ACCOUNTING • ACCT

2000 Survey of Accounting (3) Credit will not be given for both this course and ACCT 2001. Students in non-business curricula are advised to enroll in ACCT 2000 if they desire to take ACCT 2001 or ACCT 2002, unless they plan to pursue a business degree at a subsequent date. All students in the E. J. Ourso College of Business are required to take ACCT 2001. Introduction to the meaning of the values presented in financial statements; management accounting concepts and internal decision making; fundamentals of individual income taxes.

2001 Introductory Financial Accounting (3) Prereq.: MATH 1021 or equivalent. An honors course, ACCT 2002, is also available. Credit will not be given for both this course and ACCT 2000 or ACCT 2002. Required of all students in the E. J. Ourso College of Business. Students in nonbusiness curricula are advised to enroll in ACCT 2002 if they are given the option. ACCT 2002 is also available. Credit will not be given for both this course and ACCT 2102. Principles and methods of accounting as concerned with data collection and presentation for purposes of internal management evaluation and decision making.

2010 Introductory Managerial Accounting (3) Same as ACCT 2011, with special honors emphasis for qualified students. Credit will not be given for this course and ACCT 2001.

3001 Intermediate Accounting—Part I (3) Prereq.: grade of "C" or above in ACCT 2001 or equivalent; MATH 1431. College of Business students or permission of instructor. Accounting principles underlying the preparation of financial statements; their application in measurement and reporting of selected balance-sheet items and related revenue and expense recognition.

3002 HONORS: Intermediate Accounting—Part I (3) Same as ACCT 3001, with special honors emphasis for qualified students. Credit will not be given for this course and ACCT 3001.

3021 Intermediate Accounting—Part II (3) Prereq.: grade of "C" or above in ACCT 3001. Continuation of ACCT 3001. Study of financial liabilities, income statements, leases, stockholders' equity, earnings per share, accounting changes and corrections of errors, and income and balance sheet presentations.

3120 Cost Accounting and Control (3) Prereq.: grade of "C" or above in ACCT 3001. Nature, objectives, basic systems, and procedures of cost accounting and control for manufacturing firms; cost-volume-profit relationships; standard costs and variance analysis; direct costing; relevant costs; activity-based costing.

3122 Accounting Information Systems (3) Prereq.: grade of "C" or above in ACCT 3001 and IDS 1100. Majors only or permission of department. Analysis and design of standard accounting systems; emphasis on computerized systems and issues. Students must pass the CPA exam for credit to be given. While credit will not be given for both this course and ACCT 3122, Fundamentals of federal income taxation with respect to individuals and other entities, income inclusions and exclusions, and statutory deductions in arriving at tax liability.

3222 Auditing (3) Prereq.: grade of "C" or above in ACCT 3001 and 3222. Theoretical and practical development of the independent audit function; generally accepted auditing standards; audit testing and audit information; internal control; audit documentation; audit evidence; understanding internal control; risk assessment, transaction cycles; and reporting.

3230 Internal Auditing (3) Prereq.: permission of instructor. Auditing standards, ethics, concepts, audit techniques, and reporting practices.

4021 Cases in Accounting Policy (3) Prereq.: accounting major with senior standing; Case approach; integrates financial accounting concepts and techniques in financial management and use of accounting information; emphasis on financial reporting to owners, the financial community, regulatory agencies, and the general public; relationship of accounting to the law.

4022 Advanced Accounting (3) Prereq.: grade of "C" or above in ACCT 3021; MS in accounting students or permission of department. Completion of the core financial accounting sequence; business combinations, consolidated financial statements, segment reporting, foreign operations, and Securities and Exchange Commission procedures.

4121 Cost Analysis (3) Prereq.: grade of "C" or above in ACCT 3102. Measurement, interpretation, and control of business costs; budgetary control; cost comparison of business alternatives.

4211 Income Tax Accounting II (3) Prereq.: grade of "C" or above in ACCT 3102. Study of individual tax returns and tax planning by individuals and other entities, income inclusions and exclusions, and statutory deductions in arriving at tax liability.

4221 Governmental and Not-for-Profit Accounting (3) Prereq.: grade of "C" or above in ACCT 3001. Credit will not be given for this course and ACCT 7241. Accounting, budgeting, financial statements and financial records of local, state, and federal governmental bodies and of private nonprofit institutions.

4501 Petroleum Accounting (3) Prereq.: grade of "C" or above in ACCT 3102. Credit will not be given for this course and ACCT 7241. Accounting, budgeting, financial statements and financial records of local, state, and federal governmental bodies and of private nonprofit institutions.

4601 Advanced Theory of Accounts (3) Prereq.: ACCT 3021 or permission of instructor. Corporate reporting strategies and practices by managers; preparation of financial statements; interpretation of corporate financial reports.

7122 Budgeting, Cost Analysis, and Control (3) Prereq.: ACCT 3102 or permission of department. Credit will not be given for both this course and ACC 7221. Credit will not be given for both this course and ACC 7222. Basic concepts of cost accounting systems for decision-making and control.

7201 Tax Aspects of Business Entities (3) Prereq.: ACCT 3021 or equivalent. Basic concepts of business entities, including corporations, partnerships, S corporations; tax consequences of the formation and operation of a business entity, and distributions to owners.

7204 Income Taxation and Tax Planning (3) Prereq.: ACC 7201 or equivalent. Credit will not be given for both this course and ACC 7222. Basic concepts of tax concepts of corporations, including creation, operation, ownership changes, acquisitions, liquidations, reorganizations, and consolidations. Credit will not be given for both this course and ACC 7222. Basic concepts of tax concepts of corporations, including creation, operation, ownership changes, acquisitions, liquidations, reorganizations, and consolidations.

7204 Tax Research, Planning and Business Decision Making (3) Prereq.: ACC 7201 or equivalent. Credit will not be given for both this course and ACC 4225. Fundamental tax research methodology based on the Internal Revenue Code, regulations and rulings, judicial interpretations, annotated and topical tax services, computerized tax research methods, and techniques of communicating research results.

7222 Auditing Theory and Standards (3) Prereq.: ACCT 3021. MS in accounting students or permission of instructor. A comprehensive analysis of the theory and practice of independent auditing.

7231 Internship in Accounting (3) Prereq.: permission of instructor. Internship experience for credit advanced students. Credit will not be given for both this course and ACC 4231 or 7331. Credit will not be given for both this course and ACC 7235. Projects and reactive fraud auditing including auditing considered an independent audit function; investigation and reporting of fraud.

7232 Environmental and Safety Auditing (3) Prereq.: grade of "C" or above in ACCT 3232. Compliance and legal requirements relevant to environmental and safety regulations; emphasis on environmental auditing methodology.

7244 ED F Auditing (3) Prereq.: grade of "C" or above in ACCT 3244. Credit will not be given for both this course and ACCT 7244 or IDS 4244. Electronic data processing (EDP) auditing, EDI systems, and general audit systems software.

7333 Internship in Internal Auditing (3) Prereq.: permission of instructor and department chair required. Credit will not be given for both this course and ACCT 7235. Projects and reactive fraud auditing including auditing considered an independent audit function; investigation and reporting of fraud.

7333 Internship in Internal Auditing (3) Prereq.: permission of instructor and department chair required. Credit will not be given for both this course and ACCT 7235. Projects and reactive fraud auditing including auditing considered an independent audit function; investigation and reporting of fraud.

7444 Systems Auditing (3) Prereq.: ACCT 3222 or 3233. Credit will not be given for both this course and ACCT 7244. Study of risk and controls related to the deterrence, prevention, and detection of beneficial and detrimental fraud.

7500 Current Topics in Federal Income Taxation (3) Prereq.: ACCT 3221 or equivalent. MS in accounting students or permission of instructor. Credit will not be given for this course and ACCT 7244. Topics selected in the control and audit of computer systems.

