	
		<b>MUS 1723 Applied Percussion</b>	2 cr.
		Private instruction (one hour per week).	
		<b>MUS 1731 Applied Woodwind-Principal</b>	3 cr.
		Private instruction (one hour per week) or small group instruction (two hours per week).	

- MUS 1732 Applied Woodwind-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1733 Applied Woodwind-Principal** 2 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1741 Applied Brass-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1742 Applied Brass-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1743 Applied Brass-Principal** 2 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1781 Applied Percussion-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1782 Applied Percussion-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1783 Applied Percussion-Principal** 2 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 1900 Student Recital No credit** 0 cr.  
Offered each semester. Prerequisite: audition with department. The study and performance of large ensemble jazz materials with emphasis on contemporary idioms. May be repeated for credit to a total of eight semester hours.
- MUS 1901 Chamber Ensemble** 1 cr.  
Prerequisite: consent of department. Intensive study of chamber music and other works for small ensembles. May be repeated for credit to a total of eight semester hours.
- MUS 1902 University Jazz Band** 1 cr.  
Offered each semester. Prerequisite: audition with department. The study and performance of large ensemble jazz materials with emphasis on contemporary idioms. May be repeated for credit to a total of eight semester hours.
- MUS 1903 University Band** 1 cr.  
Offered each semester and open to all University students with consent of department. Intensive study of traditional and modern repertoire for concert and marching band. May be repeated for credit to a total of eight semester hours. \*May be used to fulfill the General Degree Requirements for arts.
- MUS 1905 University Chorale** 1 cr.  
Offered each semester. Open to all University students by audition. Study and performance of choral literature. Campus and tour performances. Three hours of class per week. May be repeated for credit to a total of eight semester hours.
- MUS 1906 Chamber Singers** 1 cr.  
Offered each semester. Open to all University students by audition. A small ensemble of mixed voices for the study and performance of choral music dating from 1500 to the present. May be repeated to a total of eight semester hours.
- MUS 1907 Piano Accompaniment** 1 cr.  
Prerequisite: consent of department. Guided experience in sight-reading, preparation and performance of accompaniments for vocal and instrumental performers. May be repeated for credit to a total of eight semester hours.
- MUS 1908 Wind Ensemble** 1 cr.  
Offered each semester. Prerequisite: audition with department. Study and performance of advanced repertoire for wind ensemble. May be repeated for credit to a total of eight semester hours.
- MUS 1910 University Orchestra** 1 cr.  
Offered each semester. Prerequisite: audition. Study and performance of orchestral repertoire. May be repeated for credit to a total of eight semester hours.
- MUS 1950 Opera Theater** 1 cr.  
Open to voice students or by consent of department. A workshop course especially designed for the coordination of music and acting with particular emphasis on training the singing actor. Coaching in operatic scenes and training in the basic principles of dramatic aspects of opera. Three hours of laboratory per week. May be repeated for credit to a total of eight semester hours.
- MUS 2000 Field Research in the Arts** 1-3 cr.  
(DRCM 2000, FA 2000, and MUS 2000 are cross-listed) Prerequisite: consent of department. Special research project in the arts involving field experience and study outside the city of New Orleans. Advance preparation for the project will include conference with or lecture by the faculty and readings in the specific areas to be studied. The study trip will consist of attendance at a minimum of four theatrical or musical performances or a minimum of eight hours spent in visits to exhibits or museums for each hour of credit. A follow-up paper on a research topic inspired by the trip will be required. May be repeated for up to six hours of credit. Credit will be given for only DRCM 2000, FA 2000, or MUS 2000 for the same trip.
- MUS 2001 Special Topics in Music** 1-3 cr.  
Prerequisite: consent of department. Specific areas of interest will be studied under the direction of a faculty member. Topics may vary from semester to semester. This course may be repeated but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.
- MUS 2101 Music Theory III** 3 cr.  
Prerequisite: MUS 1102 or equivalent. Principles of tonal music as exemplified by selected Classic and Romantic composers. Emphasis on melody, rhythm, texture, modulation, functional and nonfunctional harmony, dramatic techniques, and formal structures of the Classic and Romantic eras.
- MUS 2102 Music Theory IV** 3 cr.  
Prerequisite: MUS 2101 or equivalent. Principles of tonal and atonal music as exemplified by selected 20th century composers. Emphasis on melody, rhythm, texture, harmony, counterpoint, color, dramatic techniques, and form structures of the 20th century.
- MUS 2103 Advanced Musicianship** 1 cr.  
Offered each semester. Continuation of MUS 1103 and 1104 coordinate with MUS 2101 and 2102. Two hours of class per week.
- MUS 2104 Advanced Musicianship** 1 cr.  
Offered each semester. Continuation of MUS 1103 and 1104 coordinate with MUS 2101 and 2102. Two hours of class per week.
- MUS 2105 Techniques of Orchestration** 2 cr.  
Prerequisite: MUS 1102 or equivalent. A study of writing for orchestral instruments singly, in choirs, and in full orchestral instrumentation. Particular emphasis will be placed on arranging selected piano compositions for various combinations of orchestral instruments.
- MUS 2106 Class Composition** 2 cr.  
Prerequisite: MUS 1102 or equivalent. A beginning study of the elements of composition. Particular emphasis will be placed on

solving common technical problems and in preparing manuscripts for performance.		
<b>MUS 2107 Jazz Arranging Class</b>	<b>2 cr.</b>	
Prerequisites: MUS 1003 1102 and 1406 or consent of department. A beginning study of the fundamentals of music notation instrumentation and theory as applied to the jazz idiom. To be taken concurrently with Music 2101.		
<b>MUS 2108 Jazz Arranging Class</b>	<b>2 cr.</b>	
Prerequisite: MUS 2107 or consent of department. Continuation of MUS 2107 with increased emphasis on the completion of brief scoring projects. To be taken concurrently with MUS 2102.		
<b>MUS 2109 Jazz Harmony and Theory</b>	<b>3 cr.</b>	
Prerequisites: MUS 1003 1102 and 1406 or consent of department. Introduction to the fundamentals of jazz harmony with emphasis placed on aural perception and keyboard interpretations of common chord progressions as they occur in the song-forms (A-B-A) and the blues.		
<b>MUS 2110 Jazz Harmony and Theory</b>	<b>3 cr.</b>	
Prerequisite: MUS 2109 or consent of department. A continuation of MUS 2109 with increased emphasis placed on the study of harmonic progressions as found in the popular song forms and the blues and an introduction to the principals of chord substitution and reharmonization.		
<b>MUS 2201 History of Music</b>	<b>3 cr.</b>	
Fall semester. Prerequisites: MUS 1102 and 1104. An historical survey of the art of music in the West from its tentative beginnings in Greek and Jewish music through the compositions of Beethoven.		
<b>MUS 2202 History of Music</b>	<b>3 cr.</b>	
Spring semester. Prerequisites: MUS 1102 1104 and 2201 or consent of department. A continuation of MUS 2201 from the music of Schubert and Weber through the present.		
<b>MUS 2205 Jazz Profiles</b>	<b>3 cr.</b>	
Prerequisite: MUS 1003 or consent of department. An historical study of the major jazz figures from the New Orleans period until the present day emphasizing the contributions of the principal innovators of each era. Intended for students enrolled in the Jazz Studies Performance and Arranging Emphases.		
<b>MUS 2302 French Diction in Singing</b>	<b>2 cr.</b>	
Prerequisite: consent of department. A study of phonetic sounds of the French language to promote the ability to sing in French. No attempt made to develop knowledge of grammar or vocabulary.		
<b>MUS 2303 Italian Diction in Singing</b>	<b>2 cr.</b>	
Prerequisite: consent of department. A study of phonetic sounds of the Italian language to promote the ability to sing in Italian. No attempt made to develop knowledge of grammar or vocabulary.		
<b>MUS 2304 German Diction in Singing</b>	<b>2 cr.</b>	
Prerequisite: consent of department. A study of phonetic sounds of the German language to promote the ability to sing in German. No attempt made to develop knowledge of grammar or vocabulary. *May be used to fulfill the General Degree Requirements for arts.		
<b>MUS 2401 Applied Keyboard</b>	<b>3 cr.</b>	
Private instruction (one hour per week).		
MUS 2402 Applied Keyboard	3 cr.	
Private instruction (one hour per week).		
<b>MUS 2403 Applied Keyboard</b>	<b>2 cr.</b>	
Private instruction (one hour per week).		
<b>MUS 2431 Applied Keyboard-Principal</b>	<b>3 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2432 Applied Keyboard-Principal</b>	<b>3 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2433 Applied Keyboard-Principal</b>	<b>2 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2501 Applied Voice</b>	<b>3 cr.</b>	
Private instruction (one hour per week).		
<b>MUS 2502 Applied Voice</b>	<b>3 cr.</b>	
Private instruction (one hour per week).		
<b>MUS 2503 Applied Voice</b>	<b>2 cr.</b>	
Private instruction (one hour per week).		
<b>MUS 2505 Advanced Voice Class</b>	<b>3 cr.</b>	
Prerequisite: MUS 1508 or equivalent. Continuation of Voice Class 1508. Small group instruction for voice secondaries. Further studies in vocal pedagogy and technique.		
<b>MUS 2506 Advanced Voice Class</b>	<b>3 cr.</b>	
Prerequisite: MUS 1508 or equivalent. Continuation of Voice Class 1508. Small group instruction for voice secondaries. Further studies in vocal pedagogy and technique.		
<b>MUS 2507 Advanced Voice Class</b>	<b>3 cr.</b>	
Prerequisite: MUS 1508 or equivalent. Continuation of Voice Class 1508. Small group instruction for voice secondaries. Further studies in vocal pedagogy and technique.		
<b>MUS 2531 Applied Voice-Principal</b>	<b>3 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2532 Applied Voice-Principal</b>	<b>3 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2533 Applied Voice</b>	<b>2 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2601 Applied Strings</b>	<b>3 cr.</b>	
Private instruction (one hour per week).		
<b>MUS 2602 Applied Strings</b>	<b>3 cr.</b>	
Private instruction (one hour per week).		
<b>MUS 2603 Applied Strings</b>	<b>2 cr.</b>	
Private instruction (one hour per week).		
<b>MUS 2605 Jazz Keyboard Class</b>	<b>1 cr.</b>	
Prerequisite: MUS 1406 or consent of department. Small group instruction for students in the Jazz Studies Arranging Emphasis. Introduction to the fundamentals of chord voicings and harmonic progressions in the jazz idiom.		
<b>MUS 2606 Jazz Keyboard Class</b>	<b>1 cr.</b>	
Prerequisite: MUS 2605 or consent of department. Continuation of MUS 2605 emphasizing the fundamentals of chord voicings and harmonic progressions in the jazz idiom.		
<b>MUS 2631 Applied Strings-Principal</b>	<b>3 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2632 Applied Strings-Principal</b>	<b>3 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		
<b>MUS 2633 Applied Strings-Principal</b>	<b>2 cr.</b>	
Private instruction (one hour per week) or small group instruction (two hours per week).		

<b>MUS 2701 Applied Woodwind</b>	3 cr.	<b>MUS 2801 Applied Composition</b>	3 cr.
Private instruction (one hour per week).		Prerequisite: MUS 2106 or consent of department. A study of the techniques of musical composition. Designed for the student whose applied area is composition. Special emphasis will be placed on the development of the student's individual style.	
<b>MUS 2702 Applied Woodwind</b>	3 cr.		
Private instruction (one hour per week).			
<b>MUS 2703 Applied Woodwind</b>	2 cr.	<b>MUS 2802 Applied Composition</b>	3 cr.
Private instruction (one hour per week).		Prerequisite: MUS 2106 or consent of department. A study of the techniques of musical composition. Designed for the student whose applied area is composition. Special emphasis will be placed on the development of the student's individual style.	
<b>MUS 2705 Jazz Improvisation</b>	2 cr.		
Prerequisites: MUS 1102 and consent of department. A course in melodic improvisation designed to prepare the student with the theoretical background and improvisational techniques utilized in jazz performance. Students will be grouped according to their ability and experience.			
<b>MUS 2706 Jazz Improvisation</b>	2 cr.	<b>MUS 2807 Intermediate Jazz Arranging</b>	3 cr.
Prerequisites: MUS 1102 and consent of department. A course in melodic improvisation designed to prepare the student with the theoretical background and improvisational techniques utilized in jazz performance. Students will be grouped according to their ability and experience.		Prerequisite: MUS 2108 or consent of department. Continuation of MUS 2108 with increased emphasis on the completion of more extended arrangements. To be taken concurrently with MUS 4101. Private or small group instruction.	
<b>MUS 2711 Applied Brass</b>	3 cr.	<b>MUS 2808 Intermediate Jazz Arranging</b>	3 cr.
Private instruction (one hour per week).		Prerequisite: MUS 2807 or consent of department. Continuation of MUS 2807 with increased emphasis on the completion of more extended arrangements. To be taken concurrently with MUS 4102.	
<b>MUS 2712 Applied Brass</b>	3 cr.	<b>MUS 3099 Senior Honors Thesis</b>	1-6 cr.
Private instruction (one hour per week).		Prerequisite: consent of Music Department and the Honors Program. Directed research under a Music faculty member culminating in a written thesis. Course may be repeated up to three consecutive semesters for a total of six credits.	
<b>MUS 2713 Applied Brass</b>	2 cr.		
Private instruction (one hour per week).		<b>MUS 3103 Marching Band Techniques</b>	2 cr.
<b>MUS 2721 Applied Percussion</b>	3 cr.	The purpose of this course is to give the music education student the necessary skills to effectively design, organize, teach, and evaluate marching band shows and parade marching.	
Private instruction (one hour per week).		<b>MUS 3104 Band Arranging</b>	2 cr.
<b>MUS 2722 Applied Percussion</b>	3 cr.	Prerequisite: Music 4102 or equivalent. A study of band instrumentation including both transcription from other media and original composition. Two hours of lecture	
Private instruction (one hour per week).		<b>MUS 3111 Conducting I</b>	2 cr.
<b>MUS 2723 Applied Percussion</b>	2 cr.	Prerequisite: MUS 2102 or consent of department. Basic mechanics of conducting and introduction to elements of vocal conducting technique. Beat patterns, conducting theory, hand position, group vocal techniques, and rehearsal strategies are the primary foci.	
Private instruction (one hour per week).		<b>MUS 3112 Conducting II</b>	2 cr.
<b>MUS 2731 Applied Woodwind-Principal</b>	3 cr.	Prerequisite: MUS 3111 or consent of department. Development of the basic conducting technique learned in MUS 3111 and introduction to instrumental conducting. Clarity of gestures, score reading and study, instrumental transposition, and rehearsal psychology/philosophy will be given primary emphases	
Private instruction (one hour per week) or small group instruction (two hours per week).		<b>MUS 3150 Music Theory Project</b>	0 cr.
<b>MUS 2732 Applied Woodwind-Principal</b>	3 cr.	Required of Music Theory and Composition majors who select theory as an emphasis. This project will either be written analysis of a major work or a study on an appropriate theoretical subject as approved by the theory and composition faculty. A faculty committee will grade the project on a pass-fail basis.	
Private instruction (one hour per week) or small group instruction (two hours per week).		<b>MUS 3250 Music History Project</b>	0 cr.
<b>MUS 2733 Applied Woodwind-Principal</b>	2 cr.	Required of music history majors. Written presentation, a research project subject to the approval of the music history faculty. A faculty committee will grade the project on a Pass-Fail basis.	
Private instruction (one hour per week) or small group instruction (two hours per week).		<b>MUS 3382 Materials and Methods of Teaching Vocal Music in the Elementary Classroom</b>	3 cr.
<b>MUS 2741 Applied Brass</b>	3 cr.	(EDCI 3382 and MUS 3382 are cross-listed) Prerequisites: EDCI 3100 and 3200 and consent of department. Consideration of methods and material in teaching vocal music in grades Pre-K through 6. Appropriate field experiences may be required.	
Private instruction (one hour per week) or small group instruction (two hours per week).			
<b>MUS 2742 Applied Brass</b>	3 cr.		
Private instruction (one hour per week) or small group instruction (two hours per week).			
<b>MUS 2743 Applied Brass</b>	2 cr.		
Private instruction (one hour per week) or small group instruction (two hours per week).			
<b>MUS 2781 Applied Percussion</b>	3 cr.		
Private instruction (one hour per week) or small group instruction (two hours per week).			
<b>MUS 2782 Applied Percussion</b>	3 cr.		
Private instruction (one hour per week) or small group instruction (two hours per week).			
<b>MUS 2783 Applied Percussion</b>	2 cr.		
Private instruction (one hour per week) or small group instruction (two hours per week).			

<b>MUS 3383 Materials and Methods of Teaching Instrumental Music in Elementary and Secondary Schools</b>	<b>3 cr.</b>	<b>MUS 3595 Academic Year Abroad: Special Topics in Music</b>	<b>3 cr.</b>
(EDCI 3383 and MUS 3383 are cross-listed) Prerequisites: EDCI 3100 and 3200 and consent of department. Consideration of methods and materials in teaching instrumental music. Appropriate field experiences may be required.		This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.	
<b>MUS 3384 Materials and Methods of Teaching Vocal Music in Secondary Schools</b>	<b>3 cr.</b>	<b>MUS 3601 Applied Strings</b>	<b>3 cr.</b>
(EDCI 3384 and MUS 3384 are cross-listed) Prerequisites: EDCI 3100 or 3200 and consent of department. Considerations of methods and materials in teaching vocal music in grades 7-12. Appropriate field experiences may be required.		Private instruction (one hour per week).	
<b>MUS 3401 Applied Keyboard</b>	<b>3 cr.</b>	MUS 3602 Applied Strings	3 cr.
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3402 Applied Keyboard</b>	<b>3 cr.</b>	<b>MUS 3603 Applied Strings</b>	<b>2 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3403 Applied Keyboard</b>	<b>2 cr.</b>	<b>MUS 3605 Jazz Keyboard</b>	<b>1 cr.</b>
Private instruction (one hour per week).		Prerequisite: MUS 2606 or consent of department. Continuation of MUS 2606. This course explores the use of new chord progressions and voicings in the jazz idiom with the objective of creating full-voiced arrangements for the keyboard.	
<b>MUS 3431 Applied Keyboard-Principal</b>	<b>3 cr.</b>	<b>MUS 3606 Jazz Keyboard</b>	<b>1 cr.</b>
Private instruction (one hour per week) or small group instruction (two hours per week).		Prerequisite: MUS 3605 or consent of department. Continuation of MUS 3605. This course explores the use of new chord progressions and voicings in the jazz idiom with the objective of creating full-voiced arrangements for the keyboard.	
<b>MUS 3432 Applied Keyboard-Principal</b>	<b>3 cr.</b>	<b>MUS 3631 Applied Strings-Principal</b>	<b>3 cr.</b>
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week) or small group instruction (two hours per week).	
<b>MUS 3433 Applied Keyboard-Principal</b>	<b>2 cr.</b>	<b>MUS 3632 Applied Strings-Principal</b>	<b>3 cr.</b>
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week) or small group instruction (two hours per week).	
<b>MUS 3451 Applied Keyboard</b>	<b>3 cr.</b>	<b>MUS 3633 Applied Strings-Principal</b>	<b>2 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week) or small group instruction (two hours per week).	
<b>MUS 3452 Applied Keyboard</b>	<b>3 cr.</b>	<b>MUS 3651 Applied Strings</b>	<b>3 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3453 Applied Keyboard</b>	<b>2 cr.</b>	<b>MUS 3652 Applied Strings</b>	<b>3 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3501 Applied Voice</b>	<b>3 cr.</b>	<b>MUS 3653 Applied Strings</b>	<b>2 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3502 Applied Voice</b>	<b>3 cr.</b>	<b>MUS 3701 Applied Woodwind</b>	<b>3 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3503 Applied Voice</b>	<b>2 cr.</b>	<b>MUS 3702 Applied Woodwind</b>	<b>3 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3531 Applied Voice-Principal</b>	<b>3 cr.</b>	<b>MUS 3703 Applied Woodwind</b>	<b>2 cr.</b>
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week).	
<b>MUS 3532 Applied Voice-Principal</b>	<b>3 cr.</b>	<b>MUS 3711 Applied Brass</b>	<b>3 cr.</b>
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week).	
<b>MUS 3533 Applied Voice-Principal</b>	<b>2 cr.</b>	<b>MUS 3712 Applied Brass</b>	<b>3 cr.</b>
Private instruction (one hour per week) or small group instruction (two hours per week).		Private instruction (one hour per week).	
<b>MUS 3551 Applied Voice</b>	<b>3 cr.</b>	<b>MUS 3713 Applied Brass</b>	<b>2 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3552 Applied Voice</b>	<b>3 cr.</b>	<b>MUS 3721 Applied Percussion</b>	<b>3 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
<b>MUS 3553 Applied Voice</b>	<b>2 cr.</b>	<b>MUS 3722 Applied Percussion</b>	<b>3 cr.</b>
Private instruction (one hour per week).		Private instruction (one hour per week).	
		<b>MUS 3723 Applied Percussion</b>	<b>2 cr.</b>
		Private instruction (one hour per week).	
		<b>MUS 3731 Applied Woodwind-Principal</b>	<b>3 cr.</b>
		Private instruction (one hour per week) or small group instruction (two hours per week).	

- MUS 3732 Applied Woodwind-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3733 Applied Woodwind-Principal** 2 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3741 Applied Brass-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3742 Applied Brass-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3743 Applied Brass-Principal** 2 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3751 Applied Woodwind** 3 cr.  
Private instruction (one hour per week).
- MUS 3752 Applied Woodwind** 3 cr.  
Private instruction (one hour per week).
- MUS 3753 Applied Woodwind** 2 cr.  
Private instruction (one hour per week).
- MUS 3761 Applied Brass** 3 cr.  
Private instruction (one hour per week).
- MUS 3762 Applied Brass** 3 cr.  
Private instruction (one hour per week).
- MUS 3763 Applied Brass** 2 cr.  
Private instruction (one hour per week).
- MUS 3771 Applied Percussion** 3 cr.  
Private instruction (one hour per week).
- MUS 3772 Applied Percussion** 3 cr.  
Private instruction (one hour per week).
- MUS 3773 Applied Percussion** 2 cr.  
Private instruction (one hour per week).
- MUS 3781 Applied Percussion-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3782 Applied Percussion-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3783 Applied Percussion-Principal** 2 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 3801 Applied Composition** 3 cr.  
Prerequisite: MUS 2106 or consent of department. A study of the techniques of musical composition. Designed for the student whose applied area is composition. Special emphasis will be placed on the development of the student's individual style.
- MUS 3802 Applied Composition** 3 cr.  
Prerequisite: MUS 2106 or consent of department. A study of the techniques of musical composition. Designed for the student whose applied area is composition. Special emphasis will be placed on the development of the student's individual style.
- MUS 3950 Half Recital In Performance** 0 cr.  
Presentation of a public recital of at least 25 minutes of actual playing duration. Content of the program must be similar to that normally included in professional recitals. A faculty committee will approve the program and grade the performance on a pass-fail basis.
- MUS 3960 Half Recital in Composition No credit** 0 cr.  
Required of music theory and composition majors who select composition as an emphasis. Presentation of a public recital of at least 25 minutes of actual musical duration. Content of the program will consist of compositions written during the student's compositional study. A faculty committee will approve the program and grade the recital on a Pass-Fail basis.
- MUS 3990 Full Recital** 0 cr.  
Presentation of a public recital of at least 50 minutes of actual playing duration. Content of program must be similar to that normally included in professional recitals and must include works in several styles. A faculty committee will approve the program and grade the performance on a Pass-Fail basis.
- MUS 4001 Special Topics In Music** 1-3 cr.  
Prerequisite: consent of department. Specific areas of interest will be studied under the direction of faculty member. Topics may vary from semester to semester. This course may be repeated, but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.
- MUS 4105 Advanced Orchestration** 3 cr.  
Prerequisites: MUS 2105 2106 or consent of department. A study of advanced orchestration techniques with an emphasis on late nineteenth and twentieth century practices.
- MUS 4109 Advanced Jazz Harmony and Theory** 3 cr.  
Prerequisite: MUS 2110 or consent of department. An introduction to modal and polychordal harmonies with emphasis on analysis of extended form.
- MUS 4110 Advanced Jazz Harmony and Theory** 3 cr.  
Prerequisite: MUS 4109 or consent of department. A continuation of MUS 4109 with increased emphasis on the creation of "original" jazz compositions employing modal polychordal harmonies and extended forms.
- MUS 4202 Studies in Renaissance Music** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. A study of the development of western music from the Flemish School of Ockeghem and Obrecht through the Venetian School of Giovanni Gabrieli.
- MUS 4203 Studies in Baroque Music** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. A study of the development of western music from the Nuove Musiche through the death of J. S. Bach.
- MUS 4204 Studies in Music of the Classical Era** 3 cr.  
Prerequisites: MUS 2101, 2102, 2201, and 2202., An intensive study of the music of the eighteenth and early nineteenth centuries, beginning with the emergence of the galant style and ending with the music of Beethoven's last period.
- MUS 4205 Studies in Music of the Romantic Era** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. An intensive study of the music of the nineteenth century beginning with the operas of Weber and ending with Mahler and the earlier works of Richard Strauss.
- MUS 4206 Twentieth Century Music** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. An intensive study of the music of the modern period from Debussy to the present.
- MUS 4291 Seminar in Music History** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202 or the equivalent. An intensive study of a limited aspect of music history through guided individual research and presentation of findings. Topic will vary

- from semester to semester. Course may be taken for credit three times.
- MUS 4310 Vocal Pedagogy** 2 cr.  
Prerequisite: consent of department. A study of vocal teaching techniques including anatomy of vocal tract, physiological process and acoustical properties. Two hours of lecture and one hour of laboratory each week
- MUS 4311 Piano Pedagogy** 2 cr.  
Prerequisite: MUS 2402 or equivalent. An examination and discussion of piano teaching materials and methods with emphasis on the elementary level. Course will include supervised teaching and demonstration classes. Two hours of lecture and one hour of laboratory each week.
- MUS 4705 Advanced Jazz Improvisation** 2 cr.  
Prerequisite: MUS 2706 or consent of department. A continuation of MUS 2706 with the objective of developing a personal style. Performances in the environment of the small combo with students grouped according to experience.
- MUS 4706 Advanced Jazz Improvisation** 2 cr.  
Prerequisite: MUS 4705 or consent of department. A continuation of MUS 4705 that focuses on the skills needed to achieve a personal style as an improviser within the jazz context. Performances in both small combos and large ensembles.
- MUS 4807 Advanced Jazz Arranging/Composition** 3 cr.  
Prerequisite: MUS 2808 or consent of department. Continuation of MUS 2808 with emphasis on arrangements and compositions for both small and large ensembles. Private or small group instruction.
- MUS 4808 Advanced Jazz Arranging/Composition** 3 cr.  
Prerequisite: MUS 4807 or consent of department. Continuation of MUS 3807 with emphasis on both arrangements and original compositions for the larger ensembles. Private or small group instruction.
- MUS 4810 Piano Repertoire: Renaissance-Classical** 2 cr.  
Prerequisite: consent of department. A general survey of the solo piano repertoire from the period preceding Bach through the Classical period. Designed to acquaint the keyboard major with literature available for performance.
- MUS 4811 Piano Repertoire: Romantic-Contemporary** 2 cr.  
Prerequisite: consent of department. A general survey of the solo piano repertoire of the Romantic and Contemporary periods. Designed to acquaint the keyboard major with literature available for performance
- MUS 4813 German Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation and poetic content of the art song in German from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4814 French Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation, and poetic content of the art song in French from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4815 Italian Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation, and poetic content of the art song in Italian from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4816 English Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation, and poetic content of the Art Song in English from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4818 Seminar in Choral Repertory** 3 cr.  
Prerequisites: MUS 2102 and 2201-2202 or consent of department. A survey of the monuments of choral repertory and an examination of the practical and philosophical criteria necessary for appropriate repertoire selection through the use of readings, listening assignments, and selected score preparations. Required for vocal music education majors.
- MUS 4901 Chamber Ensemble** 1 cr.  
Prerequisite: consent of department. Intensive study of advanced chamber music and other works for small ensembles. In addition to participation in the ensemble, students will be assigned extra duties of a responsible nature such as coaching, conducting extra rehearsals, solo work, etc. A maximum of three hours credit in ensembles may be applied toward the graduate degree.
- MUS 4902 University Jazz Band** 1 cr.  
Prerequisite: consent of department. The study and performance of large ensemble jazz materials with emphasis on contemporary idioms. In addition to participation in the ensemble, students will be assigned extra duties of responsible nature, such as conducting sectional rehearsals, solo work, assistant conductor, etc. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4903 University Band** 1 cr.  
Offered each semester and open to all students with consent of department. Intensive study of traditional and modern repertoire for concert and marching band. In addition to participation in the ensemble, students will be assigned extra duties such as section leading, conducting sectional rehearsals, and solo work. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4905 University Chorale** 1 cr.  
Offered each semester and open to all students by audition. Study and performance of choral literature. Campus and tour performances. In addition to participation in the ensemble, students will be assigned extra duties such as section leading, conducting sectional rehearsals, and solo work. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4906 Chamber Singers** 1 cr.  
Offered each semester and open to all students by audition. A small ensemble of mixed voices for the study and performance of choral music dating from 1500 to the present. In addition to participation in the ensemble, students will be assigned extra duties such as section leading, conducting sectional rehearsals, and solo work. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4907 Piano Accompaniment** 1 cr.  
Prerequisite: consent of department. Guided experience in sight-reading, preparation, and performance of advanced accompaniments for vocal and instrumental performers. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4908 Wind Ensemble** 1 cr.  
Offered each semester. Prerequisite: consent of department. Study and performance of advanced repertoire for wind ensemble. In addition to participation in the ensemble, students will be assigned extra duties of a responsible nature such as coaching, conducting