7500 Current Topics in Federal Income Taxation (3) Prereq.: ACCT 3221 or equivalent. MS in accounting students or permission of instructor. Credit will not be given for this course and ACCT 7244. Topics selected in the control and audit of computer systems.
7255 Fundamentals of Federal Income Tax (3) Prereq.: ACCT 2221 or equivalent. Study of major tax laws and their application to individuals and business organizations. Topics include the nature of work as a result of power; effective communication skills in the Air Force and the Air Force career. The course covers the fundamentals of effective leadership, contemporary management, and organizational behavior.

7256 Internal Revenue Service Practice and Procedure (3) Prereq.: 3 credits of accounting or equivalent. Study of the practice and procedure of the Internal Revenue Service, including practice and procedure of the Air Force's tax compliance program. Topics include the nature of work as a result of power; effective communication skills in the Air Force and the Air Force career. The course covers the fundamentals of effective leadership, contemporary management, and organizational behavior.

7270 Statement and Report Presentation and Analysis (3) MS in accounting students or permission of the department.

7301 Financial Information Systems (3) Prereq.: ACCT 3212 or equivalent. Study of financial information systems, including the role of technology in the financial reporting process. Topics include the nature of work as a result of power; effective communication skills in the Air Force and the Air Force career. The course covers the fundamentals of effective leadership, contemporary management, and organizational behavior.

7310 Tax Aspects of Personal Financial Planning (3) Prereq.: ACCT 3221. Basic concepts of estate and gift taxation and income taxes as they affect personal tax planning; emphasis on wealth accumulation.

7333 Internship in Internal Auditing (3) Prereq.: permission of the auditor and the department chair. Credit will not be given for this course and ACCT 4231 or 4313 or 7231. Pass-fail grading.

7401 Ethics for Professional Accountants (3) Prereq.: MS in accounting students or permission of the department. Credit will not be given for this course and ACCT 4231 or 4313 or 7231. Pass-fail grading.

7421 Public Sector Accounting and Reporting (3) Prereq.: ACCT 3207. Study of the financial accounting and reporting systems of governmental and not-for-profit organizations. Topics include financial reporting, regulation, management, auditing, taxation, and the impact of governmental and not-for-profit organizations on the economy. The course covers the fundamentals of effective leadership, contemporary management, and organizational behavior.

7601 International Accounting (3) MS in accounting students or permission of the department. Accounting principles, auditing environments, managerial objectives, and financial reporting requirements applicable to multinational corporations; causes of international accounting divergence. The course covers the fundamentals of effective leadership, contemporary management, and organizational behavior.

8900 Pre-Dissertation Research (1-9) May be repeated for credit. Pass-fail grading. Permission of instructor and department chair required.

9000 Dissertation Research (1-12 per sem.) "S"/"U" grading.

9001 Accounting Research I (3) For doctoral students only. Research methodologies in accounting and a survey of the current research literature in accounting.

9002 Accounting Research II (3) For doctoral students only. Theory and evidence relating to internal decision making and control, financial accounting, and auditing.

9003 Accounting Research III (3) For doctoral students only. Continuation of ACCT 9002. Theory and evidence relating to internal decision making and control, financial accounting, and auditing.

9004 Accounting Research IV (3) For doctoral students only. May be taken for a max. of 6 hrs. of credit. Seminar in current accounting research topics.

AEROSPACE STUDIES • ASST

1001, 1002 The Foundations of the United States Air Force (1,1) F,S Coreq.: ASST 1011, 1012. Fundamentals of leadership, effective communication, organizational elements, and weapons systems of today's Air Force. The course covers the fundamentals of effective leadership, contemporary management, and organizational behavior.

1011, 1012 Leadership Laboratory I (1,1) F,S Coreq.: ASST 1001, 1002. 2 hrs. lab. Pass-fail grading. Applied leadership in drill and ceremony, physical fitness, and professional development.


3001, 3002 Air Force Leadership Studies (3,3) F,S Prereq.: permission of the instructor. Designed to help the successful leader: individual motivational and behavioral processes; leadership, communication, and group dynamics; use of analysis and organizational leadership; total quality management; ethics, management of change, organizational power, politics, and managerial strategy.

3011, 3012 Leadership Laboratory III (1,1) F,S Coreq.: ASST 3001, 3002. 3 hrs. lab. Pass-fail grading. Experiences designed to develop leadership potential; study of Air Force customs and courtesies; drill and ceremonies; career opportunities; and the life and work of an Air Force junior officer.

4001, 4002 National Security Affairs/Preparation for Active Duty (3,3) F,S Prereq.: permission of instructor. Organization and implementation of national security; evolution of strategy; management of conflict; and civil-military interaction; military profession/officehip and the military justice system.

4011, 4012 Leadership Laboratory IV (1,1) F,S Coreq.: ASST 4001, 4002. 3 hrs. leadership lab. Pass-fail grading. Experiences designed to develop leadership potential; study of Air Force customs and courtesies; drill and ceremonies; career opportunities; and the life and work of an Air Force junior officer.

AFRICAN AND AFRICAN AMERICAN STUDIES • AAAS

General education courses are marked with stars (*).

1001 Elementary Swahili Language and Culture I (4) See SWAH 1001.

1002 Elementary Swahili Language and Culture II (4) See SWAH 1002.


4000 Contemporary Africa (3) African social and political institutions in transition; challenges of democratization and development in the current international context.

2410 Black Popular Culture (3) Explores participation by black peoples in the creation and critique of popular culture through music, film, and television and terms of topics such as representation and sexuality. See SWAH 2003.

2431 African Diaspora Thought and Practice (3) Survey of African Diaspora thought and practice through the historical and cultural contexts of the African Diaspora.

2444 Black Rhetorical Traditions (3) Survey of the development of black rhetorical traditions in transition from the historical to the academic. Examining the black world’s most effective verbal and written communicators and the tension between orality and literacy. See SWAH 2003.

3120 Topics in History of Africa and the African Diaspora (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary. This course surveys historical moments in the life of African and/or African diaspora peoples.

3122 Topics in Pre-Colonial Africa (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary. Surveys African empires and civilizations from ancient times to colonial period. Emphasizes influence, language and/ or political influence and practices.

3341 African American English (3) Survey of major issues related to historical and contemporary development of African American speech, focusing on linguistic and social features.

3425 Black Women in America (3) Surveys intersection of race and gender in the U.S. Through historical and contemporary lenses, course examines commonalities, differences, and struggles that mark black women’s subjectivity.

3901 Directed Readings and Research in African and African American Studies (1-3) May be taken for a max. of 6 sem. hrs. credit when topics vary. Student must register with a faculty member in the AAS discipline before registration to select the area of research. Topic must not substitute for regularly offered courses.

3902 Special Topics in African and African American Studies (1-3) May be taken for a max. of 6 semester hrs. credit when topics vary.

4020 Senior Seminar (3) Prereq.: permission of instructor. Capstone for the minor and concentration; planning and execution of a major research project demonstrating the interplay of primary issues used by those working in the field of African American studies to develop their arguments and interpretations.

4124 Studies in African Diaspora Religions (3) See REL 4124.

4322 Studies in African Literature (3) Also offered as ENGL 4322. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Critical analysis of major figures and texts of fiction, drama and poetry.

4341 African American Studies (3) Also offered as ENGL 4341. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Critical analysis of major figures and texts of fiction, drama and poetry.

AGRICULTURAL ECONOMICS • AGEC

General education courses are marked with stars (*).

1003 Introduction to Agricultural Business (3) F Nature and scope of agribusiness; application of management and marketing concepts to selected agribusiness problems; exploring agribusiness management as a profession.

2003 Introduction to Agricultural Economics (3) F,S Role of agriculture in the general economy; economic principles applied to agricultural production, marketing, consumption, and policy problems.

3003 Economic Analysis in Agricultural Business (3) F,S Prereq.: AGEC 2003 or equivalent; MATH 1431. 2 hrs. lecture, 1 hr. lab. Applications of mathematical, statistical, and computer-based microeconomics to agriculture and other social sciences.

3213 Agribusiness Commodity and Food Products Marketing (3) S Prereq.: AGEC 2003 or equivalent. An overview of the agricultural commodity and food marketing system; marketing, management, and economic principles are applied to the formulation and implementation of marketing plans for agricultural commodities and branded food products; futures market trading principles.

3303 Farm Management (3) F,S Prereq.: AGEC 2003 or equivalent; Fundamental economic and business principles applied to a farm business; comprehensive and integrated treatment of management concepts for successful operation of a farm business.

4311 Agricultural Business Management Decisions (3) F,S Prereq.: AGEC 2003 or equivalent. Identification of typical decisions of agricultural business firms; development of decision concepts, procedures, and analyses that facilitate planning, organizing, directing, coordinating, and controlling functions within agricultural business firms.

5303 Natural Resource Economics (3) S Prereq.: AGEC 2003 or equivalent. Economic rationale for collective, public action in allocation of natural resources in agriculture; emphasis on economic efficiency, property rights, resource use, legal concepts, institutions, and project evaluation.

5700 Internship (1-3) Prereq.: AGEC 2003 or equivalent and approval of department head. May be taken for a max. of 3 sem. hrs. of credit. Supervised practical experience with a business or organization in the food and fiber system.

6301 Agricultural Law (3) F,S Prereq.: AGEC 2003 or equivalent. Principles of law and their application to agricultural business firms and institutions; legal policies and relationships relevant to agricultural, Louisiana Civil Code and statutes; federal law, including bankruptcy code; analysis and review of cases, documents, and processes.

6403 Intermediate Food and Fiber Products Marketing (3) F,S Prereq.: AGEC 2003 or equivalent. Industrial organization analysis applied to the food and fiber system; emphasis on structural problems and their control by competition, antitrust, and government.
4213 Economics of Milk Marketing Systems (3) S-E Prereq.: AGEC 2503 or equivalent. Analysis of the milk production and marketing system; market channels, characteristics, institutions, and government regulations in pricing and marketing.

4271 Agricultural Price Analysis (3) S Prereq.: AGEC 2503 or equivalent; MATH 1411; and ECON 2201 or equivalent. Economic processes of price discovery and price determination; agricultural input and output markets; emphasis on methods of price analysis and their application to decision processes; analysis of cyclical, trend, and seasonal movements in prices.

4403 Agricultural Finance (3) F Prereq.: AGEC 2503 or equivalent. Capital acquisition and use in the agricultural sector; cost and availability of credit; emphasis on financial management concepts for managing growth, leverage, liquidity, risk, and capital investment in agricultural business.

4433 Agricultural Business Planning, Management, and Policy (3) S Prereq.: senior standing; AGEC 3003, 3213, 3413, MKT 3440, MGT 3230, and BLAW 3200 or equivalent. Integration of management, marketing, and financial concepts for successful planning and implementation of agricultural business decisions; feasibility analysis, marketing policy, personnel policy, marketing mix, pricing decisions, market segmentation, marketing strategy, and financial policy.

4443 Farm and Rural Land Appraisal (3) F-E Prereq.: AGEC 2503 or equivalent; AGEC 3003 or equivalent. Factors affecting land value; appraisals of agricultural land.

4463 Agricultural Policy (3) F Prereq.: AGEC 2503 or equivalent; senior standing; BAC 2500 or equivalent. Analysis of agricultural policies; effect on agricultural production and marketing; agricultural production, marketing, and agricultural forecasting. Principles of agricultural policy; export and importing regions and nations; policies of major agricultural trading nations and institutions; aid development relationships, and current development trend.

4623 Rural Resource and Community Development (3) S-E Prereq.: AGEC 3003 or equivalent. Characteristics of developed and undeveloped rural areas; analysis of economic and related problems and potential for development; public policy issues concerning rural development.

7400 Problems in Agricultural Economics (1-3) Prereq.: approval of department head. May be taken for a max. of 4 s.h. credits. Independent study under the direction of a faculty member or faculty committee.

7103 Advanced Statistical Methods in Agriculture (3) S Prereq.: AGEC 3003 or equivalent. Review of regression and correlation analysis. Application of advanced statistical tools to problems in agricultural economics; emphasis on the general linear model, including diagnostics, applications, and interpretation.

7133 Agricultural Business Research Applications (3) F Introduction to and overview of agricultural business research strategies; design of agricultural research projects; preparation for data collection; collection of evidence; analysis of evidence; composition of research reports; applications to agricultural market analysis, agricultural planning and management, and agricultural forecasting.

7123 Operations Research Methods in Agricultural Economics (3) F Application of operations research methods to agricultural production, marketing, and resource use; linear and nonlinear programming; integer programming; network analysis; dynamic programming; queuing simulation.

7203 2 Advanced Agricultural Marketing Theory (3) F Prereq.: ECON 7700 or concurrent enrollment. Basic and applied analytical procedures in marketing research emphasizing quantitative methods; firm theory applied to marketing.

7303 Agricultural Production Economics (3) S-E Prereq.: ECON 7700 or concurrent enrollment. Production principles applied to use of agricultural resources; analysis and interpretation of research data; theory of the firm, including costs, uncertainty, and expectations.

7503 Natural Resource Economics (3) F-E Prereq.: ECON 7700 or concurrent enrollment. Economic concepts and institutional factors relating to utilization of natural resources; emphasis on conservation, property rights, resource valuation, and the law of the commons.

7631 Advanced Agricultural Policy (3) S-E Prereq.: ECON 7700 or concurrent enrollment. Development of agricultural policy; emphasis on objectives, procedures, accomplishments, and consequences of policy on agriculture and rural areas.

7613 International Agricultural Trade (3) S-E Prereq.: ECON 7700 or concurrent enrollment. International economic trade theory; special reference to trade in agricultural products.

7623 Rural Development Economics (3) F-E Prereq.: ECON 7710. Theoretical concepts in international and domestic rural development; empirical methods used in analysis of economic structure and growth; modeling public policy issues concerning international and domestic rural development.

7700 Internship in Agribusiness Administration (3) F-S Su Prereq.: prior approval of student’s graduate committee. Open only to agricultural economics master’s students. May be taken for a max. of 3 hrs. credit. 300 hrs. of learning experience. General supervision by a faculty member; direct supervision by an agribusiness professional. Pass/fail grading based on a written evaluation by the professional supervisor, a written report by the student, and the grad student’s evaluation.

7703 Independent Study (1-3) F-S Su Prereq.: graduate committee approval prior to enrollment. May be taken for a max. of 6 sem. hrs. when topics vary. Independent study of relevant subject matter in agricultural economics.

7710 Advanced Topics in Agricultural Economics (1-3) F-S Su Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. New and specialized topics in agricultural economics.

7803 Agricultural Economic Applications (3) S Prereq.: ECON 7700. Application of economic theory to issues in agricultural production, consumption of agricultural goods, and national resource management. 8000 Thesis Research (1-12 per sem.) S-U-U grading.

9000 Dissertation Research (1-12 per sem.) S-U-U grading.

AGRICULTURE + AGRO

AGRONOMY + AGRO

4205 Soil Science (4) Prereq.: CHEM 1002 or equivalent. 3 hrs. lecture; 2 hrs. lab. Also offered as EMS 4595. Principles of soil science; properties of soils related to plant growth and the environment.

2086 Introduction to Turfgrass Management (3) S Prereq.: Hort 101, 1001, 1002. 2 hrs. lecture; 2 hrs. lab. Also offered as EMS 4595. Principles of soil science; properties of soils related to plant growth and the environment.

3000 Principles of Crop Production (3) F Prereq.: BIOL 1402 or equivalent. Crop production principles relative to major crops grown in Louisiana and the U.S.; seed bed preparation, planting, weed and pest control; harvest and processing practices related to each major crop group.

3010 Research Problems (3) F-S-Su Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Independent research under a faculty member, culminating in an oral and written report.

3011 Fall Crop Production Laboratory (1) F-E Prereq.: credit or registration in AGRO 1000. Field and laboratory research designed to provide an understanding of the growth and practices involved in production of soybeans, cotton, and sugarcane.