- extra rehearsals, solo work, etc. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4909 University Orchestra** 1 cr.  
Offered each semester. Prerequisite: audition. Study and performance of orchestral repertoire. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4910 University Orchestra** 1 cr.  
Offered each semester. Prerequisite: audition. Study and performance of orchestral repertoire. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4950 Opera Theater** 1 cr.  
Prerequisite: consent of department. A workshop course especially designed for the coordination of music and acting with particular emphasis on training the singing actor. Coaching in operatic scenes and training in the basic principles of dramatic aspects of opera. In addition to participation in the ensemble, extra duties of a responsible nature will be assigned. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 6000 Directed Independent Study** 1-3 cr.  
Prerequisite: consent of department. Independent study in the graduate student's area of specialization, under the direction of a designated member of the graduate faculty. Credit is only applicable toward elective requirement. Total credit is limited to nine hours.
- MUS 6001 Directed Independent Study** 1-3 cr.  
Prerequisite: consent of department. Independent study in the graduate student's area of specialization, under the direction of a designated member of the graduate faculty. Credit is only applicable toward elective requirement. Total credit is limited to nine hours.
- MUS 6002 Directed Independent Study** 1-3 cr.  
Prerequisite: consent of department. Independent study in the graduate student's area of specialization, under the direction of a designated member of the graduate faculty. Credit is only applicable toward elective requirement. Total credit is limited to nine hours.
- MUS 6010 A Music Overview for Arts Administrators** 3 cr.  
Prerequisite: Consent of Department. A survey of the music business with emphasis on the many aspects of the recording industry, live performing arts and the local music scene.
- MUS 6100 Graduate Theory in Performance** 3 cr.  
Prerequisites: MUS 4101 and 4102 or consent of department. This course is designed to demonstrate practical usage of theoretical ideas in musical performance.
- MUS 6101 Analytical Studies-Baroque Classical** 3 cr.  
A detailed study of selected major works of the Baroque and Classical periods
- MUS 6102 Analytical Studies-Romantic Twentieth Century** 3 cr.  
A detailed study of selected major works of the Romantic period and the Twentieth Century will be the basis of this study.
- MUS 6104 Theory Pedagogy** 3 cr.  
Prerequisite: consent of department. Prerequisite: MUS 6101 or 6102. An examination and discussion of music theory teaching materials and methods with an emphasis on college-level instruction.
- MUS 6105 Eighteenth Century Polyphonic Techniques** 3 cr.  
Prerequisite: MUS 4101 or equivalent. A detailed study of specific polyphonic techniques.
- MUS 6111 Seminar in Choral Conducting** 3 cr.  
Prerequisites: Consent of department and MUS 3111 - 3112 or equivalent. An advanced course in the interpretation of choral literature with special attention given to conducting technique, rehearsal problems and their solutions, and score preparation. Laboratory experience will be provided. May be repeated once for credit by students with choral conducting emphasis.
- MUS 6112 Seminar in Instrumental Conducting** 3 cr.  
Prerequisite: Consent of department and MUS 3111 - 3112 or equivalent. An advanced course in the interpretation of instrumental literature with special attention given to conducting technique, rehearsal problems and their solutions, and score preparation. Laboratory experience will be provided. May be repeated once for credit by students with instrumental conducting emphasis.
- MUS 6191 Seminar in Music Theory** 3 cr.  
Prerequisite: consent of department MUS 6101 or 6102. An intensive study of a limited aspect of music theory through guided research and presentation of findings. Topic will vary from semester to semester. Course may be taken three times.
- MUS 6291 Seminar in Music History** 3 cr.  
An intensive study of a limited aspect of music history through guided individual research and presentation of findings. Topic will vary from semester to semester. Course may be taken three times
- MUS 6300 Seminar in Jazz History** 3 cr.  
Prerequisite: MUS 2205 or consent of department. A focused study of the music of a single contributor or related group of contributors selected from the major innovators in jazz history. Topic will vary from semester to semester.
- MUS 6310 Jazz Research & Discography** 3 cr.  
Prerequisite: MUS 2205. or consent of department. An advanced study of jazz research materials and methodology with an emphasis on jazz discography.
- MUS 6391 Advanced Seminar in Choral Music** 3 cr.  
Prerequisite: consent of department or 4818. An intensive study focusing on a selected topic in choral music through guided research and classroom discussion. Topic will vary from semester to semester. Course may be taken three times.
- MUS 6401 Applied Keyboard** 3 cr.  
Private instruction (one hour per week).
- MUS 6402 Applied Keyboard** 3 cr.  
Private instruction (one hour per week).
- MUS 6431 Applied Keyboard-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6432 Applied Keyboard-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6501 Applied Voice** 3 cr.  
Private instruction (one hour per week).
- MUS 6502 Applied Voice** 3 cr.  
Private instruction (one hour per week).
- MUS 6531 Applied Voice-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6532 Applied Voice-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6601 Applied Strings** 3 cr.  
Private instruction (one hour per week).
- MUS 6602 Applied Strings** 3 cr.  
Private instruction (one hour per week).

- MUS 6631 Applied Strings-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6632 Applied Strings-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6701 Applied Woodwinds** 3 cr.  
Private instruction (one hour per week).
- MUS 6702 Applied Woodwinds** 3 cr.  
Private instruction (one hour per week).
- MUS 6711 Applied Brass** 3 cr.  
Private instruction (one hour per week).
- MUS 6712 Applied Brass** 3 cr.  
Private instruction (one hour per week).
- MUS 6721 Applied Percussion** 3 cr.  
Private instruction (one hour per week).
- MUS 6722 Applied Percussion** 3 cr.  
Private instruction (one hour per week).
- MUS 6731 Applied Woodwinds-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6732 Applied Woodwinds-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6741 Applied Brass-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6742 Applied Brass-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6781 Applied Percussion-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6782 Applied Percussion-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6801 Applied Composition** 3 cr.  
Private instruction (one hour per week).
- MUS 6802 Applied Composition** 3 cr.  
Private instruction (one hour per week).
- MUS 6831 Applied Composition-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6832 Applied Composition-Principal** 3 cr.  
Private instruction (one hour per week) or small group instruction (two hours per week).
- MUS 6900 Graduate Colloquium** 0 cr.  
A forum to discuss problems common to all musical disciplines and to seek creative solutions through dialogue within the academic community. Required of all graduate students. Will be graded as satisfactory or unsatisfactory.
- MUS 6950 Half Recital** 1 cr.  
Presentation of a public recital of at least 30 minutes of actual playing duration. Content of the program must be similar to that normally included in professional recitals. A faculty committee will approve the program and grade the performance on a Pass-Fail basis.
- MUS 6990 Graduate Recital** 3 cr.  
Presentation of a public recital of at least 60 minutes of actual playing duration. Content of the program must be similar to that normally included in professional recitals and must include works in several styles. A faculty committee will approve the program and grade the performance on a Pass-Fail basis.
- MUS 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- MUS 7040 Examination or Thesis Only No credit** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- MUS 4001G Special Topics In Music** 1-3 cr.  
Prerequisite: consent of department. Specific areas of interest will be studied under the direction of faculty member. Topics may vary from semester to semester. This course may be repeated, but total credit may not exceed six semester hours. Section number will correspond with credit to be earned.
- MUS 4105G Advanced Orchestration** 3 cr.  
Prerequisites: MUS 2105 2106 or consent of department. A study of advanced orchestration techniques with an emphasis on late nineteenth and twentieth century practices.
- MUS 4109G Advanced Jazz Harmony and Theory** 3 cr.  
Prerequisite: MUS 2110 or consent of department. An introduction to modal and polychordal harmonies with emphasis on analysis of extended form.
- MUS 4110G Advanced Jazz Harmony and Theory** 3 cr.  
Prerequisite: MUS 4109 or consent of department. A continuation of MUS 4109 with increased emphasis on the creation of "original" jazz compositions employing modal polychordal harmonies and extended forms.
- MUS 4202G Studies in Renaissance Music** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. A study of the development of western music from the Flemish School of Ockeghem and Obrecht through the Venetian School of Giovanni Gabrieli.
- MUS 4203G Studies in Baroque Music** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. A study of the development of western music from the Nuove Musiche through the death of J. S. Bach.
- MUS 4204G Studies in Music of the Classical Era** 3 cr.  
Prerequisites: MUS 2101, 2102, 2201, and 2202. An intensive study of the music of the eighteenth and early nineteenth centuries, beginning with the emergence of the galant style and ending with the music of Beethoven's last period.
- MUS 4205G Studies in Music of the Romantic Era** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. An intensive study of the music of the nineteenth century beginning with the operas of Weber and ending with Mahler and the earlier works of Richard Strauss.
- MUS 4206G Twentieth Century Music** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202. An intensive study of the music of the modern period from Debussy to the present.
- MUS 4291G Seminar in Music History** 3 cr.  
Prerequisites: MUS 2101 2102 2201 and 2202 or the equivalent. An intensive study of a limited aspect of music history through guided

- individual research and presentation of findings. Topic will vary from semester to semester. Course may be taken for credit three times.
- MUS 4310G Vocal Pedagogy** 2 cr.  
Prerequisite: consent of department. A study of vocal teaching techniques including anatomy of vocal tract, physiological process and acoustical properties. Two hours of lecture and one hour of laboratory each week
- MUS 4311G Piano Pedagogy** 2 cr.  
Prerequisite: MUS 2402 or equivalent. An examination and discussion of piano teaching materials and methods with emphasis on the elementary level. Course will include supervised teaching and demonstration classes. Two hours of lecture and one hour of laboratory each week.
- MUS 4705G Advanced Jazz Improvisation** 2 cr.  
Prerequisite: MUS 2706 or consent of department. A continuation of MUS 2706 with the objective of developing a personal style. Performances in the environment of the small combo with students grouped according to experience.
- MUS 4706G Advanced Jazz Improvisation** 2 cr.  
Prerequisite: MUS 4705 or consent of department. A continuation of MUS 4705 that focuses on the skills needed to achieve a personal style as an improviser within the jazz context. Performances in both small combos and large ensembles.
- MUS 4807G Advanced Jazz Arranging/Composition** 3 cr.  
Prerequisite: MUS 2808 or consent of department. Continuation of MUS 2808 with emphasis on arrangements and compositions for both small and large ensembles. Private or small group instruction.
- MUS 4808G Advanced Jazz Arranging/Composition** 3 cr.  
Prerequisite: MUS 4807 or consent of department. Continuation of MUS 3807 with emphasis on both arrangements and original compositions for the larger ensembles. Private or small group instruction.
- MUS 4810G Piano Repertoire: Renaissance-Classical** 2 cr.  
Prerequisite: consent of department. A general survey of the solo piano repertoire from the period preceding Bach through the Classical period. Designed to acquaint the keyboard major with literature available for performance.
- MUS 4811G Piano Repertoire: Romantic-Contemporary** 2 cr.  
Prerequisite: consent of department. A general survey of the solo piano repertoire of the Romantic and Contemporary periods. Designed to acquaint the keyboard major with literature available for performance
- MUS 4813G German Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation and poetic content of the art song in German from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4814G French Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation, and poetic content of the art song in French from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4815G Italian Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation, and poetic content of the art song in Italian from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4816G English Art Song Repertory** 2 cr.  
Prerequisite: consent of department. A study of the history, interpretation, and poetic content of the Art Song in English from the Baroque period to the present. Designed to acquaint the vocal major with the literature available for performance.
- MUS 4818G Seminar in Choral Repertory** 3 cr.  
Prerequisites: MUS 2102 and 2201-2202 or consent of department. A survey of the monuments of choral repertory and an examination of the practical and philosophical criteria necessary for appropriate repertoire selection through the use of readings, listening assignments, and selected score preparations. Required for vocal music education majors.
- MUS 4901G Chamber Ensemble** 1 cr.  
Prerequisite: consent of department. Intensive study of advanced chamber music and other works for small ensembles. In addition to participation in the ensemble, students will be assigned extra duties of a responsible nature such as coaching, conducting extra rehearsals, solo work, etc. A maximum of three hours credit in ensembles may be applied toward the graduate degree.
- MUS 4902G University Jazz Band** 1 cr.  
Prerequisite: consent of department. The study and performance of large ensemble jazz materials with emphasis on contemporary idioms. In addition to participation in the ensemble, students will be assigned extra duties of responsible nature, such as conducting sectional rehearsals, solo work, assistan conductor, etc. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4903G University Band** 1 cr.  
Offered each semester and open to all students with consent of department. Intensive study of traditional and modern repertoire for concert and marching band. In addition to participation in the ensemble, students will be assigned extra duties such as section leading, conducting sectional rehearsals, and solo work. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4905G University Chorale** 1 cr.  
Offered each semester and open to all students by audition. Study and performance of choral literature. Campus and tour performances. In addition to participation in the ensemble, students will be assigned extra duties such as section leading, conducting sectional rehearsals, and solo work. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4906G Chamber Singers** 1 cr.  
Offered each semester and open to all students by audition. A small ensemble of mixed voices for the study and performance of choral music dating from 1500 to the present. In addition to participation in the ensemble, students will be assigned extra duties such as section leading, conducting sectional rehearsals, and solo work. A maximum of three hours credit in ensembles may be applied toward a graduate degree
- MUS 4907G Piano Accompaniment** 1 cr.  
Prerequisite: consent of department. Guided experience in sight-reading, preparation, and performance of advanced accompaniments for vocal and instrumental performers. A maximum of three hours credit in ensembles may be applied toward a graduate degree.
- MUS 4908G Wind Ensemble** 1 cr.  
Offered each semester. Prerequisite: consent of department. Study and performance of advanced repertoire for wind ensemble. In addition to participation in the ensemble, students will be assigned extra duties of a responsible nature such as coaching, conducting

extra rehearsals, solo work, etc. A maximum of three hours credit in ensembles may be applied toward a graduate degree.

**MUS 4909G University Orchestra** 1 cr.  
Offered each semester. Prerequisite: audition. Study and performance of orchestral repertoire. A maximum of three hours credit in ensembles may be applied toward a graduate degree.

**MUS 4910G University Orchestra** 1 cr.  
Offered each semester. Prerequisite: audition. Study and performance of orchestral repertoire. A maximum of three hours credit in ensembles may be applied toward a graduate degree.

**MUS 4950G Opera Theater** 1 cr.  
Prerequisite: consent of department. A workshop course especially designed for the coordination of music and acting with particular emphasis on training the singing actor. Coaching in operatic scenes and training in the basic principles of dramatic aspects of opera. In addition to participation in the ensemble, extra duties of a responsible nature will be assigned. A maximum of three hours credit in ensembles may be applied toward a graduate degree.

### Naval Architecture and Marine Engineering

**NAME 2150 Introduction to Ship and Off-Shore Structures Design and Construction** 3 cr.  
Prerequisites: Mathematics 2111 or 2108 and Mechanical Engineering 1781. Types and purposes of ships and off-shore structures; basic concepts of hull resistance and propulsion, power systems, ship and platform strength and dynamics; and the marine industry.

**NAME 2160 Form Calculations and Stability** 4 cr.  
Prerequisites: ENCE 2350 and NAME 1150. Static stability, hydrostatic curves, determination of areas, volumes, displacement; and buoyancy of damaged vessels and stability, launching of ships, towing of off-shore platform structures and their emplacement.

**NAME 3091 Naval Architecture Design Project** 3 cr.  
Prerequisites: Senior standing and consent of school. Individual or team study and evolution of a project involving engineering design, synthesis of systems in naval architecture. A comprehensive written report is required.

**NAME 3092 Marine Engineering Design Project** 3 cr.  
Prerequisites: Senior standing and consent of school. Individual or team study and evolution of a project involving engineering design, synthesis of systems in marine engineering. A comprehensive written report is required.

**NAME 3093 Special Problems in Naval Architecture** 1 cr.  
Prerequisite: Junior standing in engineering. Seminar, independent study, and research participation in naval architecture.

**NAME 3094 Special Problems in Naval Architecture** 1 cr.  
Prerequisite: Junior standing in engineering. Seminar, independent study, and research participation in naval architecture.

**NAME 3095 Special Problems in Marine Engineering** 1 cr.  
Prerequisite: Junior standing in engineering. Seminar, independent study, and research participation in marine engineering.

**NAME 3096 Special Problems in Marine Engineering** 1 cr.  
Prerequisite: Junior standing in engineering. Seminar, independent study, and research participation in marine engineering.

**NAME 3120 Ship Hull Strength** 3 cr.  
Prerequisite: ENCE 2351. Longitudinal strength, simple beam theory, trochoidal wave and Smith correction; weight, buoyancy, load, shearing force and bending moment curves; midship section modulus; composite hull girder; transverse strength; strain energy and moment distribution methods; torsional strength; torsion of

thin-walled, open sections; torque distribution; torsional loads; the use of classification society rules in the mid-ship section.

**NAME 3130 Marine Engineering I (Power Systems)** 3 cr.  
Prerequisites: credit or registration in Mechanical Engineering 3720 and Mechanical Engineering 3770. Diesel, steam turbine, and gas turbine marine power systems, their operating characteristics and limitations; engine-propeller matching; propeller characteristics, cavitation; marine boilers and nuclear reactors; piping design; heat exchangers; electric power generation; and auxiliary systems.

**NAME 3140 Computers in Naval Architecture** 3 cr.  
Prerequisites: Naval Architecture 2160 and Computer Science 1201. Numerical methods, curve and surface representation, solution of equations, use of software for hull design including hull fairing, hydrostatic calculations, arrangement drawing and strength analysis.

**NAME 3150 Ship Resistance and Propulsion** 4 cr.  
Prerequisites: Mechanical Engineering 3720 with NAME 2160 as a co-requisite. Ship resistance; dimensional analysis and similitude; model testing extrapolation; propulsion systems; propellers and their interaction with the hull; cavitation; super cavitating propellers; special craft, such as surface effect ships, submarines, and hydro-foils; and optimization.

**NAME 3160 Off-Shore Structure and Ship Dynamics** 4 cr.  
Prerequisites: Math 2221, ENCE 2351, ENME 3720, with NAME 2160 as a co-requisite. Theory of ship and off-shore structure motions in response to ocean waves; free vibration of single and multidegree of freedom systems; simple harmonic, general period, and random forced vibrations; transients; off-shore structure oscillations; the dynamics of launching and platform assembly; hull and propeller vibrations; maneuverability; and design applications.

**NAME 3900 Senior Honors Thesis** 1-6 cr.  
Prerequisites: admission to the Honors Program and consent of the director of the Honors Program and the chair of the school. Senior-level research and/or design project in Naval Architecture and Marine Engineering. Thesis and oral examination required. May be repeated for credit with total hours not to exceed six.

**NAME 4096 Special Topics in Naval Architecture** 3 cr.  
Prerequisite: Junior standing in engineering. May be taken for credit three times. No student may earn more than nine hours degree credit in Naval Architecture and Marine Engineering 4096 and 4097.

**NAME 4097 Special Topics in Marine Engineering** 3 cr.  
Prerequisite: Junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in NAME 4097.

**NAME 4120 Ship Structural Analysis and Design** 3 cr.  
Prerequisite: NAME 3120. Review of longitudinal strength; principal stress distributions and stress trajectories; local strength analysis; panels under lateral load; columns and stanchions; panels in buckling under uniform edge compression loading and panels under shear and combination loading; rational ship section design synthesis based on stress and loading hierarchy; primary, secondary, and tertiary stresses as criteria of strength in ship structural design, including grillage aspects.

**NAME 4121 Analysis and Design of Floating Offshore Structures** 3 cr.  
Prerequisite: NAME 2160. Design and analysis of floating offshore platforms in general. Unsteady hydrodynamics, linear and nonlinear water waves, prediction of wave forces on large and small bodies. Fluid pressure forces on moving bodies using relative motion

- approach and radiation/diffraction approach. Analysis and prediction of random waves and vessel response using spectral methods. Additional topics such as mooring analysis as time permits.
- NAME 4130 Marine Engineering II** 3 cr.  
Spring and fall semesters. Prerequisite: NAME 3130. A study of ship propulsion systems, including waste heat utilization, availability, diesel engine performance, compressible pipe flow, shafting alignment, machinery vibration, and torsional vibration analysis.
- NAME 4141 Curved Surface Design** 3 cr.  
Prerequisites: MATH 2112 and CSCI 1201. Computer-aided design of curved surfaces; wire-frame outlines of surface; boundary conditions; surface patches; geometric properties of surface; and smoothness.
- NAME 4142 Solid Modeling** 3 cr.  
Prerequisites: MATH 2112 and CSCI 1201. Computer-aided design of mechanical piece parts and assemblies of parts; a high-level language for modeling parts and assemblies; dimensioning and tolerancing; and the mathematics that underlies solid models and computer graphics.
- NAME 4150 Off-Shore Structures and Ship Design** 3 cr.  
Prerequisite: Senior standing in naval architecture and marine engineering. Preliminary ship and off-shore structures design to meet owner's general requirements; principal dimensions, form, power requirements, and stability; outfitting; structural design; and preparation of preliminary design drawings. Two hours of lecture and one three-hour laboratory.
- NAME 4151 Small Craft Design** 3 cr.  
Prerequisite: credit or registration in NAME 3120. Case study of a 60-foot motor boat design, planing theory, trim, lift and drag in planing, use of standard series, hydrofoil vessel performance calculations, seakeeping, hull structure, hull materials, powering using supercavitating propellers or pump-jet.
- NAME 4155 Off-Shore Structure and Ship Design Project** 3 cr.  
Prerequisite: NAME 4150. Completion of the project started in the prerequisite course; the preliminary design of a ship or other marine system, or a component thereof, such as a hull, machinery, or an off-shore platform. Six hours of laboratory.
- NAME 4160 Ship Hydrodynamics II** 3 cr.  
Spring and fall semesters. Prerequisite: NAME 3150. A study of ship hydrodynamic problems in the areas of viscous fluid motion, ideal fluid flow, two-dimensional hydrofoils, three-dimensional foils as well as propeller theory.
- NAME 4162 Offshore Structures and Ship Dynamics II** 3 cr.  
Prerequisites: NAME 3150 3160 and Mathematics 2115. Linear oscillatory motion of floating bodies (Ships and Offshore Structures) due to water waves. Vibration theory, unsteady ideal flow theory, water wave theory, and linear ship motions theory. Prediction of ship platform motion in regular and irregular waves. Developments in hydroelasticity, maneuvering, and nonlinear ship motion.
- NAME 4171 Admiralty Law for Engineers** 2 cr.  
Prerequisites: consent of department and Senior standing in engineering or equivalent. An introduction to legal problems which confront engineers in marine design, construction, and operation. Applies to river and ocean transport and offshore production.
- NAME 4181 Materials for Marine Design** 3 cr.  
Prerequisite: CHEM 1017 and PHYS 1061. Elements of materials science and of the corrosion of metals; effects of marine environments on construction materials; and methods for selecting materials in the design of marine structures and marine equipment.
- NAME 4182 Advanced Topics in Ship Structures** 3 cr.  
Prerequisite: NAME 4120 or consent of department. Energy methods applied to elements of ship structure; principles of virtual work; plasticity: static collapse of beams and plates; application of plasticity to various ship structural topics: slamming ice strengthening collision protection transverse web frame; ultimate strength of ship girder; probabilistic aspects; distribution curves of capability and demand; combination of varying stresses of different frequencies - quasistatic and vibratory stresses; probabilistic design of the hull girder to an acceptable risk of failure.
- NAME 4723 Ocean and Coastal Engineering** 3 cr.  
(ENCE 4723, ENME 4723, and NAME 4723 are cross-listed). Prerequisite: ENME 3720 or ENCE 3310 or consent of the department. Elements of wind and wave generation and forecasting, tidal phenomena, hurricanes, storm surge, tsunamis, interaction of waves and wind with coastal and offshore structures, coastal and estuary processes. Design aspects of various topics are discussed and analyzed: e.g., offshore structures, spar buoys, underwater pipelines, oil production risers, coastal protection, mooring cables, vortex shedding, gas flares, beach formation, harbor resonance, structure resonance, etc. A design project is required.
- NAME 6093 Independent Study in Naval Architecture** 1-6 cr.  
Individual projects in selected fields of naval architecture. Independent work under the direction of a faculty member on a subject of mutual interest. A written report will be required. Course may be repeated for credit but no more than a total of six credit hours may be applied toward a degree. Section number will correspond with credit to be earned.
- NAME 6097 Advanced Special Topics in Marine Engineering** 3 cr.  
Prerequisite: consent of school. Special lecture on subjects of current interest in marine engineering. May be taken for credit three times. No student may earn more than nine hours of degree credit in courses Naval Architecture and Marine Engineering 4096, 4097, 6097, 6098.
- NAME 6098 Advanced Special Topics in Marine Engineering** 3 cr.  
Prerequisite: consent of school. Special lecture on subjects of current interest in marine engineering. May be taken for credit three times. No student may earn more than nine hours of degree credit in courses Naval Architecture and Marine Engineering 4096, 4097, 6097, 6098.
- NAME 6121 Marine Structural Vibrations** 3 cr.  
Prerequisite: Naval Architecture and Marine Engineering 3160 or consent of department. This course focuses on vibration of ship and offshore structures including linear, nonlinear, and random vibrations and dynamic problems (slamming). The problems of vibration of plates and shells of ship hulls are also considered.
- NAME 6122 Composite Structures** 3 cr.  
Prerequisites: ENCE 2351, MATH 2221. Composite materials used in engineering; calculation of characteristics of materials; theory of composite structures; strength, buckling, and vibration of composite plates and shells; thermal stresses; elements of the mechanics of sandwich structures.
- NAME 6141 Curved Surface Analysis** 3 cr.  
Prerequisite: NAME 4141 or consent of department. Measures of the geometric properties of fluid dynamic control surfaces such as ship hulls, aircraft skins, and pump impellers. Angles, thicknesses, distances, areas, intersections, and shape. Applications to manufacturing