3012 Spring Crop Production Laboratory (1) Prereq.: AGRO 3000. Field laboratory research designed to provide an understanding of the growth and practices involved in the production of winter small grains.

3013 Summer Crop Production Laboratory (1) Su Prereq.: AGRO 3000. Field and laboratory research designed to provide an understanding of the growth and practices involved in the production of rice, corn, and sorghum.

3040 Soil Conservation (2-3) F Prereq.: AGRO 2051 and EMS 4595. Principles and practices of erosion control and environmental protection.

3090 Agronomic Internship (3) F-S Su Prereq.: overall GPA of 3.0 and written consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Work experience in crop, soil, or environmental management designing or performing research or experiments culminating in acceptable written reports and a seminar presentation.

4005 Forage Ecology and Management (3) S Forage crop physiology, adaptation, production, utilization, and management; impact on people, animals, and the environment.

4052 Soil Fertility and Soil Management (4) Prereq.: AGRO 2851 and EMS 4595. Principles and practices of soil fertility; effect of nonpoint source pollution from agriculture; effects of nonhazardous amendments on soil properties.

4058 Soil Morphology and Classification (4) F 2 hrs. lecture; 4 hrs. lab (field and mapping). Genesis, profile morphology, processes related to classification and soil taxonomy; relationships of soil process and classification to environmental quality.

4064 Principles of Plant Breeding (4) Prereq.: AGRO 2872 or equivalent. 3 hrs. lecture; 2 hrs. lab. Also offered as EMS 4595. Principles and practices of plant breeding: hybridization, genetic manipulation, and variety development; selection for insect, disease, and environmental stress resistance; genetic improvement and biotechnology.

4070 Weed Science and the Environment (3) F Prereq.: BIOL 1001, 1002, CHEM 1001, 1002, or equivalent. 2 hrs. lecture; 2 hrs. lab. Weed biology and economic importance of weeds in the natural environment; Louisiana; weed management programs, characteristics of important herbicides, mechanisms of herbicidal action, fate of herbicides in the environment, and pesticide application, labeling, and safety.
2001 Architectural Design III (6) Prereq.: ARCH 1902 or ARCH 1903, 12 hrs. studio. An Honors course, ARCH 2101 is also available. Emphasis on abstract and theoretical organizational concepts; space, form, function, and resolution of materials and structural systems.

2002 Architectural Design IV (6) Prereq.: ARCH 2001 or ARCH 2101; coreq.: ARCH 2006, 12 hrs. studio. An Honors course, ARCH 2102 is also available. Required field trip. Students are responsible for paying travel expenses associated with the course. Emphasis on process, materials theory, site inventory, and analysis and impact of regionalism.


2006 Architectural Topics (3) Prereq.: ARCH 2003; coreq.: ARCH 2002. Use of case studies to contrast the meanings of buildings designed in urban or rural environments.


2145 Louisiana and Gulf Coast Building Culture (3) History and development of Louisiana and Gulf coastal architecture from the 17th century to the present.

★ 2401 Architectural Practice (3) S Not open to architecture majors. Architectural concepts and principles; architectural vocabulary, style, symbolic form characteristics, spatial character, and refinement of travel experiences associated with the course. Emphasis on process, materials theory, site inventory, and analysis and impact of regionalism.

2402 Introduction to Structural Forms (3) S Prereq.: enrollment in professional program in architecture or interior design. Nonmathematical survey of structural elements and systems; their integration in the environmental design study of forces and force systems; state of stress; deformation; properties of shapes.

3000 Supervised Independent Study and Research (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit with consent of school director. Investigation of areas of interest not covered in other departmental courses.

3001 Architectural Design V (6) Prereq.: approval for advancement to upper division in architecture. 12 hrs. studio. An Honors course, ARCH 3101 is also available. Required field trip. Students are responsible for paying travel expenses associated with the course. Emphasis on process, materials theory, site inventory, and analysis and impact of regionalism.

3002 Architectural Design VI (6) Prereq.: ARCH 3001 or ARCH 1903, 12 hrs. studio. An Honors course, ARCH 3102 is also available. Emphasis on planning buildings while incorporating studies in the technologies of materials, structure, environmental controls, lighting, and acoustics.


★ 3005 History of Architecture I (3) The development of architectural and spatial forms as they relate to changing perceptions of self, society, and the natural world. From prehistoric to the 13th century.

★ 3006 History of Architecture II (3) Prereq.: ARCH 3005. The development of architectural and spatial forms as they relate to changing perceptions of self, society, and the natural world from the Italian Renaissance through modern times.

3007 Architectural Systems (3) Prereq.: approval for advancement to upper division in architecture. Detailed treatment of construction materials and systems, with emphasis on large-scale application of enclosure systems and steel and concrete structures.

3008 Environmental Control Systems (3) Prereq.: approval for advancement to upper division in architecture. Architectural practices of selection and design of mechanical systems, including lighting, electrical distributions, acoustics, plumbing, vertical transportation, and fire protection.

3101 HONORS: Architectural Design V (6) Prereq.: approval for advancement to upper division in architecture. 12 hrs. studio. Required field trip. Students are responsible for paying travel expenses associated with the course. Same as ARCH 3001, with special emphasis for qualified Honor students.

3102 HONORS: Architectural Design VI (6) Prereq.: ARCH 3001 or 3101, 3007. 12 hrs. studio. Same as ARCH 3002, with special emphasis for qualified Honor students.

3457 Hands on Materials (3) V Prereq.: ARCH 2134, 6 hrs. studio. Design and physical manipulation, construction, and/or fabrication of devices or components made primarily (but not necessarily exclusively) of steel.

4001 Architectural Design VII (6) Prereq.: ARCH 3002 or 3102. 12 hrs. studio. Service-learning course. An Honors course, ARCH 4101 is also available. Emphasis on the design of single or multiple buildings in urban environments.

4002 Architectural Design VIII (6) Prereq.: ARCH 4001 or ARCH 4101. 12 hrs. studio. An Honors course, ARCH 4102 is also available. Required field trip. Students are responsible for paying travel expenses associated with the course. Emphasis on process, materials theory, site inventory, and analysis and impact of regionalism.

4003 Intensive Design Studio (6) Prereq.: admission to the M Arch program. 12 hrs. studio. Introduction to design, analysis, and the development of basic architectural skills.


4008 History of Architecture IV (3) Prereq.: ARCH 4007. Same as ARCH 3003, with special emphasis for qualified Honor students.

4165 Applied Principles of Conservation (3) Prereq.: permission of instructor. 1 hr. lecture; 4 hrs. lab. Hands-on field and laboratory experience in current methods of documenting historic buildings, including hand methods, photography, and photogrammetry.

4221 Selected Topics in Architecture (3) V May be taken for a max. of 12 hrs. of credit with school approval. Studies in various subjects related to architecture.

4353 Principles and Practices of Land Development (3) Environmental, physical, and financial aspects of land development.

4440 Vernacular Architecture and Material Culture (3) See ANTH 4440.

4441 Aesthetics of Architecture (3) Prereq.: consent of instructor. Development of aesthetic theory through architectural literature.

4474 Passive Solar Energy Applications for Buildings (3) Design and application of passive solar systems for space heating and cooling of buildings.

4700 Research Methods (3) Major research methods in architecture; hypothesis formulation and testing, data gathering, and analysis.

4991 Advanced Computer Applications in Design (3) F,S Prereq.: permission of department. 1 hr. lecture; 2 hrs. lab. Development and application of computer-based image processing and information management skills.

4993 Advanced Computer-Aided Architectural Graphics (3) F,S Prereq.: consent of instructor. The development and application of advanced computer-based architectural design and communication skills.

5001 Comprehensive Architectural Design (6) Prereq.: ARCH 4002 or ARCH 4102, 12 hrs. studio. An Honors course, ARCH 5101 is also available. Emphasis on the comprehensive design of a single building integrating material selection, mechanical, acoustical, structural, lighting, and two- and three-dimensional studies.

5002 Architectural Design Concentration (6) Prereq.: ARCH 5001 or ARCH 5101. 12 hrs. studio. Emphasis on architectural problems developed around expertise and emerging opportunities in the profession.

5003 Advanced Architectural Topics (3) Seminar relating to various topics in architecture; writing component.

5004 Concentration Seminar (3) Various topics relating to architectural problems encountered in ARCH 5002.

5005 Advanced Architectural Techniques (3) 1 hr. lecture; 4 hrs. studio. Preparation and correlation of working drawings, specifications, and project manuals, from design development drawing.

5006 Professional Practice (3) Exploration and analysis of project acquisition, contract negotiations, governmental regulations, personnel, office management, and the architect's societal role.

5008 Community Design Practicum (6) Prereq.: ARCH 3002, LA 3002, or permission of department. Minimum 280 hours of supervised experience. Supervised learning experience in the Office of Community Design and Development or approved off-campus experience with emphasis on pre-professional services for community-based projects.

5101 HONORS: Comprehensive Architectural Design (6) Prereq.: ARCH 4002 or ARCH 4102, 12 hrs. studio. Same as ARCH 5001, with special emphasis for qualified Honor students.

7001 Graduate Design Studio I (6) F Prereq.: ARCH 4001 or equivalent. 12 hrs. studio. The use of space and form in relation to concept in the exploration of basic architectural elements.

7002 Graduate Design Studio II (6) S Prereq.: ARCH 7001, 12 hrs. studio. Emphasis on the design of buildings in a variety of physical settings.

7003 Graduate Design Studio III (6) F Prereq.: ARCH 7002, LA 7002, or permission of department. Emphasis on architectural programming and the design of buildings incorporating technologies of materials and various architectural systems.

7004 Graduate Design Studio IV (6) F Prereq.: ARCH 7004, LA 7004, 12 hrs. studio. Emphasis on the design of buildings incorporating technologies of environmental systems.

7005 Graduate Design Studio V (6) F Prereq.: ARCH 7004, 12 hrs. studio. Introduction to contextual building design in an urban setting with emphasis on site and context analysis and community planning in a collaborative working environment.

7006 Graduate Design Studio VI (6) F Prereq.: ARCH 7005, 12 hrs. studio. Credit will not be given for both this course and ARCH 8000. Emphasis on the synthesis of all issues addressed in previous studios in the comprehensive design of buildings.

7009 Structural Concepts and Forms (3) Relationship between the schematic properties of prototypical building forms and basic types of system behavior.

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ART • ART

Registration for all multiple-credit courses taken for over three credits in a given semester will require the prior permission of the instructor. Multiple credit courses are designated with an asterisk (*) following the course number.

General education courses are marked with stars (*).

GENERAL COURSES

* 1011 Introduction to Fine Arts (3) Fundamental problems and concepts of art in the fields of design, sculpture, graphic arts, photography, painting, and ceramics, as related to home, community, religion, commerce, and industry.

1008 Introduction to Two-Dimensional Composition (3) 6 hrs. studio. Credit will not be given for both this course and ART 1011. An introduction to two-dimensional art and design practices using a variety of materials and techniques.

1009 Introduction to Three-Dimensional Art (3) 6 hrs. studio. Credit will not be given for both this course and ART 1012. Introduction to fundamental concepts of three-dimensional art projects will explore line, plane, spatial organization, surface, and volume using a variety of materials and techniques.

1010 Introduction to Drawing (3) 6 hrs. lab. Credit will not be given for both this course and ART 1847. Drawing from observation and invented images; various drawing materials, methods, and subjects are explored as a mean to develop perceptual ability and descriptive drawing skills; drawing concepts including composition, line, perspective, shape, space, and value.

* 1011 Art Structure (3) 6 hrs. studio. Disciplines in art, with emphasis in the visual media.

1012 Three-Dimensional Design (3) Prereq.: majors only, 6 hrs. studio. Introduction to the fundamental concepts of physical art. Projects will explore line, space, spatial organization, surface, and volume; using a variety of materials and techniques.

1013 Studio Art Abroad (3) 6 hrs. studio. Studio art fundamentals within the specific medium of faculty members participating in Academic Programs Abroad.

2050 Digital Art I (3) Prereq.: majors/minors only, ART 1008 or 1011. 2 hrs. lecture/2 hrs. studio. Introduction to digital applications in art.

2055 Digital Art II (3) Prereq.: ART 2050 or permission of instructor. 2 hrs. lecture; 2 hrs. lab. Introductory course in digital animation and multimedia applications.

4020 Special Topics in Studio (3) Prereq.: consent of department. May be taken for a max. of 6 hrs. of credit when topics vary. 6 hrs. studio. Directed studies with a visiting artist.

4044 Gender Aesthetics: Art Theory and Criticism (3) May be taken for a max. of 6 hrs. of credit.

Interdisciplinary study of art, writing, and gender; emphasis on the interaction of art and writing about art as it reflects gender.

4050 Digital Art III (3) Prereq.: ART 2055 or equivalent. 6 hrs. studio. Primarily for students majoring in art.

Intermediate work in digital animation.

4055 Digital Art IV (3) Prereq.: ART 4050 or equivalent. 6 hrs. studio. Primarily for students majoring in art.

Advanced work in digital imaging, video, and animation.

4080 Performance Art (3) Prereq.: completion of studio art fundamental courses and permission of instructor. 6 hrs. studio. Multi-disciplinary “live” art studio problems utilizing a diverse range of media such as drawing, painting, sound and movement, and poetry; lectures and discussions on the history of performance art.

7042 Visiting Artist Seminar (3) May be taken for a max. of 9 hrs. of credit. Seminar with visiting artist; contemporary art, criticism, individual and group projects.

8000 Thesis Research (1-12 per sem.) “S”/“U” grading.

ART HISTORY

★ 1440 Historical Survey of the Arts (3) Prehistoric, Near-Eastern, Greek, Roman, and medieval art.

★ 1441 Historical Survey of the Arts (3) Renaissance to modern art.

★ 2401 Art of the Ancient Near East and Egypt (3) Development of art and architecture in the ancient Near East and Egypt over three millennia; influences of one culture on another and subsequent contributions to Western art.

★ 2411 Survey of Asian Art (3) The arts of China, India, and Japan in relation to religious and philosophical beliefs that have shaped them.

★ 2469 Italian Renaissance Art (3) Italian painting, sculpture, and architecture from 1400-1600.

★ 2470 Survey of 20th Century Art (3) Modern art.

2480 Introduction to Museum Studies (3) Introduction to art history museum practices, their missions and functions; practical aspects and philosophical issues related to museums.

4001 History of Prints (3) History of prints from the 15th century to the present.

4004 The Art of Rome (3) Development of architecture, sculpture, and painting from Rome's early beginnings (600-200 B.C.) to the end of the 1st century.

4005 Early Christian and Byzantine Art (3) Painting, sculpture, and architecture of the Christian era through 12th century Byzantium.

4006 Romanesque Art (3) Architecture, sculpture, manuscripts, and paintings from the 9th through the 12th centuries in France, Germany, and England.

4009 Early Greek Art (3) Greek art to the time of the Persian Wars.

4010 Later Greek Art (3) Greek art from the time of Themistocles to the age of Augustus.

4012 Gothic Art (3) Architecture, sculpture, and painting of Northern Europe from 1150 to 1450.

4013 Early Netherlandish and German Painting (3) Painting in the Netherlands and Germany in the 15th and 16th century.

4020 Studies in Art History (3) May be repeated for credit when topics vary. Introduction to a pre-determined area of specialization.

4221 History of Western Decorative Arts from the Renaissance to Modernism (3) Development of decorative arts design, emphasis on furniture, with investigations of metals, textiles, ceramics, and glass; materials, constructional techniques, and socioeconomic conditions giving rise to the objects’ fabrication.

4222 History of Modern Design (3) Aesthetic theory and stylistic evolution of decorative arts from mid-19th century to the present; emphasis on crafts, architectural decoration, furniture, interior design, and industrial design; Victorian period, arts and crafts movement, art nouveau, Bauhaus, and international style.