- NAME 6160 Numerical Methods in Hydrodynamics** 3 cr.  
Prerequisites: NAME 4160, CSCI 1201 or knowledge of computer programming. Numerical methods for the solution of governing equations in hydrodynamics. Use of numerical integration, finite difference methods, and use of viscous flow calculation software to calculate fluid pressure, force, and the flow field around geometric bodies and ship hulls.
- NAME 6162 Ship Motions** 3 cr.  
Prerequisites: ENME 3020 ENME 3720 and NAME 4160 or consent of department. Derivation of the equations of motion of a ship in six degrees of freedom; ship maneuvering; design criteria for controls fixed stability; rudder design; waves and wave effects; ship response in regular waves; ship response in random waves; design criteria for a ship.
- NAME 6175 Design of Fixed Offshore Platforms** 3 cr.  
(ENCE 6375 and NAME 6175 are cross-listed) Prerequisites: ENCE 3356 (or NAME 3120), ENCE 4358 (or NAME 3120), ENCE 4340, or permission of Department. Design of fixed offshore platform structures and their foundations; loadings, materials, design codes; design examples.
- NAME 4096G Special Topics in Naval Architecture** 3 cr.  
Prerequisite: Junior standing in engineering. May be taken for credit three times. No student may earn more than nine hours degree credit in Naval Architecture and Marine Engineering 4096 and 4097.
- NAME 4097G Special Topics in Marine Engineering** 3 cr.  
Prerequisite: Junior standing in engineering. Courses may be taken for credit three times. No student may earn more than nine hours degree credit in NAME 4097.
- NAME 4120G Ship Structural Analysis and Design** 3 cr.  
Prerequisite: NAME 3120. Review of longitudinal strength; principal stress distributions and stress trajectories; local strength analysis; panels under lateral load; columns and stanchions; panels in buckling under uniform edge compression loading and panels under shear and combination loading; rational ship section design synthesis based on stress and loading hierarchy; primary, secondary, and tertiary stresses as criteria of strength in ship structural design, including grillage aspects.
- NAME 4121G Analysis and Design of Floating Offshore Structures** 3 cr.  
Prerequisite: NAME 2160. Design and analysis of floating offshore platforms in general. Unsteady hydrodynamics, linear and nonlinear water waves, prediction of wave forces on large and small bodies. Fluid pressure forces on moving bodies using relative motion approach and radiation/diffraction approach. Analysis and prediction of random waves and vessel response using spectral methods. Additional topics such as mooring analysis as time permits.
- NAME 4130G Marine Engineering II** 3 cr.  
Spring and fall semesters. Prerequisite: NAME 3130. A study of ship propulsion systems, including waste heat utilization, availability, diesel engine performance, compressible pipe flow, shafting alignment, machinery vibration, and torsional vibration analysis.
- NAME 4141G Curved Surface Design** 3 cr.  
Prerequisites: MATH 2112 and CSCI 1201. Computer-aided design of curved surfaces; wire-frame outlines of surface; boundary conditions; surface patches; geometric properties of surface; and smoothness.
- NAME 4142G Solid Modeling** 3 cr.  
Prerequisites: MATH 2112 and CSCI 1201. Computer-aided design of mechanical piece parts and assemblies of parts; a high-level language for modeling parts and assemblies; dimensioning and tolerancing; and the mathematics that underlies solid models and computer graphics.
- NAME 4150G Off-Shore Structures and Ship Design** 3 cr.  
Prerequisite: Senior standing in naval architecture and marine engineering. Preliminary ship and off-shore structures design to meet owner's general requirements; principal dimensions, form, power requirements, and stability; outfitting; structural design; and preparation of preliminary design drawings. Two hours of lecture and one three-hour laboratory.
- NAME 4151G Small Craft Design** 3 cr.  
Prerequisite: credit or registration in NAME 3120. Case study of a 60-foot motor boat design, planing theory, trim, lift and drag in planing, use of standard series, hydrofoil vessel performance calculations, seakeeping, hull structure, hull materials, powering using supercavitating propellers or pump-jet.
- NAME 4155G Off-Shore Structure and Ship Design Project** 3 cr.  
Prerequisite: NAME 4150. Completion of the project started in the prerequisite course; the preliminary design of a ship or other marine system, or a component thereof, such as a hull, machinery, or an off-shore platform. Six hours of laboratory.
- NAME 4160G Ship Hydrodynamics II** 3 cr.  
Spring and fall semesters. Prerequisite: NAME 3150. A study of ship hydrodynamic problems in the areas of viscous fluid motion, ideal fluid flow, two-dimensional hydrofoils, three-dimensional foils as well as propeller theory.
- NAME 4162G Offshore Structures and Ship Dynamics II** 3 cr.  
Prerequisites: NAME 3150 3160 and Mathematics 2115. Linear oscillatory motion of floating bodies (Ships and Offshore Structures) due to water waves. Vibration theory, unsteady ideal flow theory, water wave theory, and linear ship motions theory. Prediction of ship platform motion in regular and irregular waves. Developments in hydroelasticity, maneuvering, and nonlinear ship motion.
- NAME 4171G Admiralty Law for Engineers** 2 cr.  
Prerequisites: consent of department and Senior standing in engineering or equivalent. An introduction to legal problems which confront engineers in marine design, construction, and operation. Applies to river and ocean transport and offshore production.
- NAME 4181G Materials for Marine Design** 3 cr.  
Prerequisite: CHEM 1017 and PHYS 1061. Elements of materials science and of the corrosion of metals; effects of marine environments on construction materials; and methods for selecting materials in the design of marine structures and marine equipment.
- NAME 4182G Advanced Topics in Ship Structures** 3 cr.  
Prerequisite: NAME 4120 or consent of department. Energy methods applied to elements of ship structure; principles of virtual work; plasticity: static collapse of beams and plates; application of plasticity to various ship structural topics: slamming ice strengthening collision protection transverse web frame; ultimate strength of ship girder; probabilistic aspects; distribution curves of capability and demand; combination of varying stresses of different frequencies - quasistatic and vibratory stresses; probabilistic design of the hull girder to an acceptable risk of failure.
- NAME 4723G Ocean and Coastal Engineering** 3 cr.  
(ENCE 4723, ENME 4723, and NAME 4723 are cross-listed). Prerequisite: ENME 3720 or ENCE 3310 or consent of the department. Elements of wind and wave generation and forecasting, tidal phenomena, hurricanes, storm surge, tsunamis, interaction of waves and wind with coastal and offshore structures, coastal and estuary processes. Design aspects of various topics are discussed and analyzed: e.g., offshore structures, spar buoys, underwater pipelines, oil production risers, coastal protection, mooring cables, vortex shedding, gas

flares, beach formation, harbor resonance, structure resonance, etc. A design project is required.

## Philosophy

- PHIL 1000 Introduction to Philosophy** 3 cr.  
An introductory study of basic philosophical concepts and problems.
- PHIL 1050 Reasoning** 3 cr.  
A study of the methods of understanding, analyzing, and criticizing arguments. The emphasis will be on increasing one's practical skills as a critical thinker. The arguments will be of the sort encountered in day-to-day life, e.g. those found in advertisements, newspaper editorials, and political campaigns.
- PHIL 1100 Introduction to Logic and the Scientific Method** 3 cr.  
Not open to students who place at a remedial level in mathematics until they have completed MATH 0107. An introduction to the theory of deductive reasoning.
- PHIL 1200 Social Ethics** 3 cr.  
A study of representative issues of contemporary social concern, such as capital punishment, civil disobedience, abortion, violence, racial and sexual discrimination. Emphasis will be on clarifying the ethical and other philosophical assumptions underlying the issues and on careful analysis of arguments.
- PHIL 2090 Philosophical Problems** 3 cr.  
A detailed investigation of a particular philosophical problem or problems, varying in content from semester to semester, with appropriate readings from classical and/or contemporary sources. May be repeated once for credit.
- PHIL 2093 Independent Work** 1 cr.  
Prerequisite: consent of department. Reading, conferences, and reports under the direction of a member of the philosophy faculty.
- PHIL 2094 Independent Work** 1 cr.  
Prerequisite: consent of department. Reading, conferences, and reports under the direction of a member of the philosophy faculty.
- PHIL 2095 Independent Work** 1 cr.  
Prerequisite: consent of department. Reading, conferences, and reports under the direction of a member of the philosophy faculty.
- PHIL 2102 Symbolic Logic** 3 cr.  
A study of truth-functional and first-order predicate logic. Open to all students and especially recommended for philosophy majors.
- PHIL 2201 Ethics** 3 cr.  
A study of concepts of right and wrong good and evil and their grounds.
- PHIL 2203 Philosophy and Feminism** 3 cr.  
A critical examination of traditional and contemporary conceptions of the moral, social, and metaphysical status of women. Special attention will be paid to the strengths and weaknesses of feminist theories concerning the philosophical nature and significance of gender and related concepts.
- PHIL 2205 Social and Political Philosophy** 3 cr.  
An introduction to theories and problems concerning the nature and justification, if any, of society, authority, and the state.
- PHIL 2207 Philosophy of Law** 3 cr.  
A critical examination, at an introductory level, of questions concerning the nature and foundations of law, the relation of law and morality and law and society, and of key concepts such as responsibility and punishment.
- PHIL 2222 Philosophy of Sex and Love** 3 cr.  
An investigation of the nature of sex and the nature of love, and of the conceptual relationship between them. The course draws on both classical and contemporary philosophy, and addresses social and ethical issues about sexual behavior and love.
- PHIL 2250 Philosophical Backgrounds of Literary Criticism** 3 cr.  
A critical review and analysis of the philosophical foundations of the more important theories of literary criticism from Plato to the present time.
- PHIL 2311 History of Ancient and Medieval Philosophy** 3 cr.  
A survey of philosophy from the early Greeks through the middle ages including such philosophers as the Pre-Socratics, Socrates, Plato, Aristotle, Augustine, and Thomas Aquinas.
- PHIL 2312 History of Modern Philosophy** 3 cr.  
A survey of philosophy since the beginning of the 17th century, including such philosophers as Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, and Hegel.
- PHIL 2314 American Philosophy** 3 cr.  
Readings in American philosophy and its sources, including such thinkers as Edwards, Jefferson, Emerson, Peirce, James, Royce, Dewey, Santayana, and Whitehead.
- PHIL 2411 Philosophy of Language** 3 cr.  
A critical survey and analysis of philosophical theories of meaning, reference, analyticity, synonymy, truth, and the relation of language to reality.
- PHIL 2413 Contemporary Philosophy** 3 cr.  
A survey of selected important philosophical developments since 1900.
- PHIL 2430 Methods of Science** 3 cr.  
An introductory study and survey of scientific methodology and concepts and, especially, of the nature of scientific reasoning: the manner in which science proposes, tests, confirms, and refutes theories and hypotheses about the natural world.
- PHIL 2450 Philosophy of Mind** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A critical survey and analysis of major problems in the philosophy of mind: personal identity, the existence of other minds, the relationship of mind and body.
- PHIL 2701 Religions of the East** 3 cr.  
A systematic analysis of the doctrine and practices of major religions outside the Judaeo-Christian tradition; such as Buddhism, Confucianism, Hinduism, Taoism, and others, including the influence of Islam. Particular attention will be given to the philosophical presuppositions of each religion.
- PHIL 2702 Religions of the West** 3 cr.  
A systematic analysis of the doctrine and practice of the "religions of Abraham": Judaism, Christianity, and Islam. Particular attention will be given to the philosophical presuppositions of each religion.
- PHIL 3001 Senior Honors Thesis** 3 cr.  
Prerequisite: consent of department and Director of the Honors Program. Directed research leading to the writing of a Senior Honors Thesis. This course must be repeated once in order to graduate With Honors in Philosophy. Credit for this course will not be counted toward the 30 hours of philosophy courses required for a major in philosophy.
- PHIL 3094 Directed Readings in Philosophy** 3 cr.  
Prerequisites: three hours of philosophy and consent of department. This course may be repeated once for credit.

- PHIL 3095 Special Topics in Philosophy** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. The course may be repeated once for credit. Topic varies.
- PHIL 3101 Advanced Logic** 3 cr.  
Prerequisite: PHIL 2102 or consent of department. A study of the semantics of formal languages, including proofs of the consistency and completeness of the propositional and first-order predicate logics. The course may also include discussion of such non-standard logics as multi-valued, modal, and deontic.
- PHIL 3201 Advanced Ethics** 3 cr.  
Prerequisite: PHIL 1200, 2201, 2205, or 2207, or consent of department. A systematic study of major positions, problems, and concepts in ethical theory, as represented in classical and contemporary works.
- PHIL 3232 Medical Ethics** 3 cr.  
A critical exploration of basic moral issues in medical practice and research, such as: genetic engineering, abortion, euthanasia, paternalism, truth-telling, confidentiality, informed consent, distribution of resources, and experimentation on human and nonhuman subjects.
- PHIL 3250 Philosophy of the Arts** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A critical inquiry into the nature of artistic production, performance, enjoyment, and evaluation. What is art? How does the concept apply to music, literature, painting, sculpture, architecture, dance, theatre? What is the "aesthetic" experience? These and other questions will be explored through discussion of relevant readings and examples.
- PHIL 3301 The Philosophy of Plato** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A close reading of the most famous and influential dialogues of the fourth-century B.C. Athenian Plato, the first great systematic thinker of Western philosophy and the creator of some of the basic concepts of Western culture.
- PHIL 3302 The Philosophy of Aristotle** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. Aristotle's ideas are examined through careful analysis of his main works with emphasis on his criticisms of the basic theories of his teacher, Plato, and Aristotle's influence on subsequent Western philosophy, literature, and science.
- PHIL 3331 Continental Rationalism and the 17th Century** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. Readings in Seventeenth Century thinkers such as Descartes, Spinoza, and Leibniz, whose speculations about the structure of existence helped form the theoretical framework of modern science. Their fundamental ideas about the nature and limits of human knowledge will be examined.
- PHIL 3332 British Empiricism and the Eighteenth Century** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A study of the doctrines and arguments of Locke, Berkeley, and Hume who exerted a formative influence on the development of philosophy, science, politics, and literature.
- PHIL 3333 The Philosophy of Immanuel Kant** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A study of the main doctrines and arguments of Immanuel Kant, 18th Century philosopher who revolutionized ethics, aesthetics, metaphysics, and epistemology.
- PHIL 3334 German Idealism and the Nineteenth Century** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A study of the most important ideas in continental philosophical speculation during the generations immediately after Kant; major figures include Hegel and his contemporaries, such as Fichte, Schelling, and Schopenhauer, whose metaphysical theories exerted considerable influence on the Romantic movement and on Marxism and other forms of socialism.
- PHIL 3400 Metaphysics** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. An examination of fundamental issues and problems in metaphysics, such as the nature of reality, universals, personal identity, persistence through change, space, and time.
- PHIL 3401 Theories of Knowledge** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A philosophical investigation of the meaning, varieties, limits, and grounds of human knowledge.
- PHIL 3415 Phenomenology and Continental Philosophy** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. An introduction to the doctrines, methods, and themes of phenomenology in the context of twentieth century continental philosophy, with attention to the growing impact of phenomenology on American philosophers, social scientists, and literary critics. This course will involve a careful study of the work of important figures in the phenomenological movement such as Husserl, Heidegger, Sartre, Merleau-Ponty, Schutz, and others.
- PHIL 3422 Analytic Philosophy** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. An examination of the methods and doctrines of the leading approach to philosophy in the twentieth century in the English-speaking world. Such thinkers as Wittgenstein, Russell, Moore, Carnap, Austin, and Quine will be discussed.
- PHIL 3430 Philosophy of the Natural Sciences** 3 cr.  
Prerequisites: three hours of philosophy and eight hours of science or consent of department. An examination in detail of the outstanding problems, positions, and achievements within contemporary philosophy of science. Attention will be given to issues arising from both the physical and the biological sciences.
- PHIL 3431 Philosophy of the Social Sciences** 3 cr.  
Prerequisites: three hours of philosophy and nine hours of social sciences or consent of department. A philosophical examination of theories, laws, explanations, and concepts in contemporary social sciences such as anthropology, psychology, sociology, economics, and psychoanalysis.
- PHIL 3450 Philosophical Psychology** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A critical inquiry into the philosophical aspects of concepts such as intentionality, thought, consciousness, motivation, emotion, and action.
- PHIL 3480 Philosophy of Religion** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A systematic study of such issues as implications of religious experience, attempted proof of the existence (or nonexistence) of God (or gods), the problem of divine foreknowledge, and the problem of evil.
- PHIL 3500 The Philosophy of Wittgenstein** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A close and critical examination of the works of Ludwig Wittgenstein, widely regarded as the most important philosopher of the 20th Century.
- PHIL 3511 Existentialism** 3 cr.  
Prerequisite: three hours of philosophy or consent of department. A careful examination of the views of Kierkegaard, Nietzsche, Heidegger, Sartre, and other thinkers associated with one of the 20th Century's most widely influential philosophies.

**PHIL 3595 Academic Year Abroad Special Topics in Philosophy** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.

## Physics

**PHYS 1001 Introduction to Physics** 3 cr.  
Introductory physics courses for non-science majors. May be taken without regard to order. PHYS 1001: Force, motion, properties of matter and heat. PHYS 1002: Sound, electricity, magnetism, light, nuclear physics and relativity. Does not constitute degree credit for any major in the College of Sciences.

**PHYS 1002 Introduction to Physics** 3 cr.  
Introductory physics courses for non-science majors. May be taken without regard to order. PHYS 1001: Force, motion, properties of matter and heat. PHYS 1002: Sound, electricity, magnetism, light, nuclear physics and relativity. Does not constitute degree credit for any major in the College of Sciences.

**PHYS 1003 Introductory Physics Laboratory** 1 cr.  
Laboratory to accompany PHYS 1001 and PHYS 1002 respectively. Prerequisite: credit or registration in PHYS 1001 and 1002.

**PHYS 1004 Introductory Physics Laboratory** 1 cr.  
Laboratory to accompany PHYS 1001 and PHYS1002 respectively. Prerequisite: credit or registration in PHYS 1001 and 1002.

**PHYS 1005 Introductory Astronomy** 3 cr.  
Introductory course in astronomy. PHYS 1005 treats naked-eye astronomy, the history and development of astronomy, and the comparative planetology of the solar system. PHYS 1006 introduces the astronomy of the Sun and stars, galaxies and cosmology. May be taken without regard to order.

**PHYS 1006 Introductory Astronomy** 3 cr.  
Introductory course in astronomy. PHYS 1005 treats naked-eye astronomy, the history and development of astronomy, and the comparative planetology of the solar system. PHYS 1006 introduces the astronomy of the Sun and stars, galaxies and cosmology. May be taken without regard to order.

**PHYS 1007 Introductory Astronomy Laboratory** 1 cr.  
Prerequisite: credit or registration in PHYS 1005 and 1006 respectively. A two-hour night laboratory to accompany PHYS 1005 and 1006.

**PHYS 1008 Introductory Astronomy Laboratory** 1 cr.  
Prerequisite: credit or registration in PHYS 1005 and 1006 respectively. A two-hour night time laboratory to accompany PHYS 1005 and 1006.

**PHYS 1010 Physics of Music** 3 cr.  
Prerequisite: high school algebra. The physical and acoustical background of music, the reception and hearing of musical sound, the acoustics of rooms, the production of musical sounds and musical instruments.

**PHYS 1011 Physics of Music Laboratory** 1 cr.  
Prerequisite: credit or registration in PHYS 1010. A two-hour laboratory to accompany PHYS 1010.

**PHYS 1020 Energy and Environmental Physics** 3 cr.  
Introduction to energy, energy supply, and demand, exponential growth, electric energy, basic thermodynamic limitations, fossil fuels, nuclear power, future energy sources, transportation, pollution, resources, recycling.

**PHYS 1030 Physics An Overview** 3 cr.  
A descriptive introduction to the basic concepts of the major branches of Physics and their application in modern society.

Examples will be taken from current physics-based research in a variety of fields.

**PHYS 1031 General Physics** 3 cr.  
Offered each semester. Prerequisite: credit in MATH 1112 or MATH 1114. A study of mechanics, heat, sound, light, electricity and magnetism and modern physics. Credit cannot be earned for both 1031 and 1061 nor for 1032 and 1062.

**PHYS 1032 General Physics** 3 cr.  
Offered each semester. Prerequisite: credit in MATH 1112 or MATH 1114. A study of mechanics, heat, sound, light, electricity and magnetism and modern physics. Credit cannot be earned for both 1031 and 1061 nor for 1032 and 1062.

**PHYS 1033 General Physics Laboratory** 1 cr.  
Offered each semester. Prerequisite: credit or registration in PHYS 1031 and 1032. A two-hour laboratory to accompany PHYS 1031 and 1032. Credit cannot be earned for both 1033 and 1063 nor for both 1034 and 1065.

**PHYS 1034 General Physics Laboratory** 1 cr.  
Offered each semester. Prerequisite: credit or registration in PHYS 1031 and 1032. A two-hour laboratory to accompany PHYS 1031 and 1032. Credit cannot be earned for both 1033 and 1063 nor for both 1034 and 1065.

**PHYS 2005 Intermediate Astronomy: Cosmology** 3 cr.  
Prerequisite: PHYS 1005 1006 and MATH 1111. An intermediate level astronomy course on the nature, origin, evolution, and probable fate of the universe, including the Big Bang theory and modern controversies in cosmology.

**PHYS 3001 Principles of Bio-Medical Instrumentation** 2 cr.  
Prerequisites: Physics 1032 and 1034. An introduction to the physical principles necessary for understanding the operation of equipment used by medical technicians and certain biology researchers. One hour of lecture and two hours of laboratory each week.

**PHYS 3198 Undergraduate Seminar** 1 cr.  
Offered each semester. A group comprised of representatives of the physics faculty and undergraduate physics majors which meets at regular intervals during the semester to discuss selected topics in physics. Physics majors must formally register and present an approved paper in order to satisfy credit requirements. May be repeated for credit.

**PHYS 3261 Field Methods in Geophysics** 6 cr.  
(PHYS 3261 and GEOP 3261 are cross-listed) Prerequisites: PHYS 2064 and consent of instructor. Basic introduction to the application of geophysical field techniques. Includes collecting, processing, and interpreting gravity, magnetic, and seismic data. Practical experience in the conduct of geophysical surveys, operation of equipment, data reduction, and simple interpretation. Preparation of geophysical reports in the style normally used for published papers. Thirty-five hours of classroom work and field measurements per week during the summer session.

**PHYS 3301 Intermediate Mechanics** 3 cr.  
Prerequisites: PHYS 1062 and MATH 2115. Application of the fundamental laws of mechanics to particles and rigid bodies.

**PHYS 4004 Contemporary Physics** 3 cr.  
Prerequisite: PHYS 1032 or consent of department. A survey of contemporary topics which may include nuclear power, solar energy, Einstein's relativity and cosmology, energy and matter in the quantum picture. (Physics majors can not use this course as a physics elective.)

- PHYS 4091 Special Topics in Physics and Physical Science for Teachers** 1-6 cr.  
Prerequisite: consent of department. The content and format of this course may be varied from semester to semester. The topics covered will generally relate to background material (rather than methodology) which is in the areas of physics or physical science and of particular interest to precollege teachers. Amount of credit to be stated at time of registration; may be repeated for no more than a total of six hours credit. This course may not be used for degree credit by students in the College of Sciences except those enrolled in the M.A. in science teaching program.
- PHYS 4150 Interfacing Microprocessors with Scientific Apparatus** 3 cr.  
Prerequisite: Physics 1034 or 1065 or consent of department. An introduction to digital circuits and microprocessors with emphasis on interfacing microprocessors with scientific apparatus for experiment control, data acquisition, and storage. One-and-one-half hours of lecture and two-and-one-half hours of laboratory per week.
- PHYS 4160 Advanced Laboratory** 3 cr.  
Prerequisite: Physics 4150 or consent of department. Four hours of laboratory and one hour of lecture each week. Selected experiments in several branches of physics with special emphasis on the control of selected experiments by microprocessors. Fundamentals of AC and DC circuits.
- PHYS 4194 Senior Honors Thesis** 1-6 cr.  
Prerequisite: consent of director of the Honors Program. A candidate for a degree with honors in Physics must complete a total of six credit hours culminating in the presentation of an acceptable thesis and successful defense of the thesis during an oral examination to be conducted by the student's honors committee. (See requirements for graduation with honors.) The six credit hours may be taken in any combination, but only in conjunction with supervised work on the thesis. Registration for this course requires the approval of the Director of the Honors Program. Interim grades will be S or U. This course may not be taken for graduate credit.
- PHYS 4195 Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- PHYS 4196 Special Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- PHYS 4197 Special Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- PHYS 4198 Special Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- PHYS 4201 Introduction to Mathematical Physics** 3 cr.  
Prerequisite: consent of department. An introduction to the mathematical treatment of selected physical problems.
- PHYS 4202 Introduction to Mathematical Physics** 3 cr.  
Prerequisite: consent of department. An introduction to the mathematical treatment of selected physical problems.
- PHYS 4203 Introduction to Applied Group Theory** 3 cr.  
Prerequisite: PHYS 4401 or consent of department. The effects of symmetry in physical laws with examples from atomic, molecular, and solid state physics.
- PHYS 4205 Physical Applications of the Fourier Transform** 3 cr.  
Prerequisites: Mathematics 2115 and Physics 1062 or consent of department. Physical applications of the Fourier transform and series, convolution, and basic theorems; sampling and data treatment; and introduction to Fourier methods in geophysics and optics.
- PHYS 4211 Introduction to Computational Physics** 3 cr.  
Prerequisites: credit in a computer programming course and PHYS 4501, or consent of department. An introduction to the computational treatment of physics problems in areas such as electromagnetic phenomena, acoustic wave propagation, scattering, atomic structure, and astrophysics.
- PHYS 4302 Advanced Mechanics** 3 cr.  
Prerequisite: PHYS 3301 or consent of department. Special relativity; variational techniques; Lagrangian and Hamiltonian formulations of classical mechanics.
- PHYS 4322 Introduction to Acoustics** 3 cr.  
Prerequisites: Physics 2064 and Mathematics 2221, or consent of department. Fundamental principles of acoustics, emphasizing the physical concepts, derivations, and solutions of acoustic wave equations in bounded and unbounded fluids and solids. Reflection, refraction, and transmission; radiation characteristics of vibrating bodies. Acoustic wave guide theory, geometrical acoustics, and ray theory. Selected topics as time permits.
- PHYS 4381 Applied Seismic Data Acquisition and Processing** 3 cr.  
(PHYS 4381 and GEOP 4381 are cross-listed) Prerequisites: PHYS 4205, GEOP 4810 and MATH 2221 or consent of department. Basic acoustics and ray tracing; seismic data acquisition; CDP; noise analyses and arrays; physics of acoustic sources, measuring and recording instruments; demultiplexing; NMO and velocity analysis; statics; and introduction to deconvolution, filtering, and migration. Use of fundamental seismic data processing computer programs, graphics, and displays of seismic data; seismic data processing of field data. Two hours of lecture and two hours of computer laboratory per week.
- PHYS 4401 Introduction to Quantum Mechanics** 3 cr.  
Prerequisites: PHYS 2064 and either MATH 2115 or MATH 2221 or consent of department. An introduction to the basic concepts in quantum mechanics.
- PHYS 4402 Quantum Physics of Atoms, Solids, and Nuclei** 3 cr.  
Prerequisites: PHYS 4401 or consent of department. Quantum theory of the electronic structure of atoms, diatomic molecules, solids, and nuclei. Topics include perturbation theory applied to multi-electron atoms, L-S coupling, molecular orbitals, band theory of solids, and shell model of nuclei.
- PHYS 4501 Electricity and Magnetism** 3 cr.  
Prerequisites: PHYS 1062 and MATH 2115. Fundamentals of electricity and magnetism.