4223 Early Renaissance Painting in Italy (3) The origins and early development of Italian Renaissance painting in Florence and Siena.

4224 High Renaissance and Mannerist Painting in Italy (3) The climax and aftermath of Italian Renaissance painting in Florence, Rome, and Venice.

4225 Renaissance Sculpture in Italy (3) The origins and development of Italian Renaissance sculpture; its function, patronage, and significance within its social and cultural context.

4227 Northern Netherlandish Painting (3) Dutch, Flemish, and French painting of the 17th century.

4229 Southern Baroque Art (3) Painting, sculpture, and architecture of the 17th century in Italy and Spain.

4333 18th Century European Art (3) European art from the age of absolutism to the beginning of the Napoleonic era, including Rococo art, the influence of Enlightenment thought, the rediscovery of classical antiquity, Neoclassicism, and the impact of the French Revolution on the visual arts.

4411 Chinese Painting (3) History of Chinese painting from prehistoric times through the 20th century.

4412 Japanese Art (3) History of Japanese painting, sculpture, architecture, and ceramics from prehistoric times through the early 20th century.

4413 Indian Art (3) History of Indian painting, sculpture, and architecture from prehistoric times through the 16th century.

4444 Southeast Asian Art (3) History of architecture, sculpture, ceramics, and painting in Burma, Thailand, Cambodia, Indonesia, Vietnam, and Laos from the prehistoric times through the 19th century.

4445 Chinese Ceramics (3) History of Chinese ceramics from the prehistoric times to the 20th century; hands-on examination of original specimens.

4450 19th Century European Painting (3) History of painting in European countries from the French Revolution (1789) to 1900; emphasis on neoclassicism, romanticism, realism, impressionism, post-impressionism, and symbolism.

4451 Early 20th Century European Art (3) History of painting and sculpture in European countries from 1900 to 1960; emphasis on Fauvism, Cubism, abstraction, Futurism, Dada and Surrealism, German Expressionism, British figurative art, and the School of Paris.

4462 American Art 1900 to 1980 (3) North American painting, architecture, and sculpture from the colonial beginnings to 1900; emphasis on painting.

4464 American Art 1980 to 1940 (3) Study of American painters and sculptors between 1980 and 1960; from the Impressionists to the Abstract Expressionists; emphasis on the artists’ connections to social, political, and cultural developments.

4466 Survey of Contemporary Art (3) Major movements in art from World War II through the 1980s; the wane of modernism and the rise of postmodernism; focus on America and Europe, but Latin American and non-western art also considered.

4467 Latin American Art (3) Pre-Hispanic, colonial, and contemporary architecture, painting, sculpture, and related arts throughout Latin America.

4468 Issues in Contemporary Art (3) Principal issues confronting contemporary artists and the sources and theories behind the issues.

4469 Art of the American South: 1580-1861 (3) History of architecture, painting, sculpture, and decorative arts made in the states below the Mason-Dixon Line.

4470 History of Photography (3) History of photography from its inception in the 1830s until the present: technological development of the medium and its inherent aesthetics; interrelationships between photography and more traditional media.

4480 Video Art and Theory (3) Sources and origins of artists’ video from the late 1960s to the present day; consideration of theoretical and practical aspects; survey of single-channel, projected, installation, and Internet formats for video art display.

4490 Independent Study in Art History (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary.

4499 Undergraduate Seminar (3) Prereq.: ART 1440, 1441, and any four additional art history courses; only open to art history majors of junior and senior standing. Intensive reading, writing, and classroom discussion; introduction to art-historical research and methodologies.

7400 Art Theory and Criticism (3) Critical and theoretical aspects of art, building of art collections from ancient to modern times.

7420 Special Topics in Art History (3) Prereq.: graduate standing in art or consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. Advanced topics in art history.

7441 Graduate Research Seminar in History of Art (3) Each course may be taken for a max. of 6 hrs. of credit when topics vary; no more than 3 hrs. per semester.

7490 Independent Study in Art History (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary.
1661 Introduction to Ceramics 1 (3) Prereq.: majors/minors only, ART 1008 or 1011. 6 hrs. studio. Basic design projects that investigate form and the delineation of space within a two-dimensional field; emphasis on hand skills and traditional design media.

2544 Letter Forms (3) Prereq.: ART 1551 and permission of instructor. 6 hrs. studio. Letter form study; traditional and contemporary variations.

2551 Typography for Visual Communications (3) Prereq.: consent of instructor. 5 1/2 hrs. studio; 2 hrs. lab. Historical overview of type and letter forms; introduction to professional typography in print and digital environment; primary focus will be applications to contemporary communications.

2552 Color Design (3) Prereq.: ART 1551 and permission of instructor. Color as a functional design element of perception and visual communication.

2554 Introduction to Graphic Design (3) Prereq.: ART 1551 and permission of instructor. 6 hrs. studio. Agancy and studio procedures for solving design problems: from first ideas through presentation; emphasis on the integration of letter forms and graphics.

2564 Graphic Abstraction (3) Prereq.: ART 1551 and permission of instructor. 6 hrs. studio. Simplification of pictorial images as graphic elements.

4514 Experimental Design (3) Prereq.: consent of instructor based on review of student's portfolio; 6 hrs. studio. Advanced experimental work in a predetermined area of graphic design.

4526 Prepress Production Techniques (3) Prereq.: consent of instructor; 6 hrs. studio. Prepress techniques related to production problems in the graphic design profession; typesetting methods; primary printing processes, mechanical and digital systems.

4527 Applied Typography (3) Prereq.: consent of instructor; 6 hrs. studio. Developing and understanding typographic skills through functional and aesthetic use of type and its application within the digital environment.

4534 Photoset Design Application (3) Prereq.: consent of instructor; 6 hrs. studio. Investigation of photography as an illustration technique through a series of experimental problems; in application to layout and product illustration.

4541 Special Studies in Graphic Design (3) Prereq.: consent of instructor based on review of student's portfolio; 6 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Advanced work in a predetermined area of specialization.

4544 Advanced Production Techniques (3) Prereq.: consent of instructor; 6 hrs. studio. Advanced techniques and practical experience with graphic arts equipment.

4550 Digital Imaging for Visual Communications (3) Prereq.: consent of instructor and ART 2551 or equivalent. 2 hrs. lecture; 2 hrs. lab. Basic exploration of digital graphic technology and its application in communications; topics include: scanning, image processing and manipulation, digital filtering, and imaging peripheral devices; emphasis on emerging technology and preparing images for multimedia applications.

4551 Problems in Graphic Design (3) Prereq.: consent of instructor. 6 hrs. studio. Problems in design related to the professional design field; methods of reproduction, exhibition techniques, and digital applications.

4552 Product Design (3) Prereq.: consent of instructor; 6 hrs. studio. Technology, needs, and market related to the mass-produced article; materials research; human engineering; prototype construction; presentation methods; field trips.

4554 Applied Illustration (3) Prereq.: consent of instructor; 6 hrs. studio. Techniques of general illustration; product illustration; problems of layout and its application within the digital environment.

4555 Advanced Graphic Design (3) Prereq.: consent of instructor; 6 hrs. studio. Principles of visual communication through graphic design; problems in design theory and application.

4556 Advanced Design (5) Prereq.: 3 sem. hrs. in advanced design course work and consent of instructor based on review of student's portfolio. 10 hrs. studio. Advanced studio work in a predetermined area of design specialization.

4557 Advanced Project in Graphic Design (5) Prereq.: 3 sem. hrs. in advanced design and consent of instructor based on student's portfolio evaluation. Advanced studio work in a predetermined area of design specialization.

4560 Interactive Media for Visual Communications (3) Prereq.: consent of instructor and ART 4550 or equivalent. 2 hrs. lecture; 2 hrs. lab. Basic application of interaction technology: design and application of Internet-based communications, hypermedia language, virtual reality, sound and visual synchronization, communications standards, emerging technologies, and multimedia; special focus on the study and application of interactive multimedia theory.