- PHYS 4503 Electricity and Magnetism** 3 cr.  
Prerequisite: PHYS 4501. Time-dependent electric and magnetic fields. Solutions of Maxwell's equations and electromagnetic radiation.
- PHYS 4505 Introduction to Plasma Physics** 3 cr.  
Prerequisites: Physics 4501 and Mathematics 2221 or consent of department. An introduction to plasma physics covering particle orbit theory, hydromagnetics, shock waves, and plasma radiation.
- PHYS 4507 Gravity and Magnetics** 3 cr.  
(GEOP 4507 and PHYS 4507 are cross-listed) Prerequisites: GEOP 4810, PHYS 3301 or 4501, MATH 2221, or consent of department. Fundamentals of scalar potentials and analysis of vector fields as applied to geophysical problems in gravity and magnetism. Analytic properties of the earth's gravitational and magnetic fields in space and time. Modeling and interpretation of gravity and magnetic anomalies.
- PHYS 4510 Electronic Instrumentation for Scientists** 3 cr.  
Prerequisite: Physics 4150 or consent of department. The principles of electronic instrumentation with emphasis placed on semiconductor devices and electronic instruments which find extensive applications in laboratories in physics, biology, chemistry, earth sciences, and psychology. Specific topics covered will include the following: semiconductor diodes and transistors, basic transistor amplifier circuits, current and voltage amplifiers, signal generators, operational amplifiers, analog-to-digital and digital-to-analog converters, pulse generators and counters, radiation transducers and integrated circuits.
- PHYS 4603 Introduction to Low Temperature Physics** 3 cr.  
Prerequisite: PHYS 4601 or consent of department. A study of the macroscopic theory of superfluid helium, methods of producing low temperatures, and such topics as magnetic effects, adiabatic demagnetization and superconductivity.
- PHYS 4801 Nuclear and Reactor Physics** 3 cr.  
Prerequisites: PHYS 2064 and consent of department. A survey of nuclear forces and models, radioactivity, nuclear reactions, apparatus for detection of particles and radiation of nuclear origin (scintillation counters, solid-state detectors, coincidence electronics, etc.), fission and fusion reactors, heat exchangers, radiation damage, reactor shielding, nuclear fuel fabrication and reprocessing, options for disposal of nuclear wastes.
- PHYS 6005 Laboratory Techniques in Physics for Teachers I & II** 3 cr.  
Prerequisite: PHYS 4004 or consent of department. A course to aid science teachers to deepen their knowledge of fundamental physics by designing and carrying out demonstrations and laboratory techniques for presenting phenomena. The first semester will deal primarily with mechanics, astronomy, and thermal physics. The second semester will deal primarily with light, electromagnetism, modern physics, and energy sources. (Need not be taken in sequence.) Two hours of lecture and two hours of laboratory.
- PHYS 6006 Laboratory Techniques in Physics for Teachers I & II** 3 cr.  
Prerequisite: PHYS 4004 or consent of department. A course to aid science teachers to deepen their knowledge of fundamental physics by designing and carrying out demonstrations and laboratory techniques for presenting phenomena. The first semester will deal primarily with mechanics, astronomy, and thermal physics. The second semester will deal primarily with light, electromagnetism, modern physics, and energy sources. (Need not be taken in sequence.) Two hours of lecture and two hours of laboratory.
- PHYS 6191 Selected Topics in Physics-Mathematical** 1-6 cr.  
The content of this course will be varied from semester to semester. The topics covered are divided into the following categories: (6191) Mathematical Physics, (6192) Atomic and Molecular Physics, (6193) Nuclear and Elementary Particle Physics, (6194) Condensed Matter and Materials Physics, and (6195) Geophysics. The amount of credit a particular course carries will be stated at registration. A maximum of six credit hours may be accumulated by the student in any one category. No more than six hours total will be allowed toward an M.S. degree. Section number will correspond with credit to be earned.
- PHYS 6192 Selected Topics in Physics-Atomic & Molecular** 1-6 cr.  
The content of this course will be varied from semester to semester. The topics covered are divided into the following categories: (6191) Mathematical Physics, (6192) Atomic and Molecular Physics, (6193) Nuclear and Elementary Particle Physics, (6194) Condensed Matter and Materials Physics, and (6195) Geophysics. The amount of credit a particular course carries will be stated at registration. A maximum of six credit hours may be accumulated by the student in any one category. No more than six hours total will be allowed toward an M.S. degree. Section number will correspond with credit to be earned.
- PHYS 6193 Selected Topics in Physics-Nuclear & Elementary Particle Physics** 1-6 cr.  
The content of this course will be varied from semester to semester. The topics covered are divided into the following categories: (6191) Mathematical Physics, (6192) Atomic and Molecular Physics, (6193) Nuclear and Elementary Particle Physics, (6194) Condensed Matter and Materials Physics, and (6195) Geophysics. The amount of credit a particular course carries will be stated at registration. A maximum of six credit hours may be accumulated by the student in any one category. No more than six hours total will be allowed toward an M.S. degree. Section number will correspond with credit to be earned.
- PHYS 6194 Selected Topics in Physics-Solid State** 1-6 cr.  
The content of this course will be varied from semester to semester. The topics covered are divided into the following categories: (6191) Mathematical Physics, (6192) Atomic and Molecular Physics, (6193) Nuclear and Elementary Particle Physics, (6194) Condensed Matter and Materials Physics, and (6195) Geophysics. The amount of credit a particular course carries will be stated at registration. A maximum of six credit hours may be accumulated by the student in any one category. No more than six hours total will be allowed toward an M.S. degree. Section number will correspond with credit to be earned.
- PHYS 6195 Selected Topics in Physics-Geophysics** 1-6 cr.  
The content of this course will be varied from semester to semester. The topics covered are divided into the following categories: (6191) Mathematical Physics, (6192) Atomic and Molecular Physics, (6193) Nuclear and Elementary Particle Physics, (6194) Condensed Matter and Materials Physics, and (6195) Geophysics. The amount of credit a particular course carries will be stated at registration. A maximum of six credit hours may be accumulated by the student in any one category. No more than six hours total will be allowed toward an M.S. degree. Section number will correspond with credit to be earned.
- PHYS 6198 Seminar** 1 cr.  
This course is offered each semester and meets weekly. May be repeated for credit.

- PHYS 6205 Digital Filtering and Image Processing** 3 cr.  
Prerequisite: PHYS 4205 or consent of department. The discrete Fourier transform and the fast Fourier transform in physical applications; noise characteristics and techniques of noise removal; one-dimensional image enhancement and restoration; two-dimensional image processing; and applications to seismic data, pictures, and other physical data.
- PHYS 6206 Image Restoration and Enhancement** 3 cr.  
Prerequisite: PHYS 6205 or consent of department. Restoration and enhancement of one- and two-dimensional physical data by noise removal, deconvolution, and other techniques of digital filtering; the Wiener filter, maximum entropy, and maximum likelihood; iterative techniques; spectral windows; and filters for seismic data and images.
- PHYS 6207 Digital Filtering and Spectral Analysis I** 3 cr.  
Prerequisites: PHYS 6206 and a background in matrix algebra (such as MATH 251I or PHYS 4201) or consent of department. Brief review of transform and random process theory, review of matrix algebra, classical spectral estimation, parametric models for random processes, autoregressive spectrum properties and estimation ARMA spectral estimation, Prony method, minimum variance spectral estimation, eigenvector approaches, multichannel and two-dimensional spectral estimation.
- PHYS 6208 Digital Filtering and Spectral Analysis II** 3 cr.  
Prerequisites: PHYS 6206 and a background in matrix algebra (such as MATH 251I or PHYS 4201) or consent of department. Brief review of transform and random process theory, review of matrix algebra, classical spectral estimation, parametric models for random processes, autoregressive spectrum properties and estimation, ARMA spectral estimation, Prony method, minimum variance spectral estimation, eigenvector approaches, multichannel and two-dimensional spectral estimation.
- PHYS 6301 Classical Mechanics** 3 cr.  
Prerequisite: Physics 3301 or consent of department. Variational formulation of mechanics due to Lagrange and Hamilton. Kinematics and dynamics of particles and rigid bodies, classical fields, and selected topics.
- PHYS 6302 Wave Propagation** 3 cr.  
Prerequisites: PHYS 4322 and 4201 or consent of department. Wave propagation in continuous media with emphasis on geophysical applications, normal mode theory, reflection and refraction, diffraction, dispersion.
- PHYS 6321 Acoustics I** 3 cr.  
Prerequisites: PHYS 4201 and 4322 or consent of department. Wave theory of sound: reflection, transmission, and excitation of plane waves; sources of acoustic radiation, geometrical acoustics, and ray theory; scattering and diffraction; acoustic waveguides and normal mode propagation; computational techniques; dissipative processes and nonlinear effects; selected topics of interest as time permits.
- PHYS 6322 Acoustics II** 3 cr.  
Prerequisites: Physics 4201 and 4322 or consent of department. Wave theory of sound: reflection, transmission, and excitation of plane waves; sources of acoustic radiation, geometrical acoustics, and ray theory; scattering and diffraction; acoustic waveguides and normal mode propagation; computational techniques; dissipative processes and nonlinear effects; selected topics of interest as time permits.
- PHYS 6325 Underwater Acoustic System Analysis** 3 cr.  
Prerequisites: Physics 4322 and Physics 4205 or consent of department. Underwater acoustics, Fourier methods, noise, beamforming, target characteristics, statistical basis for performance analysis, examples of acoustic system analysis. Three hours of lecture per week.
- PHYS 6331 Principles of Ocean Physics I** 3 cr.  
Prerequisites: PHYS 4501 and PHYS 3301 or Mechanical Engineering 2750 or consent of department. First Semester: an introduction to physical oceanography, including forces, hydrodynamics, thermodynamics, geophysical fluid dynamics, waves, tides, and currents. Second Semester: a study of the physics of the ocean, emphasizing underwater acoustics, electromagnetics in the ocean, and optics of the sea.
- PHYS 6332 Principles of Ocean Physics II** 3 cr.  
Prerequisites: PHYS 4501 and PHYS 3301 or Mechanical Engineering 2750 or consent of department. First Semester: an introduction to physical oceanography, including forces, hydrodynamics, thermodynamics, geophysical fluid dynamics, waves, tides, and currents. Second Semester: a study of the physics of the ocean, emphasizing underwater acoustics, electromagnetics in the ocean, and optics of the sea.
- PHYS 6381 Advanced Seismic Techniques** 3 cr.  
Prerequisites: Physics/Geophysics 4381 or consent of department. Velocity analysis, deconvolution and filtering, tau-p slant stacking, velocity filters, 3-D techniques, vertical seismic profiles, migration, forward modeling and synthetics, inverse theories and modeling, interpretation, use and development of seismic data processing computer programs, including graphics and displays. Two hours of lecture and two hours of computer laboratory per week.
- PHYS 6401 Quantum Mechanics I** 3 cr.  
Prerequisites: advanced calculus and consent of department. The conceptual basis of quantum mechanics and its relation to classical mechanics. Quantum states and energies are determined for simple systems with emphasis on the use of symmetries and other general features of the systems.
- PHYS 6402 Quantum Mechanics II** 3 cr.  
Prerequisite: PHYS 6401. Application of the quantum mechanics to problems in atomic, solid state, and nuclear physics, with an introduction to approximation methods.
- PHYS 6501 Electromagnetic Theory I** 3 cr.  
Prerequisite: PHYS 4201 and 6301 or consent of department. Electrostatics, magnetostatics, and Maxwell's equations.
- PHYS 6502 Electromagnetic Theory II** 3 cr.  
Prerequisite: PHYS 6501 or consent of department. Electromagnetic radiation, special relativity, and diffraction theory.
- PHYS 6621 Statistical Mechanics** 3 cr.  
Offered as needed. A survey of the principles of classical and quantum statistics with application to special problems.
- PHYS 6701 Atomic Theory** 3 cr.  
Prerequisite: PHYS 6401 or consent of department. Quantum theory of atomic structure and spectra, theory of radiation, selection rules and quantum theory of elastic and inelastic atomic collisions.
- PHYS 6721 Molecular Structure** 3 cr.  
Prerequisite: PHYS 6401 or consent of department. Classification of molecular spectra, rotation, and vibration of the diatomic molecule, finer details of infrared and Raman spectra. Rotation and vibration of polyatomic molecules and electronic states.
- PHYS 7000 Thesis Research** 1-9 cr.  
Offered each semester. To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- PHYS 7025 Research Methods in Physics** 1-9 cr.  
May be repeated for credit. Maximum credit of six hours for an M.S. degree. A study of experimental and theoretical research methods

the design and execution of experiments and their analyses. Section number will correspond with credit to be earned.

- PHYS 7040 Examination or Thesis Only** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- PHYS 7050 Dissertation Research** 1-12 cr.  
To be repeated for credit until dissertation is accepted.
- PHYS 4004G Contemporary Physics** 3 cr.  
Prerequisite: PHYS 1032 or consent of department. A survey of contemporary topics which may include nuclear power, solar energy, Einstein's relativity and cosmology, energy and matter in the quantum picture. (Physics majors can not use this course as a physics elective.)
- PHYS 4091G Special Topics in Physics and Physical Science for Teachers** 1-6 cr.  
Prerequisite: consent of department. The content and format of this course may be varied from semester to semester. The topics covered will generally relate to background material (rather than methodology) which is in the areas of physics or physical science and of particular interest to precollege teachers. Amount of credit to be stated at time of registration; may be repeated for no more than a total of six hours credit. This course may not be used for degree credit by students in the College of Sciences except those enrolled in the M.A. in science teaching program.
- PHYS 4150G Interfacing Microprocessors with Scientific Apparatus** 3 cr.  
Prerequisite: Physics 1034 or 1065 or consent of department. An introduction to digital circuits and microprocessors with emphasis on interfacing microprocessors with scientific apparatus for experiment control, data acquisition, and storage. One-and-one-half hours of lecture and two-and-one-half hours of laboratory per week.
- PHYS 4160G Advanced Laboratory** 3 cr.  
Prerequisite: Physics 4150 or consent of department. Four hours of laboratory and one hour of lecture each week. Selected experiments in several branches of physics with special emphasis on the control of selected experiments by microprocessors. Fundamentals of AC and DC circuits.
- PHYS 4194G Senior Honors Thesis** 1-6 cr.  
Prerequisite: consent of director of the Honors Program. A candidate for a degree with honors in Physics must complete a total of six credit hours culminating in the presentation of an acceptable thesis and successful defense of the thesis during an oral examination to be conducted by the student's honors committee. (See requirements for graduation with honors.) The six credit hours may be taken in any combination, but only in conjunction with supervised work on the thesis. Registration for this course requires the approval of the Director of the Honors Program. Interim grades will be S or U. This course may not be taken for graduate credit.
- PHYS 4195G Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.

- PHYS 4196G Special Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- PHYS 4197G Special Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- PHYS 4198G Special Topics in Physics** 1-3 cr.  
Prerequisite: consent of department. The content of this course will be varied from semester to semester. The topics will be divided into the following categories: (4195) classical, (4196) modern, (4197) current topics, (4198) geophysics, and no more than a total of six semester hours credit will be allowed toward a B.S. degree. Section number will correspond with credit to be earned.
- PHYS 4201G Introduction to Mathematical Physics** 3 cr.  
Prerequisite: consent of department. An introduction to the mathematical treatment of selected physical problems.
- PHYS 4202G Introduction to Mathematical Physics** 3 cr.  
Prerequisite: consent of department. An introduction to the mathematical treatment of selected physical problems.
- PHYS 4203G Introduction to Applied Group Theory** 3 cr.  
Prerequisite: PHYS 4401 or consent of department. The effects of symmetry in physical laws with examples from atomic, molecular, and solid state physics.
- PHYS 4205G Physical Applications of the Fourier Transform** 3 cr.  
Prerequisites: Mathematics 2115 and Physics 1062 or consent of department. Physical applications of the Fourier transform and series, convolution, and basic theorems; sampling and data treatment; and introduction to Fourier methods in geophysics and optics.
- PHYS 4211G Introduction to Computational Physics** 3 cr.  
Prerequisites: credit in a computer programming course and PHYS 4501, or consent of department. An introduction to the computational treatment of physics problems in areas such as electromagnetic phenomena, acoustic wave propagation, scattering, atomic structure, and astrophysics.
- PHYS 4302G Advanced Mechanics** 3 cr.  
Prerequisite: PHYS 3301 or consent of department. Special relativity; variational techniques; Lagrangian and Hamiltonian formulations of classical mechanics.
- PHYS 4322G Introduction to Acoustics** 3 cr.  
Prerequisites: Physics 2064 and Mathematics 2221, or consent of department. Fundamental principles of acoustics, emphasizing the physical concepts, derivations, and solutions of acoustic wave equations in bounded and unbounded fluids and solids. Reflection, refraction, and transmission; radiation characteristics of vibrating bodies. Acoustic wave guide theory, geometrical acoustics, and ray theory. Selected topics as time permits.
- PHYS 4381G Applied Seismic Data Acquisition and Processing** 3 cr.  
(PHYS 4381 and GEOP 4381 are cross-listed) Prerequisites: PHYS 4205, GEOP 4810 and MATH 2221 or consent of department. Basic acoustics and ray tracing; seismic data acquisition; CDP; noise analyses and arrays; physics of acoustic sources, measuring and

recording instruments; demultiplexing; NMO and velocity analysis; statics; and introduction to deconvolution, filtering, and migration. Use of fundamental seismic data processing computer programs, graphics, and displays of seismic data; seismic data processing of field data. Two hours of lecture and two hours of computer laboratory per week.

**PHYS 4401G Introduction to Quantum Mechanics** 3 cr.  
Prerequisites: PHYS 2064 and either MATH 2115 or MATH 2221 or consent of department. An introduction to the basic concepts in quantum mechanics.

**PHYS 4402G Quantum Physics of Atoms, Solids, and Nuclei** 3 cr.  
Prerequisites: PHYS 4401 or consent of department. Quantum theory of the electronic structure of atoms, diatomic molecules, solids, and nuclei. Topics include perturbation theory applied to multi-electron atoms, L-S coupling, molecular orbitals, band theory of solids, and shell model of nuclei.

**PHYS 4501G Electricity and Magnetism** 3 cr.  
Prerequisites: PHYS 1062 and MATH 2115. Fundamentals of electricity and magnetism.

**PHYS 4503G Electricity and Magnetism** 3 cr.  
Prerequisite: PHYS 4501. Time-dependent electric and magnetic fields. Solutions of Maxwell's equations and electromagnetic radiation.

**PHYS 4505G Introduction to Plasma Physics** 3 cr.  
Prerequisites: Physics 4501 and Mathematics 2221 or consent of department. An introduction to plasma physics covering particle orbit theory, hydromagnetics, shock waves, and plasma radiation.

**PHYS 4507G Gravity and Magnetism** 3 cr.  
(GEO 4507 and PHYS 4507 are cross-listed) Prerequisites: GEO 4810, PHYS 3301 or 4501, MATH 2221, or consent of department. Fundamentals of scalar potentials and analysis of vector fields as applied to geophysical problems in gravity and magnetism. Analytic properties of the earth's gravitational and magnetic fields in space and time. Modeling and interpretation of gravity and magnetic anomalies.

**PHYS 4510G Electronic Instrumentation for Scientists** 3 cr.  
Prerequisite: Physics 4150 or consent of department. The principles of electronic instrumentation with emphasis placed on semiconductor devices and electronic instruments which find extensive applications in laboratories in physics, biology, chemistry, earth sciences, and psychology. Specific topics covered will include the following: semiconductor diodes and transistors, basic transistor amplifier circuits, current and voltage amplifiers, signal generators, operational amplifiers, analog-to-digital and digital-to-analog converters, pulse generators and counters, radiation transducers and integrated circuits.

**PHYS 4603G Introduction to Low Temperature Physics** 3 cr.  
Prerequisite: PHYS 4601 or consent of department. A study of the macroscopic theory of superfluid helium, methods of producing low temperatures, and such topics as magnetic effects, adiabatic demagnetization and superconductivity.

**PHYS 4801G Nuclear and Reactor Physics** 3 cr.  
Prerequisites: PHYS 2064 and consent of department. A survey of nuclear forces and models, radioactivity, nuclear reactions, apparatus for detection of particles and radiation of nuclear origin (scintillation counters, solid-state detectors, coincidence electronics, etc.), fission and fusion reactors, heat exchangers, radiation damage, reactor shielding, nuclear fuel fabrication and reprocessing, options for disposal of nuclear wastes.

## Political Science

**POLI 1000 Fundamental Issues of Politics** 3 cr.  
Offered each semester. An introduction to the central questions at issue in politics with special emphasis on their significance for the American scene.

**POLI 1010 Contemporary Issues of Politics** 3 cr.  
Prerequisite: Political Science 1000 or consent of department. An examination of the current issues and problems of national and international politics.

**POLI 2151 American Government** 3 cr.  
Offered each semester. A survey of the principles, structure, processes, and functions of American government with emphasis on the national government.

**POLI 2156 Government of Louisiana** 3 cr.  
A general survey of state and local government and politics in Louisiana.

**POLI 2157 Public Policy** 3 cr.  
A general survey of public policies in the United States and other political systems emphasizing their effect on domestic politics.

**POLI 2158 Issues in Black Politics** 3 cr.  
A survey of black political movements in the United States with emphasis on contemporary problems. Special attention will be given to black ideologies, styles of political participation, and leadership development.

**POLI 2200 Judicial Process** 3 cr.  
Prerequisite: Political Science 2151 or consent of department. A study of legal systems with emphasis upon the role of American courts and judges in administering justice and making law.

**POLI 2450 Current Issues in Criminal Justice** 3 cr.  
A survey of the criminal justice system from arrest to appeal with emphasis on major problems and dilemmas, such as capital punishment, plea bargaining, search and seizure, legalization of drugs, and other contemporary issues. Special attention will be given to court decisions defining the rights of defendants and the practical realities of criminal law in Louisiana.

**POLI 2500 Introduction to Political Theory** 3 cr.  
A survey of theories of the nature of government and the relationships between the individual and the political order, drawing upon contemporary and classical sources.

**POLI 2600 Introduction to Comparative Government** 3 cr.  
Prerequisite: 30 credit hours or consent of department. Offered each semester. A survey of the political institutions of the major democratic powers of Europe and of Russia.

**POLI 2900 Methods of Political Research** 3 cr.  
Offered each semester. Prerequisite: completion of Political Science 2151. A survey of the principal methods of political research, including conceptualization and hypothesis testing. The course will introduce computing on personal computers and mainframes as a tool of contemporary political research; students will be familiarized with operating systems, text editing, and data analysis.

**POLI 3595 Academic Year Abroad: Special Topics in Political Science** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.

**POLI 3900 Polimetrics** 3 cr.  
Prerequisites: POLI 2900 and MATH 1115 or 1125 and 1140. Introduction to the application and utility of scientific and mathematical methodology in the analysis of political phenomena. Special attention is given to the development of concepts generalizations and

- explanatory themes within political science as well as the use of various mathematical measurements of political phenomena and behavior.
- POLI 4100 Politics of Budgeting** 3 cr.  
Prerequisite: POLI 2151 or consent of department. Course focuses on the content and process of budgeting in the U.S. government with attention to the importance of budgeting for public policy, the roles and strategies available to the various participants, and reforms that have been proposed.
- POLI 4101 Introduction to Public Administration** 3 cr.  
Prerequisite: POLI 2151 or consent of department. A study of the problems and methods of administering public policies with special emphasis on problems of organization and control of government power
- POLI 4102 The Administrative Process** 3 cr.  
A study of systems and techniques of modern American public management. The course includes a study of underlying concepts. However, the main emphasis is upon development of skills for future administrators. A field problem is usually included.
- POLI 4120 Organizational Behavior** 3 cr.  
An analysis of research findings related to human behavior in complex organizations, especially public administrative bodies.
- POLI 4170 The Politics of Public Policy** 3 cr.  
An examination of the American public policy process and policy theory, covering the major concepts, controversies, and states of policy making as well as policy content.
- POLI 4180 Organization and the Political System** 3 cr.  
A systematic examination of theory and practice in the relationship between organizations and larger political systems in the modern world.
- POLI 4210 Politics of Metropolitan Areas** 3 cr.  
An examination of the growth and problems of metropolitan areas, with special emphasis on the political fragmentation and integration of metropolitan governments.
- POLI 4230 Policy Making and the Urban Environment** 3 cr.  
Prerequisite: POLI 2151 or consent of department. A study of the problems of policy-making and administration relative to improving the quality of the urban environment.
- POLI 4310 Processes of State Government** 3 cr.  
Prerequisite: POLI 2151 or consent of department. A study of structure, functions, and problems of state governments in the United States. Includes the actual observation of government in action.
- POLI 4410 American Constitutional Law** 3 cr.  
Prerequisite: POLI 2200 or consent of department. A study of the law of the Constitution and the place of the Supreme Court in the American political system; critical examination of separation of powers, judicial review, federalism and federal powers.
- POLI 4420 The American Constitution and Civil Liberties** 3 cr.  
Prerequisite: POLI 2151 or consent of department. An examination of the political relevance of major federal constitutional limitations, property rights, First Amendment freedoms, the rights of criminal defendants and ethnic minorities.
- POLI 4440 Urban Judicial Process** 3 cr.  
Prerequisite: POLI 2200 or consent of department. A study of judicial processes involved in metropolitan development and in the application of environmental controls to urban areas.
- POLI 4510 History of Western Political Thought: Plato Through Machiavelli** 3 cr.  
A survey of development of Western political thought from its Greek origins through Machiavelli.
- POLI 4511 History of Western Political Thought: Reformers Through Marx** 3 cr.  
Modern Western political thought from the Protestant Reformation through Marx.
- POLI 4530 American Political Theory** 3 cr.  
A study of major American political ideas, including American conceptions of liberty, equality, and the role of government.
- POLI 4550 Communist Political Thought** 3 cr.  
A study of the historical origins of communism in western and eastern Europe: an analysis of the classics from Marx to the present with emphasis on communist theory of state and law, democracy and federalism.
- POLI 4570 Contemporary Political Theory** 3 cr.  
Examines selected fundamental problems by exploring the works of important representative theorists.
- POLI 4621 Public Opinion** 3 cr.  
An analysis of contemporary public opinion and communication as aspects of the political process, with emphasis upon opinion formation, manipulation, and the mass media.
- POLI 4630 The American Presidency** 3 cr.  
Examines the constitutional and political development of the institutions, the selection process, executive decision-making, and relations with those inside and outside of government in making public policy.
- POLI 4653 Political Socialization of American Blacks** 3 cr.  
A study of the processes and agents of political socialization. Although the mainstream American experience will be emphasized, socialization within subcultures in the United States and socialization to other systems will be included.
- POLI 4657 Black Political Thought** 3 cr.  
Examination and analysis of the works of major writers who have strongly influenced the development of black politics in the United States.
- POLI 4660 The Politics of Ethnic Tension** 3 cr.  
The following topics will be emphasized: the development of alienation and political identity in the minority community; perceptions of the power structure; economic factors in the rise of ethnic politics; the politics of confrontation; and religious, linguistic, racial, and national bases of conflict.
- POLI 4670 Women and Politics** 3 cr.  
A study of feminist political thought, and of women's political movements, political issues, and political behavior and attitudes in the United States and in other countries.
- POLI 4696 Washington Center Internship** 3-6 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- POLI 4697 Washington Center Special Topics** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic

- Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- POLI 4698 Washington Center Independent Research** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer). Not for graduate credit.
- POLI 4700 Latin American Government and Politics** 3 cr.  
An analysis and survey of the governmental and political processes of Latin America and their contributions to modern government.
- POLI 4710 Politics of the Developing Areas** 3 cr.  
An analysis of issues relevant to politics in the developing nations with emphasis on the relationship of politics to rapid economic and social change and evaluation of policies intended to promote development.
- POLI 4750 Russian Politics** 3 cr.  
A study of the former Soviet Union and the contemporary political systems of Russia and the other USSR successor states with emphasis upon political culture, political socialization and recruitment, channels of communication, and organization and functioning of governments and political parties.
- POLI 4755 Russian Foreign Policy** 3 cr.  
A survey and analysis of the foreign policy of Russia since the collapse of the USSR, including the Soviet heritage, relations with other USSR successor states and with East Europe, the changed posture toward the West, and the new foreign elites.
- POLI 4800 Concepts and Patterns of International Politics** 3 cr.  
Prerequisite: POLI 2700 or consent of department. A systematic study of interaction between nation states, including a survey of the principal theories concerning international society.
- POLI 4820 International Organization** 3 cr.  
A review of the origins and types of international organizations, both intergovernmental and international non-governmental, and their role in the contemporary international system. The challenges and theoretical implications of issues such as humanitarian aid, peacekeeping, and economic, social, and political development will be discussed.
- POLI 4840 International Regionalism** 3 cr.  
An analysis and comparison of selected international regional organizations, the relationship between world and regional organizations, and economic and political integration.
- POLI 4870 American Foreign Policy** 3 cr.  
A study of the national interest as the guiding consideration in the development of American foreign policy from the beginning to the present. The importance of the constitutional framework, presidential and congressional leadership, pressure groups and public opinion, the changing world environment and the American response to it, particularly in recent years.
- POLI 4880 Comparative Foreign Policy** 3 cr.  
A comparative analysis of the determinants of foreign policy interactions between nation-states. The influence of governmental
- systems, legitimacy, size, levels of development, political culture, and leadership styles on foreign policy calculations and behavior.
- POLI 4885 Issues in Conflict and Diplomacy** 3 cr.  
An examination of the interaction of conflict with diplomacy. Conflict and diplomacy are studied analytically and operationally in terms of their limitations and possibilities in advancing and/or defending states' interests
- POLI 4900 Introduction to Techniques of Political Data Analysis** 3 cr.  
Prerequisite: POLI 2900 or consent of department. A beginning course in the analysis of political data. Students will be introduced to computer-assisted statistical analysis and will perform original research. Not for graduate credit.
- POLI 4910 Political Polling** 3 cr.  
Prerequisite: POLI 2900 or consent of department. The process of conducting survey research: research design conceptualization, operationalization, interview-schedule design, sampling theory, drawing the sample, interviewer recruitment and training, supervision, coding, data processing, elaboration, analysis, presentation of results.
- POLI 4991 Senior Honors Thesis** 3 cr.  
Prerequisites: consent of department and director of the Honors Program. Design and execution of an honors thesis. This course must be repeated once in order to graduate with honors in political science. Political Science courses 3995, 3998, 4990, and 4991 may not be taken either singly or jointly for more than a total of 12 credit hours. Not open to graduate students.
- POLI 4992 Field Research in Political Science** 1-3 cr.  
Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course may be repeated for credit. Political science courses 4992 through 4997 may not be taken either singly or jointly, for more than a total of six hours credit. In no case may a student register in political science courses 4992 through 4998 for a total of more than nine hours credit, nor may a student apply more than 12 hours of political science courses numbered 4990-4998 toward the hours required for the major in political science. The course involves the design and execution of field research projects in government for superior advanced undergraduates. Section number will correspond with credit to be earned. This course is not open to graduate students.
- POLI 4993 Field Research in Political Science** 1-3 cr.  
Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course may be repeated for credit. Political science courses 4992 through 4997 may not be taken either singly or jointly, for more than a total of six hours credit. In no case may a student register in political science courses 4992 through 4998 for a total of more than nine hours credit, nor may a student apply more than 12 hours of political science courses numbered 4990-4998 toward the hours required for the major in political science. The course involves the design and execution of field research projects in government for superior advanced undergraduates. Section number will correspond with credit to be earned. This course is not open to graduate students.
- POLI 4994 Field Research in Political Science** 1-3 cr.  
Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course may be repeated for credit. Political science courses 4992 through 4997 may not be taken either singly or jointly, for more than a total of six hours credit. In no case may a student register in political science courses 4992 through 4998 for a total of more than nine hours credit, nor may a student apply more than 12 hours of political science courses numbered 4990-4998 toward the hours required for the major in

- political science. The course involves the design and execution of field research projects in government for superior advanced undergraduates. Section number will correspond with credit to be earned. This course is not open to graduate students.
- POLI 4998 Internship in Political Science** 3 cr.  
This course is not open to graduate students.
- POLI 6100 Sem Public Admin & Policy** 3 cr.  
Primary attention in this course will be on several processes of public administration as political processes (e.g. budgeting, personnel administration, intergovernmental relations, international administration). In addition, the historical development of public administration as an academic endeavor will be explored.
- POLI 6105 Bureaucratic Politics and Public Policy** 3 cr.  
Studies the internal operations of the bureaucracy, focusing on decision making and discretion. Particular attention is given to external relations and the role of bureaucracy in public policy making.
- POLI 6110 Seminar in Public Management** 3 cr.  
Prerequisite: consent of department. Study and analysis of problems and processes of the management of public organizations.
- POLI 6120 Seminar in Organizational Theory** 3 cr.  
A survey and analysis of the leading works in organization theory.
- POLI 6210 Seminar on Urban Political Systems** 3 cr.  
A review of the literature dealing with urban political processes. Topics will include metropolitan fragmentation and integration, intra-jurisdictional structural characteristics, urban policy makers, structures of community power, and the city within the federal system.
- POLI 6211 Seminar on Urban Political Analysis** 3 cr.  
Prerequisite: POLI 6210 or consent of department. A research-oriented seminar in urban political processes and policies. Inferential techniques employed in the analysis of urban phenomena will be examined, and students will be required to engage in original research endeavors. Non-Ph.D students may take either 6211 or 6212. Ph.D. students may take both 6211 and 6212.
- POLI 6212 Seminar on Urban Political Analysis** 3 cr.  
Prerequisite: POLI 6210 or consent of department. A research-oriented seminar in urban political processes and policies. Inferential techniques employed in the analysis of urban phenomena will be examined, and students will be required to engage in original research endeavors. Non-Ph.D students may take either 6211 or 6212. Ph.D. students may take both 6211 and 6212.
- POLI 6230 Seminar in Public Policy Formation** 3 cr.  
Emphasizes the policymaking process from agenda setting through impact and evaluation. It considers the roles of government structure and the external environment on how public policy is made and carried out.
- POLI 6240 Seminar in American Public Policy** 3 cr.  
Offers an in-depth look at substantive issues and issue networks in public policymaking.
- POLI 6245 Seminar in American Foreign Policy and National Security Affairs** 3 cr.  
This seminar will explore the theoretical concepts relating to the process of policy-making, the interface between domestic, foreign, and national security policies and politics, the role of bureaucratic politics and the thrust and content of American foreign and security policies.
- POLI 6250 Seminar in Comparative Urban Politics** 3 cr.  
Methodology in the study of comparative urban political systems, the new urbanism and traditional society, problems of planning and processes of communication, urbanism and political structures, political socialization in urban environments, urbanism and ecology, minority groups in the urban politics of various systems.
- POLI 6310 Seminar in State and Local Government** 3 cr.  
A seminar in state and local government with special emphasis on comparative state politics and political systems.
- POLI 6510 Seminar in Political Theory** 3 cr.  
Seminar in Political Theory. May be repeated once for credit with consent of the Department.
- POLI 6570 Seminar in Contemporary Political Theory** 3 cr.  
Seminar in Contemporary Political Theory. May be repeated once for credit with consent of the Department.
- POLI 6580 Seminar in Marxist Theory** 3 cr.  
This seminar deals with the development of Marxist political and social thought, the place of Marxism in the history of western ideas, and the contemporary importance and relevance of Marxism. The following aspects will be especially emphasized: Marx's concept of alienation, the phenomenon of revisionism, the restructuring of Marxism under Soviet Communism, the Maoist deviation, attempts to integrate Marx and Darwin (Engels) and Marx and Freud (Marcuse).
- POLI 6620 Seminar in American Political Behavior** 3 cr.  
Prerequisite: POLI 6002. Seminar on voting behavior and public opinion in the United States. Topics include determinants of the vote, partisanship, issues and elections, economic influences, attitude development, and participation. May be repeated once for credit with the consent of department.
- POLI 6630 Seminar in Political Socialization** 3 cr.  
A study of the social process as related to political beliefs, norms, and standards of behavior. Topics to be covered will include the content of socialization, the circumstances under which learning occurs, the agents of socialization and the impact of political learning on the individual's political behavior.
- POLI 6641 Research on Minority Politics** 3 cr.  
Prerequisite: POLI 6640 or consent of department. A research-oriented seminar in minority politics. Inferential techniques employed in the analysis of minority politics will be examined, and students will be required to engage in original research endeavors.
- POLI 6670 Seminar in Presidency Research** 3 cr.  
Investigation into problems, data, and prospects in researching the American presidency. Examines the presidency in relation to other governmental and nongovernmental actors, emphasizing public policy linkages.
- POLI 6675 Seminar in Presidential-Congressional Relations** 3 cr.  
A study of the constitutional foundations of executive-legislative relations, resources and constraints each possess, explaining presidential success in Congress, and the causes and consequences of divided government.
- POLI 6680 Seminar in Legislative Behavior** 3 cr.  
This course will seek to provide an overview of contemporary research on legislative behavior. Most of the existing literature focuses on the national Congress but the course will also be concerned with state legislatures as well. The seminar will include an extensive review of the literature and statistical analysis of legislative roll call voting.
- POLI 6710 Seminar in Developing Political Systems** 3 cr.  
Political modernization, ideology and political development, economic factors in political development, traditional versus modern sectors, role of the military, development of bureaucracies, guided democracy, charismatic leadership.

- POLI 6720 Seminar in Developed Political Systems** 3 cr.  
Criteria of development, structural-functional approach to analysis of developed political systems, communications models, interest articulation and aggregation, institutional frameworks.
- POLI 6730 Seminar in Political Change and Development** 3 cr.  
Theories of development; relationship between political and economic development, the revolution of rising expectations, political infrastructure, levels of development.
- POLI 6740 Seminar in Latin American Politics** 3 cr.  
The major alternatives for change: democratic reform or violent revolution; political infrastructure, interest aggregation and the acceleration of demands; the changing role of the military; the rise of urban terrorism; political heritage; personalism; dictatorship; role of the church.
- POLI 6990 Independent Research** 3 cr.  
Independent research in the graduate student's area of specialization, under the direction of a designated member of the graduate faculty.
- POLI 6995 Practicum in Public Administration** 1-6 cr.  
(URBN 6995 and POLI 6995 are cross-listed) Prerequisite: consent of the Coordinator of Public Administration. Supervised internship or terminal project in public administration. Open only to Master of Public Administration students. Section number will correspond with credit to be earned.
- POLI 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- POLI 7040 Examination Or Thesis Only** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- POLI 7050 Dissertation Research** 1-9 cr.  
Preparation of dissertation by Ph.D. candidate under direction of major professor and dissertation committee. Section number will correspond with credit to be earned. To be repeated for credit until dissertation is accepted.
- POLI 4100G Politics of Budgeting** 3 cr.  
Prerequisite: POLI 2151 or consent of department. Course focuses on the content and process of budgeting in the U.S. government with attention to the importance of budgeting for public policy, the roles and strategies available to the various participants, and reforms that have been proposed.
- POLI 4101G Introduction to Public Administration** 3 cr.  
Prerequisite: POLI 2151 or consent of department. A study of the problems and methods of administering public policies with special emphasis on problems of organization and control of government power
- POLI 4102G The Administrative Process** 3 cr.  
A study of systems and techniques of modern American public management. The course includes a study of underlying concepts. However, the main emphasis is upon development of skills for future administrators. A field problem is usually included.
- POLI 4120G Organizational Behavior** 3 cr.  
An analysis of research findings related to human behavior in complex organizations, especially public administrative bodies.
- POLI 4170G The Politics of Public Policy** 3 cr.  
An examination of the American public policy process and policy theory, covering the major concepts, controversies, and states of policy making as well as policy content.
- POLI 4180G Organization and the Political System** 3 cr.  
A systematic examination of theory and practice in the relationship between organizations and larger political systems in the modern world.
- POLI 4210G Politics of Metropolitan Areas** 3 cr.  
An examination of the growth and problems of metropolitan areas, with special emphasis on the political fragmentation and integration of metropolitan governments.
- POLI 4230G Policy Making and the Urban Environment** 3 cr.  
Prerequisite: POLI 2151 or consent of department. A study of the problems of policy-making and administration relative to improving the quality of the urban environment.
- POLI 4310G Processes of State Government** 3 cr.  
Prerequisite: POLI 2151 or consent of department. A study of structure, functions, and problems of state governments in the United States. Includes the actual observation of government in action.
- POLI 4410G American Constitutional Law** 3 cr.  
Prerequisite: POLI 2200 or consent of department. A study of the law of the Constitution and the place of the Supreme Court in the American political system; critical examination of separation of powers, judicial review, federalism and federal powers.
- POLI 4420G The American Constitution and Civil Liberties** 3 cr.  
Prerequisite: POLI 2151 or consent of department. An examination of the political relevance of major federal constitutional limitations, property rights, First Amendment freedoms, the rights of criminal defendants and ethnic minorities.
- POLI 4440G Urban Judicial Process** 3 cr.  
Prerequisite: POLI 2200 or consent of department. A study of judicial processes involved in metropolitan development and in the application of environmental controls to urban areas.
- POLI 4510G History of Western Political Thought: Plato Through Machiavelli** 3 cr.  
A survey of development of Western political thought from its Greek origins through Machiavelli.
- POLI 4511G History of Western Political Thought: Reformers Through Marx** 3 cr.  
Modern Western political thought from the Protestant Reformation through Marx.
- POLI 4530G American Political Theory** 3 cr.  
A study of major American political ideas, including American conceptions of liberty, equality, and the role of government.
- POLI 4550G Communist Political Thought** 3 cr.  
A study of the historical origins of communism in western and eastern Europe: an analysis of the classics from Marx to the present with emphasis on communist theory of state and law, democracy and federalism.
- POLI 4570G Contemporary Political Theory** 3 cr.  
Examines selected fundamental problems by exploring the works of important representative theorists.
- POLI 4621G Public Opinion** 3 cr.  
An analysis of contemporary public opinion and communication as aspects of the political process, with emphasis upon opinion formation, manipulation, and the mass media.

- POLI 4630G The American Presidency** 3 cr.  
Examines the constitutional and political development of the institutions, the selection process, executive decision-making, and relations with those inside and outside of government in making public policy.
- POLI 4653G Political Socialization of American Blacks** 3 cr.  
A study of the processes and agents of political socialization. Although the mainstream American experience will be emphasized, socialization within subcultures in the United States and socialization to other systems will be included.
- POLI 4657G Black Political Thought** 3 cr.  
Examination and analysis of the works of major writers who have strongly influenced the development of black politics in the United States.
- POLI 4660G The Politics of Ethnic Tension** 3 cr.  
The following topics will be emphasized: the development of alienation and political identity in the minority community; perceptions of the power structure; economic factors in the rise of ethnic politics; the politics of confrontation; and religious, linguistic, racial, and national bases of conflict.
- POLI 4670G Women and Politics** 3 cr.  
A study of feminist political thought, and of women's political movements, political issues, and political behavior and attitudes in the United States and in other countries.
- POLI 4696G Washington Center Internship** 3-6 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- POLI 4697G Washington Center Special Topics** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer).
- POLI 4698G Washington Center Independent Research** 3 cr.  
The Washington, D.C. Internship Program is offered in cooperation with the Washington Center for Internships and Academic Seminars. Students of junior-level or higher standing and a grade-point average of 2.5 or better are eligible to participate in the Program. The program is conducted in Washington, D.C. and consists of an internship of four-and-a-half workdays per week, a three-hour course one night a week, and a major research paper. Participants can earn 12 credit hours during a fall or spring semester (nine hours in summer). Not for graduate credit.
- POLI 4700G Latin American Government and Politics** 3 cr.  
An analysis and survey of the governmental and political processes of Latin America and their contributions to modern government.
- POLI 4710G Politics of the Developing Areas** 3 cr.  
An analysis of issues relevant to politics in the developing nations with emphasis on the relationship of politics to rapid economic and social change and evaluation of policies intended to promote development.
- POLI 4750G Russian Politics** 3 cr.  
A study of the former Soviet Union and the contemporary political systems of Russia and the other USSR successor states with emphasis upon political culture, political socialization and recruitment, channels of communication, and organization and functioning of governments and political parties.
- POLI 4755G Russian Foreign Policy** 3 cr.  
A survey and analysis of the foreign policy of Russia since the collapse of the USSR, including the Soviet heritage, relations with other USSR successor states and with East Europe, the changed posture toward the West, and the new foreign elites.
- POLI 4800G Concepts and Patterns of International Politics** 3 cr.  
Prerequisite: POLI 2700 or consent of department. A systematic study of interaction between nation states, including a survey of the principal theories concerning international society.
- POLI 4820G International Organization** 3 cr.  
A review of the origins and types of international organizations, both intergovernmental and international non-governmental, and their role in the contemporary international system. The challenges and theoretical implications of issues such as humanitarian aid, peacekeeping, and economic, social, and political development will be discussed.
- POLI 4840G International Regionalism** 3 cr.  
An analysis and comparison of selected international regional organizations, the relationship between world and regional organizations, and economic and political integration.
- POLI 4870G American Foreign Policy** 3 cr.  
A study of the national interest as the guiding consideration in the development of American foreign policy from the beginning to the present. The importance of the constitutional framework, presidential and congressional leadership, pressure groups and public opinion, the changing world environment and the American response to it, particularly in recent years.
- POLI 4880G Comparative Foreign Policy** 3 cr.  
A comparative analysis of the determinants of foreign policy interactions between nation-states. The influence of governmental systems, legitimacy, size, levels of development, political culture, and leadership styles on foreign policy calculations and behavior.
- POLI 4885G Issues in Conflict and Diplomacy** 3 cr.  
An examination of the interaction of conflict with diplomacy. Conflict and diplomacy are studied analytically and operationally in terms of their limitations and possibilities in advancing and/or defending states' interests.
- POLI 4900G Introduction to Techniques of Political Data Analysis** 3 cr.  
Prerequisite: POLI 2900 or consent of department. A beginning course in the analysis of political data. Students will be introduced to computer-assisted statistical analysis and will perform original research. Not for graduate credit.
- POLI 4910G Political Polling** 3 cr.  
Prerequisite: POLI 2900 or consent of department. The process of conducting survey research: research design conceptualization, operationalization, interview-schedule design, sampling theory, drawing the sample, interviewer recruitment and training, supervision, coding, data processing, elaboration, analysis, presentation of results.

**POLI 4992G Field Research in Political Science** 1-3 cr.  
Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course may be repeated for credit. Political science courses 4992 through 4997 may not be taken either singly or jointly, for more than a total of six hours credit. In no case may a student register in political science courses 4992 through 4998 for a total of more than nine hours credit, nor may a student apply more than 12 hours of political science courses numbered 4990-4998 toward the hours required for the major in political science. The course involves the design and execution of field research projects in government for superior advanced undergraduates. Section number will correspond with credit to be earned. This course is not open to graduate students.

**POLI 4993G Field Research in Political Science** 1-3 cr.  
Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course may be repeated for credit. Political science courses 4992 through 4997 may not be taken either singly or jointly, for more than a total of six hours credit. In no case may a student register in political science courses 4992 through 4998 for a total of more than nine hours credit, nor may a student apply more than 12 hours of political science courses numbered 4990-4998 toward the hours required for the major in political science. The course involves the design and execution of field research projects in government for superior advanced undergraduates. Section number will correspond with credit to be earned. This course is not open to graduate students.

**POLI 4994G Field Research in Political Science** 1-3 cr.  
Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course may be repeated for credit. Political science courses 4992 through 4997 may not be taken either singly or jointly, for more than a total of six hours credit. In no case may a student register in political science courses 4992 through 4998 for a total of more than nine hours credit, nor may a student apply more than 12 hours of political science courses numbered 4990-4998 toward the hours required for the major in political science. The course involves the design and execution of field research projects in government for superior advanced undergraduates. Section number will correspond with credit to be earned. This course is not open to graduate students.

## Psychology

**PSYC 1000 General Psychology** 3 cr.  
Offered each semester. A general introduction to the scientific study of the behavior of organisms. An honors section (1009) is available for qualified students.

**PSYC 1009 General Psychology** 3 cr.  
Offered each semester. A general introduction to the scientific study of the behavior of organisms; for students in the Honors Program.

**PSYC 1310 General Statistics** 3 cr.  
Offered each semester. Prerequisites: PSYC 1000 or 2200 and MATH 1111 or consent of department. Frequency distributions, measures of central tendency and dispersion, correlation, discrete and continuous probability functions, tests of significance including t and chi-square. Introduction to analysis of variance, regression, and non-parametric tests of significance. Two hours of lecture and two hours of laboratory.

**PSYC 1500 The Psychology of Personal Adjustment** 3 cr.  
Offered each semester. The psychology of daily living with emphasis on identification and coping with the stressors of life. Topics include personality, stress and anxiety, interpersonal relationships, and substance abuse

**PSYC 1520 Human Sexual Behavior** 3 cr.  
Offered each semester. Aspects of human sexuality including behavior, anatomy, physiology, cross-cultural comparisons, and historical and current perspectives.

**PSYC 2091 Special Topics in Psychology** 3 cr.  
Prerequisite: PSYC 1000 or 2200 or consent of department. Topics will vary from semester to semester. This course may be repeated once for credit.

**PSYC 2110 Child Psychology** 3 cr.  
Offered each semester. Prerequisite: PSYC 1000 or 2200 or consent of department. Study of the physical, social, and psychological development of the child.

**PSYC 2120 Adolescent Psychology** 3 cr.  
Offered each semester. Prerequisite: PSYC 1000 or 2200 or consent of department. Study of the physical, social, and psychological development of the adolescent.

**PSYC 2130 Adult Development and Aging** 3 cr.  
Prerequisite: Psychology 1000 or 2200 or consent of department. Study of the physical, social, and psychological development of the adult.

**PSYC 2160 Psychology of Speech Language and HEaring** 3 cr.  
Prerequisite: PSYC 1000 or 2200 or consent of department. A survey of normal and abnormal processes involved in communication. Topics will include current research regarding the physiological and psychological contributions to communication and its disorders, such as stuttering, learning disabilities, senile dementia, and spasmodic dysphonia.

**PSYC 2200 Educational Psychology** 3 cr.  
Offered each semester. Applications of psychology to the educative process.

**PSYC 2300 Experimental Design and Methodology** 3 cr.  
Offered each semester. Prerequisite: PSYC 1310 or a first course in statistics or consent of department. Introduction to scientific method, experimental and statistical design, scientific writing, and psychophysical and psychological research methodology. Two hours of lecture and two hours of laboratory.

**PSYC 2320 Introduction to Biopsychology** 3 cr.  
Prerequisites: PSYC 1000 or BIOS 1083 or BIOS 1303. The study of the brain and nervous system, sensory processing, movement, development, sleep and arousal, motivation, emotion, learning, memory, cognitive function, and language.

**PSYC 2380 Psychology of Cognition** 3 cr.  
Prerequisite: PSYC 1000 or 2200 or consent of department. The study of concept formation, problem-solving, understanding, and language with emphasis on the development thereof; theory, research, and application.

**PSYC 2400 Social Psychology** 3 cr.  
Prerequisite: three hours of psychology or sociology. Survey of the cultural forces as they affect attitudes, social learning, perception, and communication of the individual and the group.

**PSYC 3090 Independent Reading and Research in Psychology** 1-6 cr.  
Offered each semester. Prerequisite: PSYC 2300 and consent of department. The individual student is responsible for the selection of the area of reading or research. May be repeated for a total of six semester hours credit. Section number will correspond with credit to be earned.

**PSYC 3095 Field Experience in Applied Psychology** 3 cr.  
Prerequisites: Psychology 2300 completion of a 4000-level content course in an area relevant to the proposed field experience, and

- consent of department. Students will be placed in an agency or office setting which has been approved by the appropriate departmental committee, to gain supervised experience in the applications of psychology in field settings. Students usually work eight hours a week at times mutually agreeable to the individual and the applied setting. In addition, students must meet regularly with the faculty supervisor, and the student's work must be evaluated by both the faculty supervisor and the site supervisor. May be repeated once for credit.
- PSYC 3099 Senior Honors Thesis** 1-6 cr.  
Offered each semester. Prerequisite: PSYC 2300, consent of department, consent of director of the Honors Program, and grade point averages of at least 3.5 in psychology and 3.25 overall. Senior honors thesis research in psychology under the direction of a faculty member. Students may earn up to a total of six credits.
- PSYC 4010 History of Modern Psychology** 3 cr.  
Fall semester. Prerequisite: PSYC 2300 or consent of department. A historical survey of psychology with special reference to schools of psychology.
- PSYC 4091 Special Topics in Psychology** 3 cr.  
Prerequisite: PSYC 2300. The topics will vary from semester to semester. This course may be repeated once for credit.
- PSYC 4100 Developmental Psychology** 3 cr.  
Fall semester. Prerequisite: PSYC 2300 or consent of department. Emphasis on learning, motivation, perceptual, and verbal processes in child behavior.
- PSYC 4270 Applied Educational Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. Applications of psychological principles and technology to education.
- PSYC 4310 Intermediate Statistics** 3 cr.  
Spring semester. Prerequisite: PSYC 2300. An intensive treatment of descriptive and inferential statistics, including an introduction to the analysis of variance. Consideration is given to special correlation procedures, including multiple prediction. Two hours of lecture and two hours of laboratory
- PSYC 4320 Physiological Psychology** 3 cr.  
Prerequisite: PSYC 2300 and 2320 or consent of department. An introduction to the function of the nervous system with respect to sensation, perception, learning, and motivation. Two hours of lecture and two hours of laboratory.
- PSYC 4330 Comparative Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. Similarities and differences in behavior between and within various animal species, influences of heredity and experience on behavior. Two hours of lecture and two hours of laboratory.
- PSYC 4350 Psychology of Learning** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. The study of behavior from the standpoint of learning. A critical review and analysis of recent experimental literature in the learning area plus a consideration of the major theories of learning. Two hours of lecture and two hours of laboratory.
- PSYC 4365 Sensation and Perception** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. A consideration of the sensory systems (including vision, audition, olfaction, gustation, somesthesia) and a survey of perceptual phenomena, scaling, psychophysics, the organization of perception, perceptual learning, and sensation-perception distinctions.
- PSYC 4400 Advanced Social Psychology** 3 cr.  
Prerequisites: PSYC 2300 and 2400 or consent of department. Study of current findings and theories of social psychology examined in the light of existing methodologies and past and present research.
- PSYC 4510 Personality** 3 cr.  
Spring semester. Prerequisite: Six hours of psychology courses at the 2000 level or consent of department. Determinants and dynamics of personality.
- PSYC 4530 Introduction to Abnormal Psychology** 3 cr.  
Fall semester. Prerequisite: six hours of psychology courses at the 2000 level or above or consent of department. An introduction to personality maladjustment and mental disorder.
- PSYC 4550 Clinical Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. Introduction to the history, clinical techniques, research methods, ethics, and political concerns of clinical psychology.
- PSYC 4600 Psychological Tests and Measurements** 3 cr.  
Spring semester. Prerequisite: PSYC 2300 or consent of department. Test construction, standardization, validation; intelligence, clerical, mechanical, spatial aptitude tests; interest and personality tests; test batteries. Two hours of lecture and two hours of laboratory.
- PSYC 4700 Introduction to Personnel and Industrial Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. A review of scientific methodology and statistical concepts applicable to the industrial situation; followed by the contributions of psychology to personnel selection, training, human relations, environmental engineering, organizational structure, and consumer research.
- PSYC 6050 Seminar on Professional Problems** 3 cr.  
Prerequisite: consent of department. Review of licensing requirements in Louisiana and other states; ethical standards in practice, teaching, and research; and laws governing the use of humans and animals in research. Review of research grant application procedures, practicum responsibilities, and an overview of standard practices in the instruction of psychology courses.
- PSYC 6090 Independent Research in Psychology** 3 cr.  
Prerequisite: consent of department. This course may be repeated for credit. Research experience with psychological topics not being taken concurrently for thesis or dissertation credit. The individual student is responsible for the selection of the area of research.
- PSYC 6091 Seminar** 1 cr.  
All graduate students will be expected to participate in a report and discussion group in the field of psychology. Must be taken for credit a minimum of four times.
- PSYC 6101 Fundamentals of Applied Developmental Psychology I** 3 cr.  
Prerequisite: admission to graduate program in psychology and consent of department. A review of research and theory in lifespan developmental psychology. Special consideration will be given to age-related changes in cognitive structure, language acquisition, sensation and perception, experiential influences, and social-emotional development.
- PSYC 6102 Fundamentals of Applied Developmental Psychology II** 3 cr.  
Prerequisite: PSYC 6101. This course is concerned with how psychological research and intervention strategies are combined in health and human services settings. Social policy and available services will be discussed.

- PSYC 6130 Infant Care and Stimulation** 3 cr.  
Prerequisite: PSYC 6101. The course will deal with pre- and post-natal influences on early development from conception through three years of age. Topics will include prenatal development, learning, cognition, sensory processes, and social factors.
- PSYC 6150 Psychology of Aging** 3 cr.  
Prerequisite: PSYC 6101 and Consent of Department. A review and evaluation of research and theories of the aging process. Emphasis will be placed on the application of basic research in neuropsychology, psychophysiology, psychopharmacology, cognition, environmental issues, interpersonal relations, stress and coping, and clinical issues.
- PSYC 6170 Problems in Social-Emotional Development** 3 cr.  
Prerequisite: PSYC 6101 and Consent of Department. A review and evaluation of research in social-emotional development throughout the life-span. Emphasis will be given to the determinants of deviant social-emotional development in childhood, maturity, and senescence. Techniques for the assessment and management of deviant development will be presented.
- PSYC 6180 Problems in Cognitive and Intellectual Development** 3 cr.  
Prerequisite: PSYC 6101. A review of the theoretical, methodological, and applied issues in cognitive and intellectual development across the life-span. Emphasis is placed on research and its practical application to cognitive and intellectual deficiencies.
- PSYC 6195 Advanced Seminar in Applied Developmental Psychology** 3 cr.  
Prerequisite: PSYC 6101 or consent of department. The topics vary from semester to semester and may include current topics in social, personality, and cognitive development, developmental methods, or new or developing areas of application. This seminar may be repeated for credit.
- PSYC 6291 Advanced Seminar in Educational-Developmental Psychology** 3 cr.  
The topics will be varied from semester to semester and may include such areas as contemporary theory, research problems, and controversial issues in educational and developmental psychology.
- PSYC 6292 Advanced Seminar in Educational-Developmental Psychology** 3 cr.  
The topics will be varied from semester to semester and may include such areas as contemporary theory, research problems, and controversial issues in educational and developmental psychology.
- PSYC 6350 Advanced Learning** 3 cr.  
Prerequisite: admission to graduate program in psychology and consent of department. An advanced study of the principles and theories of learning, including both animal and human learning. Two hours of lecture and two hours of laboratory.
- PSYC 6391 Seminar in Experimental Psychology** 3 cr.  
The topics will be varied from semester to semester and will include: discrimination learning, avoidance learning, verbal behavior, animal behavior, brain stimulation, and behavior. This seminar may be repeated once for credit.
- PSYC 6392 Seminar in Experimental Psychology** 3 cr.  
The topics will be varied from semester to semester and will include: discrimination learning, avoidance learning, verbal behavior, animal behavior, brain stimulation, and behavior. This seminar may be repeated once for credit.
- PSYC 6400 Social Psychology** 3 cr.  
(SOC 6573 and PSYC 6400 are cross-listed) Analysis of the relationship between human behavior and social context, emphasizing the impact of social forces on social action and cognition. Topics include theoretical paradigms in social psychology, language use and interaction, small groups, self and identities, collective behavior, attitudes and behavior. Critical analysis of existing theory and research methodology will be considered for each topic.
- PSYC 6500 Clinical Psychology** 3 cr.  
Prerequisite: consent of department. An introduction to the problems of psychodiagnosis and psychotherapeutic techniques.
- PSYC 6550 Psychopathology** 3 cr.  
Prerequisite: consent of department. An introduction to the experimental analysis of deviant behavior.
- PSYC 6610 The Measurement of Intelligence** 3 cr.  
Prerequisite: consent of department.
- PSYC 6630 Measurement of Behavior** 3 cr.  
Prerequisite: consent of department. The techniques and theory of behavior measurement with emphasis on problems of data collection.
- PSYC 6802 Methods of Applied Biopsychology** 3 cr.  
Prerequisite: PSYC 6801. Lectures, seminars, and demonstrations of the techniques and methods involved in the application of psychology in medical and biomedical settings. Two hours of lecture and two hours of laboratory.
- PSYC 6810 Psychopharmacology** 3 cr.  
Prerequisite: PSYC 6801. Interrelations of human biochemistry and behavior with particular attention to neural transmitters, the endocrine system, and clinical applications.
- PSYC 6820 Psychophysiology** 3 cr.  
Prerequisite: PSYC 6801. Review of physiological concomitants of normal and disturbed behavioral processes. Topics will include evoked potentials galvanic skin response and brainstem potentials. Two hours of lecture and two hours of laboratory.
- PSYC 6830 Neuropsychology** 3 cr.  
Prerequisite: PSYC 6801. Review and evaluation of research in and the diagnosis and treatment of brain dysfunction.
- PSYC 6840 Behavioral Medicine** 3 cr.  
Prerequisite: PSYC 6801. Summary of biological and behavioral interactions in the prevention, diagnosis, and treatment of psychosomatic disorders such as headaches, insomnia, sexual dysfunction, and cardiovascular diseases.
- PSYC 6895 Advanced Seminar in Applied Biopsychology** 3 cr.  
Prerequisite: PSYC 6801 or consent of department. The topics vary from semester to semester and may include such current topics as brain function theory, biopsychological methods, or new or developing areas of application. This seminar may be repeated for credit.
- PSYC 7000 Thesis Research** 1-9 cr.  
To be repeated for credit until thesis is accepted. Section number will correspond with the credit to be earned.
- PSYC 7025 Procedures and Problems in Psychological Research** 3 cr.  
Prerequisite: for doctoral candidates only. This course may be repeated once for credit. Research experience with topics not planned for dissertation. The student is responsible for the selection of the area of research.
- PSYC 7040 Examination or Thesis Only** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the

Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.

- PSYC 7050 Dissertation Research** 1-9 cr.  
Preparation of dissertation by Ph.D. candidate under direction of major professor and dissertation committee. Section number will correspond with credit to be earned. To be repeated for credit until dissertation is accepted
- PSYC 4010G History of Modern Psychology** 3 cr.  
Fall semester. Prerequisite: PSYC 2300 or consent of department. A historical survey of psychology with special reference to schools of psychology.
- PSYC 4091G Special Topics in Psychology** 3 cr.  
Prerequisite: PSYC 2300. The topics will vary from semester to semester. This course may be repeated once for credit.
- PSYC 4100G Developmental Psychology** 3 cr.  
Fall semester. Prerequisite: PSYC 2300 or consent of department. Emphasis on learning, motivation, perceptual, and verbal processes in child behavior.
- PSYC 4270G Applied Educational Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. Applications of psychological principles and technology to education.
- PSYC 4310G Intermediate Statistics** 3 cr.  
Spring semester. Prerequisite: PSYC 2300. An intensive treatment of descriptive and inferential statistics, including an introduction to the analysis of variance. Consideration is given to special correlation procedures, including multiple prediction. Two hours of lecture and two hours of laboratory
- PSYC 4320G Physiological Psychology** 3 cr.  
Prerequisite: PSYC 2300 and 2320 or consent of department. An introduction to the function of the nervous system with respect to sensation, perception, learning, and motivation. Two hours of lecture and two hours of laboratory.
- PSYC 4330G Comparative Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. Similarities and differences in behavior between and within various animal species, influences of heredity and experience on behavior. Two hours of lecture and two hours of laboratory.
- PSYC 4350G Psychology of Learning** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. The study of behavior from the standpoint of learning. A critical review and analysis of recent experimental literature in the learning area plus a consideration of the major theories of learning. Two hours of lecture and two hours of laboratory.
- PSYC 4365G Sensation and Perception** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. A consideration of the sensory systems (including vision, audition, olfaction, gustation, somesthesia) and a survey of perceptual phenomena, scaling, psychophysics, the organization of perception, perceptual learning, and sensation-perception distinctions.
- PSYC 4400G Advanced Social Psychology** 3 cr.  
Prerequisites: PSYC 2300 and 2400 or consent of department. Study of current findings and theories of social psychology examined in the light of existing methodologies and past and present research.
- PSYC 4510G Personality** 3 cr.  
Spring semester. Prerequisite: Six hours of psychology courses at the 2000 level or consent of department. Determinants and dynamics of personality.

- PSYC 4530G Introduction to Abnormal Psychology** 3 cr.  
Fall semester. Prerequisite: six hours of psychology courses at the 2000 level or above or consent of department. An introduction to personality maladjustment and mental disorder.
- PSYC 4550G Clinical Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. Introduction to the history, clinical techniques, research methods, ethics, and political concerns of clinical psychology.
- PSYC 4600G Psychological Tests and Measurements** 3 cr.  
Spring semester. Prerequisite: PSYC 2300 or consent of department. Test construction, standardization, validation; intelligence, clerical, mechanical, spatial aptitude tests; interest and personality tests; test batteries. Two hours of lecture and two hours of laboratory.
- PSYC 4700G Introduction to Personnel and Industrial Psychology** 3 cr.  
Prerequisite: PSYC 2300 or consent of department. A review of scientific methodology and statistical concepts applicable to the industrial situation; followed by the contributions of psychology to personnel selection, training, human relations, environmental engineering, organizational structure, and consumer research.

### Quantitative Methods–Business and Research

- QMBE 2785 Introduction to Business and Economic Statistics** 3 cr.  
Offered each semester. Prerequisite: BA 2780, MATH 1115 or 1125 and 1140. Descriptive statistics including measures of location and dispersion; classical probability theory; statistical inference including sampling, point and interval estimation and hypothesis testing; time series; index numbers.
- QMBE 2786 Intermediate Business and Economic Statistics** 3 cr.  
Prerequisite: BA 2780, MATH 2314 and concurrent enrollment in quantitative methods - QMBE 2787. Hypothesis testing; Chi-Squared distribution; analysis of variance; correlation; simple and multiple regression; non-parametric methods; forecasting.
- QMBE 4785 Advanced Regression and Correlation Analysis for Business and Economics** 3 cr.  
Prerequisite: QMBE 2786 or equivalent or consent of department. Matrix techniques; linear regression and correlation theory, heteroscedasticity, autocorrelation and multicollinearity; two-stage least squares, maximum likelihood techniques; K-class estimators; computer use, research methods, and data sources.
- QMBE 4786 Advanced Statistical Decision Analysis for Business and Economics** 3 cr.  
Prerequisite: QMBE 2786 or equivalent or consent of department. Decision under uncertainty; conditional, joint and marginal probability; Bayes Theorem; empirical and theoretical frequency distributions; statistical decision rules with binomial sampling and Bernoulli processes; statistical decision rules with normal sampling, and the Central Limit Theorem; suspension of judgment.
- QMBE 6280 Mathematics in Financial Economics** 3 cr.  
Prerequisite: ECON 3781 or MATH 2020 or 2107. Mathematics and applications of the following topics: Multivariate calculus, integral calculus, matrix algebra, differential equations, and non-linear programming.
- QMBE 6281 Econometrics I** 3 cr.  
Prerequisites: QMBE 2786 and 6280. A review of basic statistical inference and treatment of the general linear regression model and its extensions. Topics include probability and distribution theory, estimation and hypothesis testing, linear regression, heteroskedasticity

and serial correlation, varying parameter models, systems of linear regressions, nonlinear estimation and stochastic regressors.

**QMBE 6282 Econometrics II** 3 cr.  
Prerequisite: QMBE 6281. Topics in econometric analysis, including simultaneous equation models, time series analysis and distributed lag models, multiple time series, qualitative and limited dependent variable models, markets in disequilibrium, switching regressions, multicollinearity and robust estimation.

**QMBE 6283 Seminar in Mathematics and Statistics for Financial Economics** 3 cr.  
Prerequisite: QMBE 6282. Applications of econometric methods to empirical problems in financial economics. Topics, selected by the instructor, will be drawn from recent literature and will illustrate the use of new and previously developed econometric methods.

**QMBE 6780 Operations Research** 3 cr.  
Offered each semester. This course is an introduction to solving quantitative problems in business and government organizations. It includes linear programming and the simplex algorithm; duality; the assignment and transportation problems; integer programming; goal programming; non-linear programming using LaGrange multipliers and the Kuhn-Tucker method; Markov chains; simulation; Von Neumann-Morgenstern analyses of utility, games, and decisions.

**QMBE 6781 Business Forecasting and Econometrics** 3 cr.  
Prerequisites: QMBE 2786 and Economics 3781 or Mathematics 2010 or 2107. Single equation regression models with emphasis on applications in business, finance, and economics. Topics include: multiple regression with least squares and alternative estimators, two stage least squares, single equation forecasting, and forecasting with time series models.

**QMBE 4785G Advanced Regression and Correlation Analysis for Business and Economics** 3 cr.  
Prerequisite: QMBE 2786 or equivalent or consent of department. Matrix techniques; linear regression and correlation theory, heteroscedasticity, autocorrelation and multicollinearity; two-stage least squares, maximum likelihood techniques; K-class estimators; computer use, research methods, and data sources.

**QMBE 4786G Advanced Statistical Decision Analysis for Business and Economics** 3 cr.  
Prerequisite: QMBE 2786 or equivalent or consent of department. Decision under uncertainty; conditional, joint and marginal probability; Bayes Theorem; empirical and theoretical frequency distributions; statistical decision rules with binomial sampling and Bernoulli processes; statistical decision rules with normal sampling, and the Central Limit Theorem; suspension of judgment.

## Romance Languages

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**ROML 6003 Applied Romance Linguistics** 3 cr.  
Evaluation of language teaching methods based on recent learning theory. Readings and discussions of language methodology and textbook critiques. Required of all graduate students.

**ROML 6005 Romance Linguistics** 3 cr.  
Prerequisite: FREN 4015 or SPAN 4015 or equivalent. Comparative study of the history, phonology, morphology, and syntax of the two principal Romance languages. Required of graduate students with language/civilization concentration.

**ROML 6105 Methods of Research of Romance Literatures** 3 cr.  
A study of techniques of literary analysis and literary scholarship appropriate to each of the major genres of French and Spanish.

**ROML 6205 Comparative Romance Cultures** 3 cr.  
Prerequisite: FREN 4265 or SPAN 4265 or equivalent. Focus on the links of contemporary French and Spanish cultures to American culture through in-depth study of a common particular theme, problem, or perspective in the humanities, arts, or social sciences.

## Russian

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**RUSS 1001 Introductory Russian** 3 cr.  
A course for beginners with emphasis on basic language skills.

**RUSS 1002 Introductory Russian** 3 cr.  
A continuation of Russian 1001.

**RUSS 2001 Intermediate Russian** 3 cr.  
An intensive language study progressively accentuating reading skills.

**RUSS 2002 Intermediate Russian** 3 cr.  
Readings and exercises in Russian. Special emphasis on comprehension as well as oral and written expression in the language.

**RUSS 2101 Readings in Russian** 3 cr.  
Reading and discussion of selected Russian authors.

**RUSS 2402 Major Russian Writers in Translation** 3 cr.  
Selected readings and study of the outstanding works of nineteenth century Russian literature: Pushkin, Lermontov, Gogol, Dostoevsky, Tolstoy, and Turgenev.

**RUSS 2804 Russian Literature of the Soviet Period in Translation** 3 cr.  
An historical survey of Soviet Russian literature from 1917 to the present. Many authors and their works are discussed with emphasis on Zamyatin's *We*, Leonov's *The Thief*, Sholokhov's *And Quiet Flows the Don*, Pasternak's *Doctor Zhivago*, and Solzhenitsyn's *A Day in the Life of Ivan Denisovich*. Special attention is given to ideological and political aspects of Soviet theory and history of literature such as "social command," "socialist realism," and "the thaw."

**RUSS 3191 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated but combined credit may not exceed six semester hours.

**RUSS 3192 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated but combined credit may not exceed six semester hours.

**RUSS 3193 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated but combined credit may not exceed six semester hours.

## Sociology

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**SOC 1051 Introductory Sociology** 3 cr.  
Offered each semester. A first course in the study of human beings in society using basic concepts and methods of sociology. Topics include the influences of social groups on individuals' attitudes and behaviors, stability and change in the family, and social inequality.

- SOC 2152 Social Institutions** 3 cr.  
An analysis of stable and enduring social institutions, including the family, education, the economy, religion, government, the arts, science, law, and recreation.
- SOC 2175 Industrial Sociology** 3 cr.  
Human relationships in industry; the relations of industry to the community and society.
- SOC 2273 Society and the Person** 3 cr.  
Offered each semester. A review of the relationships between society and the person. The social conditioning of the individual through infancy, childhood, and adult life and the reciprocal influences of the person in society are the essence of the course.
- SOC 2707 Descriptive Statistics** 4 cr.  
Offered each semester. Prerequisite: three hours of mathematics above MATH 0107. A study of descriptive and inferential statistics employed in social science research including measures of central tendency and variation, rates, graphing techniques, measures of association, and regression. Laboratory meetings also cover introduction to computer usage, spread sheets, and PC-based statistics programs. Successful completion of SOC 2707 and 2708 meets the general degree requirement for computer literacy. Three hours of lecture and two hours of laboratory.
- SOC 2708 Methods in Social Research** 3 cr.  
Offered each semester. Prerequisite: SOC 1051. A comprehensive examination of the logic and applications of the scientific method in the social sciences. Topics include survey, evaluation, experiment, existing sources, and field research. In addition, the student is introduced to computer usage, including work processing and data analysis with a statistics package on a main frame computer. Successful completion of Sociology 2707 and 2708 meets the general degree requirement for computer literacy.
- SOC 2871 The Environment as a Social Problem** 3 cr.  
Prerequisite: Sociology 1051 or consent of instructor. Examines environmental hazards and depletion of natural resources as important social problems confronting contemporary society. Alternative understandings of the seriousness and probable causes of a number of environmental problems, such as air pollution, toxic contamination, loss of wetlands, and species extinction, are explored.
- SOC 2881 The City** 3 cr.  
A comparative study of cities and social groups and processes in the urban environment.
- SOC 2962 Current Social Problems** 3 cr.  
Offered each semester. A study of contemporary social problems and their consequences for humankind with emphasis on American society. Topics include crime, drug abuse, family problems, inequality, mental illness, population problems, and suicide.
- SOC 2994 Minority Peoples in America** 3 cr.  
A survey of principal American racial and ethnic minorities, with special emphasis on the causes and consequences of prejudice and discrimination.
- SOC 3091 Independent Work** 1 cr.  
Offered each semester. Prerequisite: consent of department. Readings, conferences, and research reports under the direction of a member of the sociology faculty. In no case may a student register for SOC 3091-3097 for a total of more than nine hours, nor may a student apply more than six hours of sociology courses numbered 3091-3097 toward the hours required for the major in sociology.
- SOC 3092 Independent Work** 1 cr.  
Offered each semester. Prerequisite: consent of department. Readings, conferences, and research reports under the direction of a member of the sociology faculty. In no case may a student register for SOC 3091-3097 for a total of more than nine hours, nor may a student apply more than six hours of sociology courses numbered 3091-3097 toward the hours required for the major in sociology.
- SOC 3093 Independent Work** 1 cr.  
Offered each semester. Prerequisite: consent of department. Readings, conferences, and research reports under the direction of a member of the sociology faculty. In no case may a student register for SOC 3091-3097 for a total of more than nine hours, nor may a student apply more than six hours of sociology courses numbered 3091-3097 toward the hours required for the major in sociology.
- SOC 3094 Independent Field Research in Sociology** 3 cr.  
Offered each semester. Prerequisite: consent of department. Practical applications of data collection methods in natural settings; observation, participant-observation and field experimentation; emphasis on implementing research methods in the community. In no case may a student register for Sociology 3091-3097 for a total of more than nine hours, nor may a student apply more than six hours of sociology courses numbered 3091-3097 toward the hours required for the major in sociology.
- SOC 3095 Independent Field Research in Sociology** 3 cr.  
Offered each semester. Prerequisite: consent of department. Practical applications of data collection methods in natural settings; observation, participant-observation and field experimentation; emphasis on implementing research methods in the community. In no case may a student register for Sociology 3091-3097 for a total of more than nine hours, nor may a student apply more than six hours of sociology courses numbered 3091-3097 toward the hours required for the major in sociology.
- SOC 3096 Internship in Sociology** 3 cr.  
Offered each semester. Prerequisites: Sociology 2707, 2708 and consent of department. The sociology intern is placed in a city, parish, or state government agency or office in the metropolitan area to learn about the applicability of the sociological perspective and methodology to applied endeavors in government. Interns usually work eight hours a week at times mutually agreeable to the individual and the agency. In addition, students must meet regularly with the faculty adviser and the student's work must be evaluated by both the supervisor and adviser. In no case may a student register for Sociology 3091-3097 for a total of more than nine hours, nor may a student apply more than six hours of sociology courses numbered 3091-3097 toward the hours required for the major in sociology.
- SOC 3097 Internship in Sociology** 3 cr.  
Offered each semester. Prerequisites: Sociology 2707, 2708 and consent of department. The sociology intern is placed in a city, parish, or state government agency or office in the metropolitan area to learn about the applicability of the sociological perspective and methodology to applied endeavors in government. Interns usually work eight hours a week at times mutually agreeable to the individual and the agency. In addition, students must meet regularly with the faculty adviser and the student's work must be evaluated by both the supervisor and adviser. In no case may a student register for Sociology 3091-3097 for a total of more than nine hours, nor may a student apply more than six hours of sociology courses numbered 3091-3097 toward the hours required for the major in sociology.
- SOC 3099 Senior Honors Thesis** 3 cr.  
Prerequisites: consent of department and director of the Honors Program. Directed research leading to the writing of a Senior Honors Thesis. This course must be repeated once in order to graduate

- With Honors in Sociology. The sociology honors program requires six hours of honors thesis in addition to all other requirements.
- SOC 3595 Academic Year Abroad: Special Topics in Sociology** 3 cr.  
This course is only offered through UNO's Academic Year Abroad (AYA) in Innsbruck, Austria and can be repeated once for credit.
- SOC 4070 Special Topics in Women, Literature, and Society** 3 cr.  
(WS 4070, ENGL 4070 and SOC 4070 are cross-listed) Prerequisite: ENGL 2378 or SOC 1051 or WS 2010 or consent of instructors. A team-taught, interdisciplinary study of women in literature and society. Variable topics include women and crime, women and work, women and the family, women and religion.
- SOC 4086 Sociological Theory** 3 cr.  
Prerequisite: nine hours in sociology. A systematic inquiry into the origins of modern sociological thought, with emphasis on major concepts and theoretical perspectives. Offered each semester.
- SOC 4094 Social Change** 3 cr.  
Prerequisite: SOC 1051 and 2708, or consent of the department. A comparative study of theories and processes of social change, with emphasis on modernization, economic development, and revolution.
- SOC 4098 Selected Topics in Sociology** 3 cr.  
Prerequisite: SOC 1051 or consent of department. Selected problems of sociological research and theory with emphasis on trends and tendencies in modern society. This course may be repeated once for credit.
- SOC 4101 Social Organization** 3 cr.  
Prerequisite: SOC 1051 and 2708, or consent of department. The structure and functioning of social groups and institutions, emphasizing American society.
- SOC 4104 The Family** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An analysis of the family in social context, with emphasis on the ways in which communities and societies promote stability and change in families. Patterns of interaction among family members are also explored, together with the impact of family life on the individual's social development.
- SOC 4105 Sociology of Religion** 3 cr.  
Examination of the social dimensions of religious beliefs and institutions. Emphasis on patterns of religious behavior in contemporary American society. Analysis of relationships between religion and processes of social change.
- SOC 4111 Sociology of Medicine** 3 cr.  
Prerequisite: SOC 1051 or consent of department. A sociological analysis of the interpersonal dynamics involved in the treatment of illness and the organizational structure and functions of health services.
- SOC 4112 Sociology of Mental Health** 3 cr.  
Prerequisite: Sociology 1051 or consent of department. A sociological analysis of mental illness including the following areas: the history of mental illness in society, etiological explanations of mental illness, epidemiology of mental illness, mental health professions, law and psychiatry, community mental health, and mental health and social policy.
- SOC 4113 Sociology of Aging and Death** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An examination of the personal, interpersonal, and cultural dimensions of aging, together with an appraisal of the meaning and consequences of death in America. While the emphasis is contemporary, some historical and cross-cultural materials are also used. Attention is drawn to personal and societal needs associated with aging and death.
- SOC 4124 Social Stratification** 3 cr.  
Prerequisite: SOC 1051 and 2708 or consent of department. A study of classes, status groups, castes, and social mobility.
- SOC 4130 Sociology of Women** 3 cr.  
Prerequisite: SOC 1051 or consent of department. This course examines the position of women in society. Such topics as sex role socialization, sexuality, reproductive rights, housework, childrearing, and violence against women are examined in terms of the social, economic, and political bases for gender differences.
- SOC 4152 Social Welfare Institutions** 3 cr.  
An analysis of social welfare institutions, both private and public, in fields of philanthropy, employment, insurance, health care, housing, urban renewal, poverty, crime prevention, and human development
- SOC 4161 Political Sociology** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An examination of social institutions and political ideologies under conditions of early and late modernity. Particular attention is given to the new types of social and political challenges created by globalization and such human-created risks as global climate change and bioterrorism. Additional topics include the relation between deliberative democracy and community, the continuing influence of tradition and fundamentalism, and international efforts to promote gender equity and human rights.
- SOC 4180 Women and Work** 3 cr.  
Prerequisite: SOC 1051 or consent of the department. Topics include an overview of the status of women, market work, including labor force participation, wages and wage discrimination, occupational segregation, equal pay for work of comparable worth, and domestic work.
- SOC 4788 Social Statistics** 3 cr.  
Fall semester. Prerequisite: SOC 2707 or equivalent. A survey of inductive statistical methods of analyzing social science data. Topics include probability, sampling distributions, parametric and non-parametric tests of significance, linear regression and correlation, and analyses of variance and covariance.
- SOC 4871 Sociology of the Environment** 3 cr.  
Prerequisite: SOC 2871 or consent of instructor. Examines the way in which major sociology theories have been used to analyze contemporary environmental problems. Three to five theoretical perspectives will be covered each semester; application of these theories to environmental issues will be illustrated through in-depth exploration of several case studies of particular environmental controversies or crises. The theoretical perspectives to be covered in a particular semester will be chosen from the following: attitudinal theory, community theory, conflict theory, dramaturgical theory, feminist theory, organizational theory, social movements theory, and symbolic interactionism.
- SOC 4881 The Urban Community** 3 cr.  
An analysis of the major subcommunities and subcultures to be found in any large urban complex. Special attention will be given to neighborhoods, ethnic and racial groups, suburbs, and religious and occupational subcultures.
- SOC 4882 Urban Issues: Planning and Social Policy** 3 cr.  
This course will deal with theory, policy, and methods in urban planning. It will also focus on special issues of contemporary problems, such as housing, urban renewal, and regional government.