4561 Survey of Graphic Design (3) Prereq.: consent of instructor. Overview of graphic design, covering its development from its inception to the present; its relationship to other arts; and the cultural influences and technological advances that have shaped its present role in the field of visual communications.

4564 Senior Graphic Design (3) Prereq.: ART 4553. 6 hrs. studio. To be taken in the last semester of the senior year. This course is not offered during the summer term. Design projects investigating problems of visual communication; individual and group projects with professional-level presentations.

4567 Interactive Multimedia Design (3) Prereq.: consent of instructor; 6 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Access to computer graphics technology for art and design; design and application of CD-ROM, video disks, Internet-based communication, hypermedia language, virtual reality, sound and visual synchronization, communications standards, emerging technologies, and multimedia; emphasis on study and application of interactive multimedia design theory.

4574 Graphic Design Synthesis (3) Prereq.: consent of instructor based on review of student's portfolio; 6 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Project or internship approved by graphic design faculty committee.

4576 Digital Imaging Techniques (3) Prereq.: consent of instructor; 6 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Digital imaging technology and its application in art and design areas; scanning, image processing; emphasis on emerging technology and digital imaging peripherals; emphasis on digital imaging aesthetics, emerging technology, and preparing images for printed and multi-media applications.

7500 Graduate Graphic Design (3.5) 6 or 12 hrs. studio each. May be taken for a max. of 16 sem. hrs. of credit.

7553, 7554, 7555, 7556 Graduate Research in Design (3 each) Prereq.: consent of instructor; 6 hrs. studio each.

1847 Drawing and Composition (3) Prereq.: majors and Interior Design majors only. 6 hrs. studio. Basic principles of observation; emphasis on graphic analysis and delineation of spatial structure.

1848 Beginning Figure Drawing (3) Prereq.: majors/minors only, ART 1010 or 1847. 6 hrs. studio. Studies from the live model; introduction of graphic representation, structure, and form.

1849 Introduction to Painting (3) Prereq.: majors/minors only, ART 1008 or 1011, ART 1010 or 1847. 6 hrs. studio. Basic studio practice and theory in painting; traditional and modern materials and terminology; value and color experiences involving simple forms and spaces.

2870 Figure Drawing I (3) Prereq.: ART 1848. 6 hrs. studio. Continuing studies in life drawing.

2880 Intermediate Drawing (3) Prereq.: ART 1847 and 1848. 6 hrs. studio. Directed toward conceptual attitudes; analysis of structure and color in composition; individual criticism, class discussion.

2882 Abstract Painting (3) Prereq.: ART 1847, 1848, and 1849. 6 hrs. studio. Studio approaches to abstraction; individual criticism, class discussion.

2883 Water Media Painting (3) Prereq.: ART 1010 or 1847, and 1848. 6 hrs. studio. Objects and landscape; composition in water-soluble media on paper.

4800 Senior Project Painting (3) Prereq.: ART 4881 and 4889. 6 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Proposal and execution of a painting project under the direction of a major professor.

4841 Special Studies in Painting and Drawing (3) Prereq.: consent of instructor based on review of student's portfolio; 6 hrs. studio. Advanced studio work in a predetermined area of specialization.

4880 Figure Painting (3) Prereq.: ART 2879, 2881, or 4882. 6 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Studies from the nude model.

4881 Intermediate Painting (3) Prereq.: ART 2881, 2882, and 2885. 6 hrs. studio. Contemporary concepts in painting; approaches to imagery, symbolism, empathy; individual criticism, class discussion.
4884 Advanced Water Media Painting (3) Prereq.: ART 2883. May be taken for a max. of 12 sem. hrs. of credit. Advanced studio work in water-soluble media on paper.

4885 Advanced Painting (3) Prereq.: ART 4881. 5 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Research into advanced visual schema through self-initiated painting problems.

4886 Landscape Painting (3) Prereq.: ART 2882. 6 hrs. studio. May be taken for a max. of 12 sem. hrs. of credit. Observation and appreciation of development of the landscape.

4887 Advanced Figure Drawing I (3) Prereq.: ART 2879 or equivalent. 6 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Study of the human figure using various media.

4889 Advanced Drawing Workshop (3) Prereq.: 9 sem. hrs. of drawing. 6 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Directed studies for the advanced student.

7800* Graduate Painting (3) 6 or 12 hrs. May be taken for a max. of 36 sem. hrs. of credit.

7881 Painting Seminar (3) Prereq.: students currently enrolled in the graduate painting program. 3 hrs. seminar. Paper/pencil grading. May be taken for a max. of 18 sem. hrs. of credit. Discussion of formal and conceptual issues related to the medium.

PHOTOGRAPHY

2995 Basic Photography (3) Prereq.: majors/minors only. ART 1008 or 1011. 6 hrs. studio. Basic concepts and techniques of black and white photography; emphasis on photography as a visual form.

2996 Intermediate Photography (3) Prereq.: ART 2995. 5 hrs. studio. Continued investigation of basic photographic principles, utilizing specific subject areas drawn from major themes in visual art.

3921 Introduction to Digital Photography (3) Prereq.: ART 3994, 3996, and permission of instructor. 6 hrs. studio. Introduction to digital photographic tools and techniques.

3994 Advanced Photography I (3) Prereq.: ART 2996 and permission of instructor. 6 hrs. studio. Technical investigation of contemporary materials; critical testing of equipment, films, and printing papers; emphasis on process control as an expressive tool.

3995 Introduction to Digital Art (3) Prereq.: ART 3994, 3996, and permission of instructor. 6 hrs. studio. Introduction to digital photographic tools and techniques.

3996 Color Photography I (3) Prereq.: ART 2996 and permission of instructor. 6 hrs. studio. Introduction to color theory, color perception, and contemporary color printing materials; emphasis on color print portfolio.

3997 Experimental Photography (3) Prereq.: ART 3994 or 3996 and permission of instructor. 6 hrs. studio. Investigation of experimental camera and darkroom techniques; emphasis on the creative possibilities of photography and its manipulations.

4491 Special Studies in Photography (3) Prereq.: ART 3994 and permission of instructor. 6 hrs. studio. Exploration of emerging concepts in digital photography.

4494 Large Format Photography (3) Prereq.: ART 3994 and permission of instructor. 6 hrs. studio. Fundamentals of large format photography.

4996 Color Photography II (3) Prereq.: ART 3996 and permission of instructor. 6 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Continued investigation of color photography, color negative materials and printing processes.

4997 Non Issuer Photography (3) Prereq.: ART 3994 and permission of instructor. 6 hrs. studio. Exploration of historical photographic processes; emphasis on nonissuing printmaking techniques.

4998 Senior Project: Photography (3) Prereq.: permission of instructor. 6 hrs. studio. To be taken in the last full semester of the senior year. This course is not offered during the summer term. Proposal for and execution of an independent photography project under the direction of a major professor.

700* Graduate Photography (3) Prereq.: permission of instructor. May be taken for a max. of 36 sem. hrs. or 12 hrs. of studio. Emphasis on personal vision and contemporary issues in photography.

PRINTMAKING

1361 Introduction to Intaglio (3) Prereq.: majors/minors only. ART 1008 or 1011 and 1010 or 1047. 6 hrs. studio. Basic intaglio techniques; work in black and white.

1371 Introduction to Lithography (3) Prereq.: majors/minors only. ART 1008 or 1011 and 1010 or 1047. 6 hrs. studio. Planographic printing from stones in black and white.

1381 Introduction to Book Arts (3) Prereq.: ART 1381 or 1371 or consent of instructor. 6 hrs. studio. Basic theory, design, and production in the book arts.

2342 Papermaking (3) Prereq.: ART 1011. 6 hrs. studio. Introduction to the art and technology of making paper by hand.

2352 Relief Printmaking (3) Prereq.: ART 1010 or 1047. 6 hrs. studio. May be taken for a max. of 9 hrs. of credit. Investigation of relief printing techniques.

2362* Intermediate Intaglio (3) Prereq.: ART 1361, 6 or 12 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Continued investigation of advanced intaglio techniques.