- SOC 4903 Population Problems** 3 cr.  
Prerequisite: Sociology 1051 or consent of department. The study of population and social problems associated with changes in migration, fertility, and mortality. Topics include the relationships among rapid population growth and world food supply, world energy supply, and economic development.
- SOC 4911 Drugs and Society** 3 cr.  
This course approaches the subject of drugs from a multidisciplinary perspective, with attention given to the biological, psychological, sociological, and educational implications of drug use and abuse in American society. Special concern will be given to the analysis of the values as they relate to the development and elaboration of subcultures and countercultures whose lifestyles reflect the use of and/or dependency upon drugs.
- SOC 4921 Criminology** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An analysis of causes, consequences, and control of crime in American society. Special attention is given to the theoretical explanations of crime and the special methodological problems in studying criminal behavior.
- SOC 4954 Juvenile Delinquency** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An examination of the theoretical approaches to juvenile delinquency, alternative treatment programs, and the juvenile justice system, with primary focus on modern American society.
- SOC 6096 Sociology in Applied Settings** 3 cr.  
Prerequisite: SOC 6783, 6784 and consent of department. These two courses constitute a graduate internship where the graduate intern works in a public or private agency or organization a minimum of eight hours a week. The purpose is to apply sociological theory and methods to evaluate a particular problem or to assess the impact of proposed organizational changes or policies. The focus of the course is to produce an applied research paper, prepared under the direction of a graduate faculty advisor and a two-person committee. See program requirements for more details. No more than six hours in 6096-6097 may be counted for the degree, and a student may not count hours in both the 6096-6097 sequence and Sociology 7000 for the Master of Arts degree in Sociology.
- SOC 6097 Sociology in Applied Settings** 3 cr.  
Prerequisite: SOC 6783, 6784 and consent of department. These two courses constitute a graduate internship where the graduate intern works in a public or private agency or organization a minimum of eight hours a week. The purpose is to apply sociological theory and methods to evaluate a particular problem or to assess the impact of proposed organizational changes or policies. The focus of the course is to produce an applied research paper, prepared under the direction of a graduate faculty advisor and a two-person committee. See program requirements for more details. No more than six hours in 6096-6097 may be counted for the degree, and a student may not count hours in both the 6096-6097 sequence and Sociology 7000 for the Master of Arts degree in Sociology.
- SOC 6105 Seminar: Complex Organization and Bureaucracy** 3 cr.  
Analysis of the characteristics of the major types of large-scale, bureaucratic organizations found in contemporary industrial society, emphasizing the special common features of human organizations which cut across the many types of organization life.
- SOC 6107 Sociological Perspectives on Gender** 3 cr.  
Prerequisites: SOC 4086 or equivalent. This course is an advanced graduate seminar that examines a variety of theoretical perspectives in the social construction of gender and the applications of these perspectives to empirical research. Methodological issues and controversies involved in the study of gender are also explored.
- Throughout the course, emphasis will be placed on the impact of race, ethnicity, age, and sexual preference on gender relations.
- SOC 6396 Independent Readings in Sociology** 1-3 cr.  
Offered each semester. Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course will consist of readings, conferences, reports, and research papers under the direction of a member of the graduate faculty. Total credit which may be accumulated in 6396, 6397, and 6398 is limited to six hours. Section number will correspond with credit to be earned.
- SOC 6397 Independent Readings in Sociology** 1-3 cr.  
Offered each semester. Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course will consist of readings, conferences, reports, and research papers under the direction of a member of the graduate faculty. Total credit which may be accumulated in 6396, 6397, and 6398 is limited to six hours. Section number will correspond with credit to be earned.
- SOC 6398 Independent Readings in Sociology** 1-3 cr.  
Offered each semester. Prerequisite: consent of department. Amount of credit to be determined at the time of registration. This course will consist of readings, conferences, reports, and research papers under the direction of a member of the graduate faculty. Total credit which may be accumulated in 6396, 6397, and 6398 is limited to six hours. Section number will correspond with credit to be earned.
- SOC 6573 Social Psychology** 3 cr.  
(SOC 6573 and PSYC 6400 are cross-listed) Analysis of the relationship between human behavior and social context, emphasizing the impact of social forces on social action and cognition. Topics include theoretical paradigms in social psychology, language use and interaction, small groups, self and identities, collective behavior, attitudes and behavior. Critical analysis of existing theory and research methodology will be considered for each topic.
- SOC 6783 Advanced Sociological Theory** 3 cr.  
Prerequisite: SOC 4086. A critical and analytical study of the major theoretical perspectives in contemporary sociology emphasizing the specific concepts and issues as well as ways these theories have shaped and guided social research.
- SOC 6784 Methods of Sociological Investigation** 3 cr.  
A study of the principle methods of social science research with the purpose of developing students' ability to conduct research and be critical users of professional research.
- SOC 6785 Seminar in Research Applications** 3 cr.  
Prerequisites: SOC 4788 6783 and 6784 or consent of department. The course provides graduate students advanced instruction in research design and analysis. It examines the types of validity claimed by sociological knowledge, covers research design and analytical methods, and culminates in a specific thesis proposal from each student.
- SOC 6813 Seminar: Urban Ecology and Demography** 3 cr.  
An investigation of population trends in urban areas, and an attempt to account for these trends within the framework provided by contemporary human ecological explanations.
- SOC 6871 Environmental Analysis** 3 cr.  
Prerequisite: URBN 6850 or consent of coordinators. An investigation of environmental problems from a sociological perspective, with an emphasis on environmental analysis, management, and policy.

- SOC 7000 Thesis Research** 1-9 cr.  
Offered each semester. To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- SOC 7040 Examination or Thesis Only No credit** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- SOC 4070G Special Topics in Women, Literature, and Society** 3 cr.  
(WS 4070, ENGL 4070 and SOC 4070 are cross-listed) Prerequisite: ENGL 2378 or SOC 1051 or WS 2010 or consent of instructors. A team-taught, interdisciplinary study of women in literature and society. Variable topics include women and crime, women and work, women and the family, women and religion.
- SOC 4086G Sociological Theory** 3 cr.  
Prerequisite: nine hours in sociology. A systematic inquiry into the origins of modern sociological thought, with emphasis on major concepts and theoretical perspectives. Offered each semester.
- SOC 4094G Social Change** 3 cr.  
Prerequisite: SOC 1051 and 2708, or consent of the department. A comparative study of theories and processes of social change, with emphasis on modernization, economic development, and revolution.
- SOC 4098G Selected Topics in Sociology** 3 cr.  
Prerequisite: SOC 1051 or consent of department. Selected problems of sociological research and theory with emphasis on trends and tendencies in modern society. This course may be repeated once for credit.
- SOC 4101G Social Organization** 3 cr.  
Prerequisite: SOC 1051 and 2708, or consent of department. The structure and functioning of social groups and institutions, emphasizing American society.
- SOC 4104G The Family** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An analysis of the family in social context, with emphasis on the ways in which communities and societies promote stability and change in families. Patterns of interaction among family members are also explored, together with the impact of family life on the individual's social development.
- SOC 4105G Sociology of Religion** 3 cr.  
Examination of the social dimensions of religious beliefs and institutions. Emphasis on patterns of religious behavior in contemporary American society. Analysis of relationships between religion and processes of social change.
- SOC 4111G Sociology of Medicine** 3 cr.  
Prerequisite: SOC 1051 or consent of department. A sociological analysis of the interpersonal dynamics involved in the treatment of illness and the organizational structure and functions of health services.
- SOC 4112G Sociology of Mental Health** 3 cr.  
Prerequisite: Sociology 1051 or consent of department. A sociological analysis of mental illness including the following areas: the history of mental illness in society, etiological explanations of mental illness, epidemiology of mental illness, mental health professions, law and psychiatry, community mental health, and mental health and social policy.
- SOC 4113G Sociology of Aging and Death** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An examination of the personal, interpersonal, and cultural dimensions of aging, together with an appraisal of the meaning and consequences of death in America. While the emphasis is contemporary, some historical and cross-cultural materials are also used. Attention is drawn to personal and societal needs associated with aging and death.
- SOC 4124G Social Stratification** 3 cr.  
Prerequisite: SOC 1051 and 2708 or consent of department. A study of classes, status groups, castes, and social mobility.
- SOC 4130G Sociology of Women** 3 cr.  
Prerequisite: SOC 1051 or consent of department. This course examines the position of women in society. Such topics as sex role socialization, sexuality, reproductive rights, housework, childrearing, and violence against women are examined in terms of the social, economic, and political bases for gender differences.
- SOC 4152G Social Welfare Institutions** 3 cr.  
An analysis of social welfare institutions, both private and public, in fields of philanthropy, employment, insurance, health care, housing, urban renewal, poverty, crime prevention, and human development.
- SOC 4161G Political Sociology** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An examination of social institutions and political ideologies under conditions of early and late modernity. Particular attention is given to the new types of social and political challenges created by globalization and such human-created risks as global climate change and bioterrorism. Additional topics include the relation between deliberative democracy and community, the continuing influence of tradition and fundamentalism, and international efforts to promote gender equity and human rights.
- SOC 4180G Women and Work** 3 cr.  
Prerequisite: SOC 1051 or consent of the department. Topics include an overview of the status of women, market work, including labor force participation, wages and wage discrimination, occupational segregation, equal pay for work of comparable worth, and domestic work.
- SOC 4788G Social Statistics** 3 cr.  
Fall semester. Prerequisite: SOC 2707 or equivalent. A survey of inductive statistical methods of analyzing social science data. Topics include probability, sampling distributions, parametric and non-parametric tests of significance, linear regression and correlation, and analyses of variance and covariance.
- SOC 4871G Sociology of the Environment** 3 cr.  
Prerequisite: SOC 2871 or consent of instructor. Examines the way in which major sociology theories have been used to analyze contemporary environmental problems. Three to five theoretical perspectives will be covered each semester; application of these theories to environmental issues will be illustrated through in-depth exploration of several case studies of particular environmental controversies or crises. The theoretical perspectives to be covered in a particular semester will be chosen from the following: attitudinal theory, community theory, conflict theory, dramaturgical theory, feminist theory, organizational theory, social movements theory, and symbolic interactionism.
- SOC 4881G The Urban Community** 3 cr.  
An analysis of the major subcommunities and subcultures to be found in any large urban complex. Special attention will be given to neighborhoods, ethnic and racial groups, suburbs, and religious and occupational subcultures.

- SOC 4882G Urban Issues: Planning and Social Policy** 3 cr.  
This course will deal with theory, policy, and methods in urban planning. It will also focus on special issues of contemporary problems, such as housing, urban renewal, and regional government.
- SOC 4903G Population Problems** 3 cr.  
Prerequisite: Sociology 1051 or consent of department. The study of population and social problems associated with changes in migration, fertility, and mortality. Topics include the relationships among rapid population growth and world food supply, world energy supply, and economic development.
- SOC 4911G Drugs and Society** 3 cr.  
This course approaches the subject of drugs from a multidisciplinary perspective, with attention given to the biological, psychological, sociological, and educational implications of drug use and abuse in American society. Special concern will be given to the analysis of the values as they relate to the development and elaboration of subcultures and countercultures whose lifestyles reflect the use of and/or dependency upon drugs.
- SOC 4921G Criminology** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An analysis of causes, consequences, and control of crime in American society. Special attention is given to the theoretical explanations of crime and the special methodological problems in studying criminal behavior.
- SOC 4954G Juvenile Delinquency** 3 cr.  
Prerequisite: SOC 1051 or consent of department. An examination of the theoretical approaches to juvenile delinquency, alternative treatment programs, and the juvenile justice system, with primary focus on modern American society.
- Social Science**
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- SOSC 1901 PL: Introduction to Paralegal Studies** 3 cr.  
A course for those considering the paralegal profession. Topics include: legal principles of substantive and procedural law, organization and functions of the court system, and the parameters of the paralegal's responsibilities in the practice of law.
- SOSC 2003 PL: Legal Interviewing and Investigation** 3 cr.  
Instruction in conducting factual investigations in civil and criminal cases through client and witness interviews, public records, and other research options. Psychological and other interviewing techniques. Investigation into negligence and criminal conduct.
- SOSC 2010 PL: Family Law** 3 cr.  
Louisiana law on marriage, marital regimes, marital property, community property, parent/child relationships, illegitimacy, paternity, adoption, dissolution of marriage by annulment, separation and divorce, and family law application by the Louisiana court system.
- SOSC 2020 PL: Real Estate Procedures** 3 cr.  
Residential and commercial real estate transactions. Case law and statutory law covering ownership of movable and immovable property, agency, purchase agreements, redhibition and title warranty, servitudes, successions, liens, mortgages, etc. are all covered from the aspect of paralegal duties and responsibilities.
- SOSC 2022 PL: Abstracting Techniques** 3 cr.  
Prerequisite: SOSC 1905. A review of Louisiana substantive law relating to residential real estate and mineral law, its applications in the preparation of abstracts, compilation of information necessary for closing a sale of real estate, and preparation of preliminary abstracts of title. Students are required to conduct a title search and prepare the necessary documents for closing a sale of real estate.
- SOSC 2030 PL: Taxation Procedures** 3 cr.  
An introduction to federal and state taxation, including income, estate, gift sales, and use taxes. Emphasis is placed on recent legislative developments and the preparation of returns and schedules, including the audit process, contesting procedures, and administrative procedures of the IRS.
- SOSC 2032 PL: Commercial and Banking Laws for Paralegals** 3 cr.  
An overview of contracts, commercial paper, security rights, and laws and regulations governing financial institutions. Emphasis is on federal and Louisiana statutes and regulations governing lenders and loan terms. The course requires drafting a variety of agreements, letters, contracts, and other financing documents.
- SOSC 2034 PL: Business Associations** 3 cr.  
The characteristics of sole proprietorship, general and limited partnerships, and corporations is combined with a study of specific tasks such as interviewing business clients, drafting agreements, articles of incorporation, etc. Emphasis in on the role of the paralegal.
- SOSC 2044 PL: Medical Malpractice** 3 cr.  
An introductory course in the substantive issues and practical procedures of the Medical Malpractice Act, covering those areas where a paralegal handles analysis of hospital/medical records, subpoenas and use of medical records in the discovery process, preparation of discovery documents, medical panel submission requirements, and other litigation.
- SOSC 2050 PL: Constitutional/Criminal Procedure** 3 cr.  
The rules of criminal procedure as developed by the United States Constitution and the State of Louisiana's Constitution, including arrest, interrogation, search and seizure, constitutional rules in the courtroom, grand juries, right to counsel, and order of criminal trials.
- SOSC 2052 PL: Evidence** 3 cr.  
Prerequisite: SOSC 2005. The general rules of evidence as promulgated for the State of Louisiana in January 1989. Rules regarding hearsay, character evidence, evidence of other crimes, expert testimony, and types of evidence admissible and non-admissible in federal and state court systems, with special emphasis on paralegal trial preparation.
- SOSC 2090 Topics in Women's Studies** 3 cr.  
An open topics approach to the role of women. May be repeated once for credit.
- SOSC 2091 PL: Special Topics in Paralegal Studies** 3 cr.  
Topic will vary from semester to semester. The course will concentrate on a particular area of legal practice. May be repeated once for credit.
- SOSC 3036 PL: Bankruptcy Practice** 3 cr.  
This course is designed to prepare paralegal students to assist attorneys representing debtors and creditors in bankruptcy. Emphasis on procedures and their practical applications, including but not limited to, interviewing clients, preparing and reviewing schedules, preparing and filing claims, and motions. The course reviews the U.S. Trustee System and the federal bankruptcy code including amendments and related provisions.
- SOSC 3040 PL: Torts** 3 cr.  
Prerequisites: SOSC 1907 and 1911. An introduction to substantive Louisiana tort law with emphasis on the elements of intentional torts, negligence, products liability, defenses, and damages. Practical and procedural applications to assist in either defense or plaintiff personal injury litigation.

**SOSC 3088 PL: Paralegal Internship Program** 3 cr.  
Prerequisites: SOSC 1901 1903 1905 1907 1911 and a 3.0 grade point average. An advanced clinical practicum. Student intern works a minimum of ten hours per week in a legal setting (law office, law-related government agency, non-profit legal agency, court system, etc.) under the on-site direct supervision of attorney or senior paralegal. This course may be repeated once for credit.

**SOSC 3091 PL: Special Topics in Paralegal Studies** 3 cr.  
Topic will vary from semester to semester. The course will concentrate on a particular field of legal practice. May be repeated once for credit.

## Spanish

**SPAN 2003 Basic Spanish for Hispanic Students** 3 cr.  
Prerequisite: consent of department. Reading, writing, and vocabulary-building exercises especially prepared for the student whose home language is Spanish.

**SPAN 2004 Intermediate Spanish for Hispanic Students** 3 cr.  
Prerequisite: Spanish 2003 or consent of department. Reading, writing, and vocabulary-building exercises especially prepared for the student whose home language is Spanish.

**SPAN 3002 Phonetics** 3 cr.  
Phonetic principles applied specifically to an analysis of the phonetic system of Spanish. Intensive practice in the language laboratory, ear training, transcriptions, and corrective exercises.

**SPAN 3005 Romance Linguistics** 3 cr.  
(SPAN 3005 and FREN 3005 are cross-listed) Comparative study of the history, phonology, morphology, and syntax of the principal Romance languages.

**SPAN 3191 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated but combined credit may not exceed six semester hours.

**SPAN 3192 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated but combined credit may not exceed six semester hours.

**SPAN 3193 Independent Work** 1 cr.  
Prerequisite: consent of department. Readings, conferences, and papers under the direction of a member of the faculty. The course allows the student to correlate and supplement the work covered in the departmental courses. Each course may be repeated but combined credit may not exceed six semester hours.

**SPAN 3194 Internship in Spanish** 1 cr.  
Prerequisite: consent of Spanish undergraduate coordinator. The internship project will receive written evaluation from the outside supervisor of the project and from the undergraduate coordinator. A student may earn no more than a total of three credits in the undergraduate curriculum for an internship project or projects. Students receiving three credits will work a minimum of eight hours per week; two credits, six hours per week; one credit, three hours per week.

**SPAN 3195 Internship in Spanish** 1 cr.  
Prerequisite: consent of Spanish undergraduate coordinator. The internship project will receive written evaluation from the outside supervisor of the project and from the undergraduate coordinator. A student may earn no more than a total of three credits in

the undergraduate curriculum for an internship project or projects. Students receiving three credits will work a minimum of eight hours per week; two credits, six hours per week; one credit, three hours per week.

**SPAN 3196 Internship in Spanish** 1 cr.  
Prerequisite: consent of Spanish undergraduate coordinator. The internship project will receive written evaluation from the outside supervisor of the project and from the undergraduate coordinator. A student may earn no more than a total of three credits in the undergraduate curriculum for an internship project or projects. Students receiving three credits will work a minimum of eight hours per week; two credits, six hours per week; one credit, three hours per week.

**SPAN 3199 Independent Work for Honors Students** 3 cr.  
Prerequisite: consent of department and Director of the University Honors Program. Directed research culminating in a written thesis to meet the requirements for graduation with Honors in Spanish, and if appropriate, University Honors.

**SPAN 3402 Masterpieces of Spanish and Spanish-American Literature in Translation** 3 cr.  
(Open to all students, including Spanish and Spanish Education majors, for degree credit as an elective.) Different Spanish or Spanish-American works in translation are chosen each time for reading, analysis, and discussion.

**SPAN 4007 Spanish Dialectology** 3 cr.  
A study of the phonology, morphology, syntax, and vocabulary of the different regions of the Spanish-speaking world.

**SPAN 4015 History of the Spanish Language** 3 cr.  
A general survey of the development of the Spanish language from its beginnings to the present day with particular attention to the phonology, morphology, and syntax of old Spanish.

**SPAN 4031 Advanced Spanish Conversation** 3 cr.  
Prerequisite: SPAN 3031 or equivalent. Intensive practice in the spoken language: conversation, oral discussions, interpretations, and reports. Conducted in Spanish. Native speakers may enroll with the instructor's prior approval.

**SPAN 4041 Problems of Grammatical Analysis** 3 cr.  
Prerequisite: SPAN 3041 or equivalent. Problems of grammatical analysis and contrastive stylistics are discussed on a basis that combines traditional approaches and more recent theories. Application in translation exercises, from and into Spanish, and introduction to literary translation.

**SPAN 4051 Business Spanish** 3 cr.  
Prerequisite: language proficiency at the 2002 level. Study of fundamental sentence structure and specialized terminology and idioms related to business needs and correspondence. Practice in standard business correspondence. Oral exposés and conversations dealing with standard business situations and Spanish economies. Readings from current magazines in economics and international business.

**SPAN 4110 Medieval Spanish Literature** 3 cr.  
Readings in the principal genres from the beginnings to 1500.

**SPAN 4122 Spanish Prose of the Golden Age** 3 cr.  
Studies in the chivalric, pastoral, and picaresque prose of the sixteenth and seventeenth centuries, with emphasis on Cervantes.

**SPAN 4124 Dramatic Literature of the Golden Age** 3 cr.  
The development of the Spanish comedia with emphasis on Lope de Vega, Tirso de Molina, and Calderon de la Barca.

**SPAN 4140 Spanish Literature from 1700 to 1850** 3 cr.  
Representative writers of the period with particular stress on literary currents

SPAN 4155 Spanish Literature from 1850 to the Generation of 1898	3 cr.	SPAN 6191 Studies in Golden Age Literature (May be repeated once for credit.)	3 cr.
Representative writers of the period with particular stress on literary currents.		SPAN 6192 Studies in Spanish Literature 1700-1850 (May be repeated once for credit.)	3 cr.
SPAN 4160 The Writers of the Generation of 1898	3 cr.	SPAN 6193 Studies in Spanish Literature 1850-1898 (May be repeated once for credit.)	3 cr.
Extensive critical readings in and reports on the major authors of the generation of 1898.		SPAN 6194 Studies in Spanish Literature of the Generation of 1898 (May be repeated once for credit.)	3 cr.
SPAN 4172 Spanish-American Prose	3 cr.	SPAN 6195 Studies in Contemporary Spanish Literature (May be repeated once for credit.)	3 cr.
A course in prose literature from the early chronicles through the contemporary novel.		SPAN 6196 Studies in Spanish-American Literature to 1810 (May be repeated once for credit.)	3 cr.
SPAN 4175 Studies in Spanish-American Fiction	3 cr.	SPAN 6197 Studies in Spanish-American Literature After 1810 (May be repeated once for credit.)	3 cr.
The works of a specific novelist or group of novels on a similar theme studied as a reflection of social and cultural conditions in a country, countries, or geographical area. Discussions in English.		SPAN 6198 Studies in Spanish Literature (May be repeated once for credit.)	3 cr.
SPAN 4176 Spanish-American Poetry	3 cr.	SPAN 6205 Spanish Thought	3 cr.
A study of Spanish-American poetry with emphasis on the Modernista and the contemporary period.		History of ideas in Spain. Study of texts constituting significant contributions to political, social, scientific, religious, philosophical, and aesthetic discourse.	
SPAN 4180 Contemporary Spanish Literature	3 cr.	SPAN 6207 Spanish-American Thought	3 cr.
Study of significant writings of contemporary authors; post-war trends; and the influence of the Civil War on Spanish writers.		This course examines the evolution of Spanish-American thought with reference to the development of political, economic, social, and cultural institutions. Throughout the course, past developments will be related to contemporary issues.	
SPAN 4201 Spanish Civilization I	3 cr.	SPAN 6265 Contemporary Hispanic Society and Institutions	3 cr.
A study of Spanish culture and civilization (history, fine arts, music, architecture, history of ideas, national character, etc.) from its origins through the reign of Ferdinand and Isabella. Readings and discussions in Spanish.		A comprehensive study of Spanish speaking countries today: political, social, economic, and religious institutions, intellectual life, contemporary issues. Topics include: A) Spain; B) Andean countries, (Colombia, Ecuador, Peru, and Bolivia); C) Caribbean (Cuba, Dominican Republic, Puerto Rico, and Caribbean coasts of Venezuela, Colombia, and the nations of Central America); D) River Plate Region (Argentina, Chile, Paraguay, and Uruguay).	
SPAN 4202 Spanish Civilization II	3 cr.	SPAN 6295 Studies in Hispanic Culture and Civilization (May be repeated once for credit.)	3 cr.
A continuation of SPAN 4201 stressing the cultural history of Spain from the Habsburg dynasty to the present day. Readings and discussions in Spanish.		SPAN 6397 Directed Study	3 cr.
SPAN 4203 Spanish American Civilization I	3 cr.	Readings, conferences, reports, and a research paper under the direction of a member of the graduate faculty. (May be repeated once for credit.)	
Study of Spanish American culture and civilization (history, fine arts, music, architecture, history of ideas, etc.) from pre-colonial to the modern period. Readings and discussions in Spanish.		SPAN 7000 Thesis Research	1-9 cr.
SPAN 4204 Spanish American Civilization II	3 cr.	To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned	
Study of Spanish American culture and civilization (history, fine arts, music, architecture, history of ideas, etc.) from the modern period to the contemporary period. Readings and discussions in Spanish.		SPAN 7040 Examination or Thesis Only	0 cr.
SPAN 4265 Contemporary Spanish Culture	3 cr.	Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.	
A study of Spanish intellectual and cultural life today: social, economic, and geographical factors; the country and its attitudes. Conducted in Spanish.		SPAN 4007G Spanish Dialectology	3 cr.
SPAN 4400 Children's Literature in Spanish	3 cr.	A study of the phonology, morphology, syntax, and vocabulary of the different regions of the Spanish-speaking world.	
A study of the cultural heritage of stories songs rhymes and games. Selection evaluation and use of books and materials for children.		SPAN 4015G History of the Spanish Language	3 cr.
SPAN 6003 Spanish "Comentario de texto"	3 cr.	A general survey of the development of the Spanish language from its beginnings to the present day with particular attention to the phonology, morphology, and syntax of old Spanish.	
The theory and practice of "comentario de texto"- textual exegesis-in Spanish. In addition to purely literary texts the method of "comentario de texto" will be applied to other kinds of writing.			
SPAN 6007 Spanish Linguistics	3 cr.		
Advanced study of Spanish phonology, morphosyntax, and semantics within the framework of recent linguistic models, including consideration of solution of major descriptive problems proposed from at least 1900 to the present.			
SPAN 6097 Studies in Spanish Linguistics (May be repeated once for credit.)	3 cr.		
SPAN 6190 Studies in Medieval Spanish Literature (May be repeated once for credit.)	3 cr.		

- SPAN 4031G Advanced Spanish Conversation** 3 cr.  
Prerequisite: SPAN 3031 or equivalent. Intensive practice in the spoken language: conversation, oral discussions, interpretations, and reports. Conducted in Spanish. Native speakers may enroll with the instructor's prior approval.
- SPAN 4041G Problems of Grammatical Analysis** 3 cr.  
Prerequisite: SPAN 3041 or equivalent. Problems of grammatical analysis and contrastive stylistics are discussed on a basis that combines traditional approaches and more recent theories. Application in translation exercises, from and into Spanish, and introduction to literary translation.
- SPAN 4051G Business Spanish** 3 cr.  
Prerequisite: language proficiency at the 2002 level. Study of fundamental sentence structure and specialized terminology and idioms related to business needs and correspondence. Practice in standard business correspondence. Oral exposés and conversations dealing with standard business situations and Spanish economies. Readings from current magazines in economics and international business.
- SPAN 4110G Medieval Spanish Literature** 3 cr.  
Readings in the principal genres from the beginnings to 1500.
- SPAN 4122G Spanish Prose of the Golden Age** 3 cr.  
Studies in the chivalric, pastoral, and picaresque prose of the sixteenth and seventeenth centuries, with emphasis on Cervantes.
- SPAN 4124G Dramatic Literature of the Golden Age** 3 cr.  
The development of the Spanish comedia with emphasis on Lope de Vega, Tirso de Molina, and Calderon de la Barca.
- SPAN 4140G Spanish Literature from 1700 to 1850** 3 cr.  
Representative writers of the period with particular stress on literary currents
- SPAN 4155G Spanish Literature from 1850 to the Generation of 1898** 3 cr.  
Representative writers of the period with particular stress on literary currents.
- SPAN 4160G The Writers of the Generation of 1898** 3 cr.  
Extensive critical readings in and reports on the major authors of the generation of 1898.
- SPAN 4172G Spanish-American Prose** 3 cr.  
A course in prose literature from the early chronicles through the contemporary novel.
- SPAN 4175G Studies in Spanish-American Fiction** 3 cr.  
The works of a specific novelist or group of novels on a similar theme studied as a reflection of social and cultural conditions in a country, countries, or geographical area. Discussions in English.
- SPAN 4176G Spanish-American Poetry** 3 cr.  
A study of Spanish-American poetry with emphasis on the Modernista and the contemporary period.
- SPAN 4180G Contemporary Spanish Literature** 3 cr.  
Study of significant writings of contemporary authors; post-war trends; and the influence of the Civil War on Spanish writers.
- SPAN 4201G Spanish Civilization I** 3 cr.  
A study of Spanish culture and civilization (history, fine arts, music, architecture, history of ideas, national character, etc.) from its origins through the reign of Ferdinand and Isabella. Readings and discussions in Spanish.
- SPAN 4202G Spanish Civilization II** 3 cr.  
A continuation of SPAN 4201 stressing the cultural history of Spain from the Habsburg dynasty to the present day. Readings and discussions in Spanish.
- SPAN 4203G Spanish American Civilization I** 3 cr.  
Study of Spanish American culture and civilization (history, fine arts, music, architecture, history of ideas, etc.) from pre-colonial to the modern period. Readings and discussions in Spanish.
- SPAN 4204G Spanish American Civilization II** 3 cr.  
Study of Spanish American culture and civilization (history, fine arts, music, architecture, history of ideas, etc.) from the modern period to the contemporary period. Readings and discussions in Spanish.
- SPAN 4265G Contemporary Spanish Culture** 3 cr.  
A study of Spanish intellectual and cultural life today: social, economic, and geographical factors; the country and its attitudes. Conducted in Spanish.
- SPAN 4400G Children's Literature in Spanish** 3 cr.  
A study of the cultural heritage of stories songs rhymes and games. Selection evaluation and use of books and materials for children.

### Urban Studies

- URBN 2999 Public Service** 1 cr.  
Offered each semester. Prerequisite: approval of the University Honors Program. Participation in an on-going public service project as an unpaid volunteer to learn about service work. Participants are expected to contribute an average of three hours per week at times mutually agreeable to the individual and the organization.
- URBN 4000 The New Orleans Metropolitan Region** 3 cr.  
Prerequisite: consent of school. A study of social, cultural, economic, and political history and organization of the New Orleans region from the point of view of systematic social planning.
- URBN 4001 Comparative Urban Planning** 3 cr.  
Prerequisite: consent of school. An introduction to the development patterns and processes of great cities in a context emphasizing comparisons with New Orleans. The course will focus on the planning issue with which these cities have dealt and look to the future concerns of the city and region with which the planners must reckon. Field work will be an integral part of the course, and will require students to study in the host country. Cities selected for comparative study will be varied to cover North American, South American, Asian, African, and European examples, with one semester devoted to an in-depth study of a particular city. May be repeated once for credit with approval of the school.
- URBN 4002 Introduction to Urban Studies: the Urban Form** 3 cr.  
Prerequisite: consent of college. An overview of the spatial and physical dimensions of the city. Historical patterns of human settlements will be examined, but the main focus is on the American post-industrial city and suburb and how they have evolved in relation to one another.
- URBN 4010 Introduction to Historic Preservation** 3 cr.  
The introduction to Historic Preservation provides a broad overview of the historical, architectural, political, social economic, administrative and legal aspects of historic preservation.
- URBN 4061 Introductory Transportation Planning** 3 cr.  
This course provides an introduction to the practice of urban transportation planning. The course concentrates primarily on providing a general over-view of the transportation planning process. Emphasis is placed on specific elements of that process and specific components of the urban transportation system.
- URBN 4070 Development Impact Assessment** 3 cr.  
Prerequisite: URBN 4600 or consent of department. This course reviews the major techniques used in evaluating the socioeconomic and fiscal impacts of land development projects on communities. Case studies will be used for illustration.

- URBN 4071 Historic Preservation Law** 3 cr.  
This course examines the evolution of Historic preservation law in the United States. Emphasis is placed on policies, court decisions and laws that impact the cultural and historic resources of Louisiana and particularly the City of New Orleans. This course analyzes the legal techniques and strategies that developers and preservationists have used to achieve their objectives. Enrollment does not require prior knowledge of the law.
- URBN 4140 Environmental Planning** 3 cr.  
Spring semester. This course focuses on the impact of public and private planning, policies, and programs on the natural and man-made environment of our urban regions. The subject matter includes environmental law, environmental impact statements, environmental politics, land use policy, air and water resources, energy policy, and solid wastes.
- URBN 4145 Coastal Zone Planning and Administration** 3 cr.  
Coastal zones are valuable natural resource areas that are fragile, in great demand, and in danger of system collapse. This course develops the concepts of coastal resources, examines the many strategies for resource management and administration, and analyzes guidelines and standards for planning activities in the coastal zone.
- URBN 4150 Planning for Natural Hazards** 3 cr.  
This course examines and analyzes the occurrence, magnitude, and distribution of natural hazards and discusses appropriate public policy responses in order to protect public safety and to reduce physical and economic damage.
- URBN 4160 Development of Environmental Management** 3 cr.  
Seminar on techniques for managing urban development to further objectives specified in comprehensive development plans and to conserve environmental resources. Regulatory, public investment, incentive, and other policy instruments used in land use and environmental management are covered.
- URBN 4200 American City Planning** 3 cr.  
Fall semester. Prerequisite: consent of school. This course will deal with the evolution of urban and regional planning in the United States with particular focus on the last century. Emphasis will be placed on specific issues, programs, projects, and personalities instrumental in shaping the form of the American landscape and cityscape and in developing urban planning as a profession.
- URBN 4300 The Dynamics of the Administration of Large Cities: A Case Study Approach** 3 cr.  
Prerequisite: POLI 4210. This introductory course is to familiarize students with the basic components and dynamics of large municipal governments. Topics to be covered include: governmental structural forms, transitions between administrations, personnel selection, and budgeting, program development, master planning program implementation, city services, industrial development, and media considerations. These topics are offered so that students may understand how they are interrelated in a synergistic way as government operates.
- URBN 4400 Introduction to Preservation Planning** 3 cr.  
Prerequisite: consent of school. This course will provide an introduction to the urban planning techniques used for preserving historic buildings, neighborhoods, and districts within American cities.
- URBN 4500 Energy Planning for Cities and Regions** 3 cr.  
Prerequisite: consent of school. An introduction to national and Louisiana energy demands, resources, impacts, technologies, and policies especially as related to plan formulation in cities and regions. Particular emphasis is given to the energy relationship between New Orleans and the Louisiana coastal ecosystem.
- URBN 4603 Research in New Orleans History** 3 cr.  
(HIST 4603 and URBN 4603 are cross-listed) Prerequisite: HIST 2603 or HIST 4543 or consent of instructor. A detailed survey of qualitative research techniques, their application to local and urban history, and the preparation of a written project based on primary research in New Orleans history.
- URBN 4660 Negotiation and Mediation for Planners** 3 cr.  
Prerequisite: Consent of College of Urban and Public Affairs. This course uses theory and gaming materials to build negotiation and mediation skills. The particular lessons covered include: the importance of assessing one's Best Alternative to a Negotiated Agreement (BATNA); the preconditions for collaborative problem solving; the application of utility theory to negotiation analysis; the significance of coalition building; the value of packaging options that trade across issues; criteria for evaluating negotiation outcomes; strategies for dealing with uncertainty and risk; the role of the media in public decision making; and the responsibility of facilitators, mediators, and dispute resolves. These lessons ought to be directly transferable to a student's current or future planning practice.
- URBN 4700 Urban Aesthetics and Design Analysis** 3 cr.  
This introductory design course deals with the impact, inventory, observation, analysis, and critique of the complex urban environment from a designer's viewpoint. Equal emphasis shall be given to the various component parts of the physical surroundings and their cumulative interactions. Urban and inventory, observation, analysis, and critique of the complex urban environment from a designer's viewpoint. Equal emphasis shall be given to the various component parts of the physical surroundings and their cumulative interactions. Urban and suburban structures, plazas, recreation areas, malls, streetscapes, landscapes, the neighborhood, and the private residence shall be considered.
- URBN 4710 Urbanism and Urban Design** 3 cr.  
Offered each semester. Prerequisite: consent of school. This course will deal with the history of urban design emerging methodologies analytical frameworks instruments and strategies the decision-making processes in urban design and the roles of urban designers.
- URBN 4800 Studies in Special Urban Problems** 3 cr.  
Prerequisite: consent of school. This course is a study of urbanization and population the city as a social and cultural environment and social problems of cities.
- URBN 4801 Introductory Urban Analysis: the Use of Computers and Systems Analysis** 3 cr.  
Fall semester. Prerequisite: SOC 4788 or the equivalent. This course is an introduction to the use of systems methodology in urban analysis. Particular emphasis is given to the application of computer technology to urban problems. Students will learn to use effectively an interactive computer to facilitate research in urban problems.
- URBN 4900 Independent Study** 3 cr.  
Prerequisite: consent of school. Independent research under the direction of a designated member of the faculty. May be repeated once. Maximum of six credit hours allowed. Not for graduate credit.
- URBN 6000 Seminal Research in Urban Studies** 3 cr.  
Prerequisite: consent of college. This course is to provide students with an in-depth understanding of a particular facet of the interdisciplinary field of urban studies. It will do so by requiring the students to critically evaluate Seminal works in urban studies. The topic of the seminar will vary from year to year depending on the background and interest of the instructor.

- URBN 6010 Planning for Neighborhoods and Smaller Communities** 3 cr.  
Prerequisite: URBN 4600 or consent of school. This course examines the forces that have shaped America's neighborhoods and smaller communities, the unique problems that face them, and planning strategies available for their resolution.
- URBN 6020 Methods of Urban and Regional Analysis I** 3 cr.  
Prerequisite: URBN 6005 or instructor's permission. An introduction to the application of quantitative analytical method used by professional planners and policy makers in urban and regional contexts. Topics include: population estimation and forecasting, economic forecasting, locational analysis, forecasting for transportation, housing, shopping, and recreational facilities, as well as project evaluation and monitoring. An emphasis will be placed on actual problem solving rather than an understanding of the pure mathematical basis of the techniques.
- URBN 6051 Housing and Community Development** 3 cr.  
Prerequisite: consent of school. This course is designed to give the student an introduction to the complex areas of housing and community development. Emphasis will be placed on examination of the federal role and the local response in implementing programs.
- URBN 6061 Transportation Planning** 3 cr.  
Prerequisites: URBN 6020 intermediate statistics and calculus, or consent of school. A seminar on the quantitative aspects of transportation planning. Included in the course material will be: transportation network concepts, minimum path through network algorithms, optimal network problems, trip distribution (gravity) models, and urban land use models.
- URBN 6121 Methods of Urban and Regional Analysis II** 3 cr.  
Prerequisite: URBN 6020 or consent of school. A seminar on application of advanced quantitative analytic methods in regional and urban planning. The following topics will be presented: industrial complex analysis, regional and interregional linear programming, gravity models, game theory, concepts of regional development and regional conflict and cooperation analysis.
- URBN 6130 Advanced Social Planning** 3 cr.  
Prerequisite: URBN 4030 or consent of college. The emphasis of this course is on current urban problems in urban development and the planning methods and strategies used to meet the needs of diverse socio-economic groups. A single problem focus will be developed and possible solutions developed.
- URBN 6150 Administration of Urban Public Service Organizations** 3 cr.  
Prerequisite: POLI 6110 or the equivalent. This course covers the administration of public service delivery organizations in a complex urban environment. Topics to be covered include use of budget information systems, monitoring of organizational performance, and problems of implementation. Case studies will be used extensively.
- URBN 6165 Urban Public Policy Analysis** 3 cr.  
Spring semester. Prerequisite: consent of school. A seminar on benefit-cost analysis as applied to decisions of public policy (especially with regard to alternative public projects and programs). Subject matter will include: traditional benefit-cost analysis including notions of present value, externalities, and secondary effects; and extensions of benefit-cost analysis such as the planning balance sheet, goals achievement matrix, and social indicator analysis.
- URBN 6175 Case Studies in the Land Development Process** 3 cr.  
Prerequisite: URBN 6170. This course will cover, by actual student practice, project packaging in the land development process. In addition to financial considerations (cash flow, leases, rents, subordination, and funding) this course will confront community relations and development, regulatory matters, market feasibility studies, politics, public bids, land exchanges, and other topics by analyzing carefully constructed cases of land development modeled after real-world developments.
- URBN 6201 Urban Program Evaluation** 3 cr.  
The course examines techniques, procedures, and limitations of program evaluation. Topics covered include the planning and organizing of project evaluations, the writing of evaluation designs, evaluation methodologies, data collection and verification, analysis and interpretation of findings. The theme of the course is the necessity for accountability in urban programs, a function provided by evaluation.
- URBN 6300 Managing Change Public Organizations** 3 cr.  
Prerequisite: consent of department. A seminar on the ways in which public organizations approach and resist change. The theme is how planning, budgeting, and evaluation are used by administrators to bring about change.
- URBN 6400 Urban Criminal Justice Systems** 3 cr.  
Criminal Justice Planning and Administrative Systems are assessed in the context of the urban environment. The course reviews conventional techniques of crime analysis (and why they fail), the relationship of crime to the growth of a bureaucratic society, and the requirements for planning in such a context.
- URBN 6401 Urban Public Works Planning** 3 cr.  
Prerequisite: consent of school. An introduction to the public works functions in the urban environment. The course will examine the organization and operation of urban public works activities. Case studies of actual public works problems will be used to supplement lecture material.
- URBN 6500 Urban Planning Practice in Developing Nations** 3 cr.  
Prerequisites: URBN 4600 or consent of department. This course presents a study of urban and regional planning practice in developing countries. Urban development issues and planning paradigms will be discussed. Selected Less Developed Countries (LDC's) will be examined in detail.
- URBN 6510 Urban-Rural Issues in Developing Countries** 3 cr.  
Prerequisite: GEOG 4630 or URBN 4030 or consent of department. This seminar will explore the relationship between urbanization and the development process, with primary emphasis on the ways in which the content and outcomes of public policies affect the distribution of population and wealth. Issues to be covered include regional imbalances, migration, labor mobility, and housing.
- URBN 6601 Seminar: Urban Planning Models** 3 cr.  
Spring semester. Prerequisite: consent of school. This seminar will be an in-depth study of advanced concepts and techniques of urban planning.
- URBN 6605 Seminar in Land Use Analysis** 3 cr.  
(GEOG 6605 and URBN 6605 are cross-listed) Prerequisite: Geography 6001 or consent of department. Intensive research into selected rural and/or urban land-use problems in their environmental and historical contexts. Course may be repeated once for credit.
- URBN 6650 Recreational Planning** 3 cr.  
Prerequisite: consent of school. This course deals with the impact of urbanization on the field of recreation. Recreation planning will be discussed in relationship to the overall comprehensive planning fabric specifically as it relates to the formulation of its major components, i.e., goals, needs, methodologies, surveying techniques, administration, financing, and site analysis.

- URBN 6700 Urban Spatial Analysis** 3 cr.  
Prerequisite: consent of school. This course is designed to familiarize the student with spatial models and geographic techniques of metropolitan area analysis. It includes a systematic study of external and internal spatial relationships of cities and city systems. The urban field is examined in terms of images, patterns, processes, networks, communities, activities, problems, and prospects.
- URBN 6720 Practicum in Urban and Regional Planning** 3 cr.  
The course will focus on the applied aspects of the urban and regional planning profession. Project(s) will be identified and students will work as a team to complete the work. The goal is to develop a professional group report.
- URBN 6801 Seminar: Urban Analysis-Computers and Simulation** 3 cr.  
Prerequisite: consent of school. This is a methodology seminar in urban research, specifically emphasizing the use of computers and simulation techniques.
- URBN 6803 Proseminar in Urban History: Social and Cultural Change** 3 cr.  
(URBN 6803, URBN 6805, HIST 6803, and HIST 6805 are cross-listed) Prerequisite: URBN 6850 or HIST 4543 or consent of instructor. Intensive reading in urban, social, and cultural change. Focus will be on American, European, and/or Third World urban development, from the founding of initial settlements to the present day. Discussions, conferences, short reports, and essays will be required. Each course may be repeated once for credit.
- URBN 6805 Proseminar in Urban History: Social and Cultural Change** 3 cr.  
(URBN 6803, URBN 6805, HIST 6803, and HIST 6805 are cross-listed) Prerequisite: URBN 6850 or HIST 4543 or consent of instructor. Intensive reading in urban, social, and cultural change. Focus will be on American, European, and/or Third World urban development, from the founding of initial settlements to the present day. Discussions, conferences, short reports, and essays will be required. Each course may be repeated once for credit.
- URBN 6830 Strategies for Urban Development** 3 cr.  
Prerequisite: URBN 6130, 6850 or consent of instructor. The purpose of the course is to expose students to research dealing with urban development issues, including economic development, land use (in terms of physical space), and social impact. Students will also examine a variety of disciplinary perspectives and methodological approaches. These disciplines will include political science, geography, sociology, history, and economics.
- URBN 6850 Seminar in Urban Studies** 3 cr.  
This course is designed to introduce graduate students to the history and evolution of urban studies as a field of endeavor. The methodological approaches, research questions, and theoretical constructs employed in urban studies will be examined. The course content is selected to examine the scope, the depth and breadth, of urban studies. It is required of first semester students in the Ph.D. program in Urban Studies. The course is open to graduate students not in the Ph.D. program with permission of the College of Urban and Public Affairs and the instructor.
- URBN 6871 Environmental Analysis** 3 cr.  
Prerequisite: URBN 6850 or consent of coordinators. An investigation of environmental problems from a sociological perspective, with an emphasis on environmental analysis, management, and policy.
- URBN 6900 Independent Study** 3 cr.  
Offered each semester. Independent research in the graduate student's area of specialization under the direction of a designated member of the graduate faculty. May be repeated for credit.
- URBN 6995 Practicum in Public Administration** 1-6 cr.  
(URBN 6995 and POLI 6995 are cross-listed) Prerequisite: consent of the Coordinator of Public Administration. Supervised internship or terminal project in public administration. Open only to Master of Public Administration students. Section number will correspond with credit to be earned.
- URBN 7000 Thesis Research** 1-9 cr.  
Offered each semester. To be repeated for credit until thesis is accepted. Section number will correspond with credit to be earned.
- URBN 7020 Research Design Seminar** 3 cr.  
Prerequisite: URBN 6850 or consent of department. The purpose of this course is to guide students with the cooperation of their dissertation advisers, through the development of their dissertation prospectus. The course will focus on the interrelationships between epistemology, theory, particular methods, a research design. Upon completion, students will be expected to have finished their dissertation prospectus and to have scheduled their thesis defense.
- URBN 7040 Examination or Thesis Only No credit** 0 cr.  
Open to students in a thesis program who have only (other than application for degree) the final typing and acceptance by the Graduate School of their thesis or dissertation or to students in a non-thesis program who have only (other than application for degree) to pass the final examination to complete graduation requirements.
- URBN 7050 Dissertation Research** 1-9 cr.  
Preparation of dissertation by Ph.D. candidates under direction of major professor and dissertation committee. Section number will correspond with credit to be earned. To be repeated for credit until dissertation is accepted.
- URBN 4000G The New Orleans Metropolitan Region** 3 cr.  
Prerequisite: consent of school. A study of social, cultural, economic, and political history and organization of the New Orleans region from the point of view of systematic social planning.
- URBN 4001G Comparative Urban Planning** 3 cr.  
Prerequisite: consent of school. An introduction to the development patterns and processes of great cities in a context emphasizing comparisons with New Orleans. The course will focus on the planning issue with which these cities have dealt and look to the future concerns of the city and region with which the planners must reckon. Field work will be an integral part of the course, and will require students to study in the host country. Cities selected for comparative study will be varied to cover North American, South American, Asian, African, and European examples, with one semester devoted to an in-depth study of a particular city. May be repeated once for credit with approval of the school.
- URBN 4002G Introduction to Urban Studies: the Urban Form** 3 cr.  
Prerequisite: consent of college. An overview of the spatial and physical dimensions of the city. Historical patterns of human settlements will be examined, but the main focus is on the American post-industrial city and suburb and how they have evolved in relation to one another.
- URBN 4010G Introduction to Historic Preservation** 3 cr.  
The introduction to Historic Preservation provides a broad overview of the historical, architectural, political, social economic, administrative and legal aspects of historic preservation.

- URBN 4061G Introductory Transportation Planning** 3 cr.  
This course provides an introduction to the practice of urban transportation planning. The course concentrates primarily on providing a general over-view of the transportation planning process. Emphasis is placed on specific elements of that process and specific components of the urban transportation system.
- URBN 4070G Development Impact Assessment** 3 cr.  
Prerequisite: URBN 4600 or consent of department. This course reviews the major techniques used in evaluating the socioeconomic and fiscal impacts of land development projects on communities. Case studies will be used for illustration.
- URBN 4071G Historic Preservation Law** 3 cr.  
This course examines the evolution of Historic preservation law in the United States. Emphasis is placed on policies, court decisions and laws that impact the cultural and historic resources of Louisiana and particularly the City of New Orleans. This course analyzes the legal techniques and strategies that developers and preservationists have used to achieve their objectives. Enrollment does not require prior knowledge of the law.
- URBN 4140G Environmental Planning** 3 cr.  
Spring semester. This course focuses on the impact of public and private planning, policies, and programs on the natural and man-made environment of our urban regions. The subject matter includes environmental law, environmental impact statements, environmental politics, land use policy, air and water resources, energy policy, and solid wastes.
- URBN 4145G Coastal Zone Planning and Administration** 3 cr.  
Coastal zones are valuable natural resource areas that are fragile, in great demand, and in danger of system collapse. This course develops the concepts of coastal resources, examines the many strategies for resource management and administration, and analyzes guidelines and standards for planning activities in the coastal zone.
- URBN 4150G Planning for Natural Hazards** 3 cr.  
This course examines and analyzes the occurrence, magnitude, and distribution of natural hazards and discusses appropriate public policy responses in order to protect public safety and to reduce physical and economic damage.
- URBN 4160G Development of Environmental Management** 3 cr.  
Seminar on techniques for managing urban development to further objectives specified in comprehensive development plans and to conserve environmental resources. Regulatory, public investment, incentive, and other policy instruments used in land use and environmental management are covered.
- URBN 4200G American City Planning** 3 cr.  
Fall semester. Prerequisite: consent of school. This course will deal with the evolution of urban and regional planning in the United States with particular focus on the last century. Emphasis will be placed on specific issues, programs, projects, and personalities instrumental in shaping the form of the American landscape and cityscape and in developing urban planning as a profession.
- URBN 4300G The Dynamics of the Administration of Large Cities: A Case Study Approach** 3 cr.  
Prerequisite: POLI 4210. This introductory course is to familiarize students with the basic components and dynamics of large municipal governments. Topics to be covered include: governmental structural forms, transitions between administrations, personnel selection, and budgeting, program development, master planning program implementation, city services, industrial development, and media considerations. These topics are offered so that students may understand how they are interrelated in a synergistic way as government operates.
- URBN 4400G Introduction to Preservation Planning** 3 cr.  
Prerequisite: consent of school. This course will provide an introduction to the urban planning techniques used for preserving historic buildings, neighborhoods, and districts within American cities.
- URBN 4500G Energy Planning for Cities and Regions** 3 cr.  
Prerequisite: consent of school. An introduction to national and Louisiana energy demands, resources, impacts, technologies, and policies especially as related to plan formulation in cities and regions. Particular emphasis is given to the energy relationship between New Orleans and the Louisiana coastal ecosystem.
- URBN 4603G Research in New Orleans History** 3 cr.  
(HIST 4603 and URBN 4603 are cross-listed) Prerequisite: HIST 2603 or HIST 4543 or consent of instructor. A detailed survey of qualitative research techniques, their application to local and urban history, and the preparation of a written project based on primary research in New Orleans history.
- URBN 4660G Negotiation and Mediation for Planners** 3 cr.  
Prerequisite: Consent of College of Urban and Public Affairs. This course uses theory and gaming materials to build negotiation and mediation skills. The particular lessons covered include: the importance of assessing one's Best Alternative to a Negotiated Agreement (BATNA); the preconditions for collaborative problem solving; the application of utility theory to negotiation analysis; the significance of coalition building; the value of packaging options that trade across issues; criteria for evaluating negotiation outcomes; strategies for dealing with uncertainty and risk; the role of the media in public decision making; and the responsibility of facilitators, mediators, and dispute resolves. These lessons ought to be directly transferable to a student's current or future planning practice.
- URBN 4700G Urban Aesthetics and Design Analysis** 3 cr.  
This introductory design course deals with the impact, inventory, observation, analysis, and critique of the complex urban environment from a designer's viewpoint. Equal emphasis shall be given to the various component parts of the physical surroundings and their cumulative interactions. Urban and inventory, observation, analysis, and critique of the complex urban environment from a designer's viewpoint. Equal emphasis shall be given to the various component parts of the physical surroundings and their cumulative interactions. Urban and suburban structures, plazas, recreation areas, malls, streetscapes, landscapes, the neighborhood, and the private residence shall be considered.
- URBN 4710G Urbanism and Urban Design** 3 cr.  
Offered each semester. Prerequisite: consent of school. This course will deal with the history of urban design emerging methodologies analytical frameworks instruments and strategies the decision-making processes in urban design and the roles of urban designers.
- URBN 4800G Studies in Special Urban Problems** 3 cr.  
Prerequisite: consent of school. This course is a study of urbanization and population the city as a social and cultural environment and social problems of cities.
- URBN 4801G Introductory Urban Analysis: the Use of Computers and Systems Analysis** 3 cr.  
Fall semester. Prerequisite: SOC 4788 or the equivalent. This course is an introduction to the use of systems methodology in urban analysis. Particular emphasis is given to the application of computer technology to urban problems. Students will learn to use effectively an interactive computer to facilitate research in urban problems.

**URBN 4900G Independent Study** 3 cr.  
Prerequisite: consent of school. Independent research under the direction of a designated member of the faculty. May be repeated once. Maximum of six credit hours allowed. Not for graduate credit.

### **Women's Studies**

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**WS 2010 Introduction to Women's Studies** 3 cr.  
An introduction to the social, historical, and cultural dimensions of women's role in society.

**WS 4070 Special Topics in Women, Literature, and Society** 3 cr.  
(WS 4070, ENGL 4070 and SOC 4070 are cross-listed) Prerequisite: ENGL 2378 or SOC 1051 or WS 2010 or consent of instructors. A team-taught, interdisciplinary study of women in literature and society. Variable topics include women and crime, women and work, women and the family, women and religion.

**WS 4070G Special Topics in Women, Literature and Society** 3 cr.  
(WS 4070, ENGL 4070 and SOC 4070 are cross-listed) Prerequisite: ENGL 2378 or SOC 1051 or WS 2010 or consent of instructors. A team-taught, interdisciplinary study of women in literature and society. Variable topics include women and crime, women and work, women and the family, women and religion.