2372* Intermediate Lithography (3,6) Prereq.: ART 1371, 6 or 12 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Continued investigation of advanced lithography techniques.

4000 Senior Project: Printmaking (3) Prereq.: 9 hrs. of 4900-level printmaking courses and senior status. 6 hrs. studio. May be taken for a max. of 6 hrs. of credit. This course is not offered during the summer term. Proposal and execution of a printmaking project under the direction of a major professor.

4041 Advanced Papermaking (3, 6) Prereq.: ART 2342, or permission of instructor. 6 or 12 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Advanced studies in papermaking, with a focus on developing an individual creative direction.

4561* Advanced Intaglio (3,6) Prereq.: ART 2382, 6 or 12 hrs. studio. May be taken for a max. of 12 sem. hrs. of credit. Advanced intaglio techniques.

4636 Special Studies in Printmaking (3,6) Prereq.: consent of instructor. 6 or 12 hrs. studio. May be taken for a max. of 12 sem. hrs. of credit. Individual creative research in a predetermined area of specialization.

4731* Advanced Lithography (3,6) Prereq.: ART 2372, 6 or 12 hrs. studio. May be taken for a max. of 6 sem. hrs. of credit. Advanced exploration, design, and production in the book arts; emphasis on self-initiated book art problems.

4931 Alternative Print Media (3) Prereq.: ART 3996 and 1371, 6 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Exploration of individual imagery in experimental and combined print media.

7000* Graduate Printmaking (3,6) 6 or 12 hrs. May be taken for a max. of 36 sem. hrs. of credit.

SCULPTURE

1762 Sculpture I (3) Prereq.: majors/minors only. ART 1008 or 1011. 6 hrs. studio. Introduction to a variety of materials and techniques used in contemporary sculpture. Students will explore contemporary and historical concepts and terminology for working in three-dimensional space.

2761 Metal Fabrication (3) Prereq.: ART 1762. 6 hrs. studio. Studies in sculpture involving various materials and methods, process and content including welding and metal fabrication.

2762 Mixed Media (3) Prereq.: ART 1762, 2764. 6 hrs. studio. Studies in mixed media sculpture involving alternative materials and approaches.

4741* Special Studies in Sculpture (3,6) Prereq.: consent of instructor based on review of student's portfolio. 6 or 12 hrs. studio. May be taken for a max. of 9 sem. hrs. of credit. Advanced studio work in predetermined area of specialization.
### BASIC SCIENCES • BASS

**6001 Topics in Physical Science for Elementary School Teachers**
- **Prereq.:** May be taken for a max. of 6 hrs. of credit. Also offered as PHYS 7777.
- **Prereq.:** May be taken for a max. of 12 hrs. of credit when topics vary.

**7777 Seminar in Astronomy and Astrophysics (1-6)**
- **Prereq.:** May be taken for a max. of 6 sem. hrs. of credit. Also offered as PHYS 7777.

**7783 Topics in Astronomy and Astrophysics (3)**
- **Prereq.:** May be taken for a max. of 6 hrs. of credit. Also offered as PHYS 7783.

### BIOLOGICAL ENGINEERING • BE

**1250 Introduction to Engineering Methods (2)**
- **Prereq.:** 6 hrs. lab. Familiarization and interpretation of an engineering design; graphical expression of engineering design using computer-aided drafting.

**1252 Biolab for Engineers (2)**
- **Prereq.:** credit or registration in BIOL 1201. 1 hr. lecture; 3 hrs. lab. Effect of variability and constraints of biological systems on engineering design; planning for natural resource data management; measurement of temperature, pressure, flow, strain, and vibration in biological systems; microbiocounter data loggers and computer data acquisition systems.

**2352 Biological Engineering (3)**
- **Prereq.:** BE 2352. 3 hrs. lab. Characterization of biological phenomena in engineering design; relationships among parameters using linear and nonlinear statistical expressions; case studies of engineering design solutions.

**3190 Professionalism for Biological Engineers (1)**
- **Prereq.:** senior standing in the College of Engineering. Ethical standards, communication, professional societies, goal setting, safety, and time management.

**3249, 3250 Engineering Practice (1-3.5-3.5)**
- **Prereq.:** consent of instructor. Pass-fail grading. A minimum of 100 hrs. of full-time employment in an industry participating in the summer program. Only 1 sem. hr. will be allowed toward the degree. 1201. Credit will not be given for this course and BIOL 1201.

**3320 Mechanical Design for Biological Engineers (3)**
- **Prereq.:** CE 3400, credit or registration in CE 2460 or ME 3153. 2 hrs. lab; 3 hrs. lab. Term project in mechanical design. Philosophy of mechanical design for biological engineering; materials for construction; frame design; power transmission.

**3340 Process Design in Biological Engineering (3)**
- **Prereq.:** EE 2950, CE 2200, and credit or registration in ME 3333. 3 hrs. lab; 3 hrs. lab. Design applications in biological engineering sciences of fluid mechanics and thermodynamics; electrical machines and control systems.

**3571 Irrigation Fundamentals and Management (3)**
- **Prereq.:** consent of instructor. For majors in agriculture, design, and natural sciences. Cannot be used to fulfill College of Agriculture core curriculum, agriculture, horticulture, and other horticultural applications of irrigation; design of irrigation systems from water source to application and uptake by irrigation application of techniques from sprinkler to micro; friction loss in system components; irrigation scheduling; and auditing/monitoring/evaluating system performance.

**3381 Nonpoint Source Pollution Engineering (3)**
- **Prereq.:** BE 2352 and EVEG 3110. 2 hrs. lecture; 3 hrs. lab. Water quality regulations and regulations for the agricultural community: production, treatment, and disposal of agricultural and food processing wastes; management of agricultural source pollution; bi-product utilization; land application; wetland restoration; stream sampling and analysis; re-aeration studies and monitoring; and stormwater pollution and control.

**3400 Environmental Engineering II (3)**
- **Prereq.:** CHEM 2060 (2261), EVEG 2060, See EVEG 3400. 3 sem. hrs. Special Project 1 (1-4)

**3401 Special Project 1 (1-4)**
- **Prereq.:** consent of instructor. May be taken for a max. of 6 hrs. of credit. Library research, experimental and/or theoretical investigation, and written report in form of engineering report.

**3490 Independent Study in Biological Engineering (1-4)**
- **Prereq.:** senior standing. Written engineering report required. May be taken for a max. of 6 hrs. of credit when topics vary. Biological engineering practice; library research, experimental and/or theoretical investigation.

**7301 Similitude in Biological Engineering Research (3)**
- **Prereq.:** BE 4383. Advanced topics in statistical hydrology, flow theory, evapotranspiration, transport of pollutants, drainage, irrigation, erosion, sediment transport, and sediment applied to rural fields and watersheds.

**7306 Agricultural Systems Engineering (3)**
- **Prereq.:** BE 4292 or equivalent. Applications of systems approach to engineering problems in agriculture; queuing theory; modeling and simulation; linear programming; decision support systems and expert systems.

**7340 Food and Bioprocess Engineering (3)**
- **Prereq.:** BIOL 2051; consent of instructor. May be taken for a max. of 12 hrs. of credit when topics vary.

**7350 Advanced Instrumentation and Control for Biomedical Engineering (3)**
- **Prereq.:** BE 2350 and MATH 2065. 2 hrs. lecture; 3 hrs. lab. Theory of measurement and feedback integrated with applied design work with biological systems; focus areas include: aquaculture and precision farming, environmental applications, bioprocess, and biomedical measurement and control concepts.

**7352 Advanced Transport Phenomena in Biological Engineering (3)**
- **Prereq.:** BE 4352. Transient heat and mass transfer in biological materials and systems; mathematics describing active and passive cellular transport; emphasis on numerical solution techniques for heat and mass flow in nonideal, heterogeneous systems, including kinetic and thermodynamic considerations.

**7361 Biological Reactor Systems for Agricultural Waste Treatment (3)**
- **Prereq.:** BE 4141. Design of biological reactor systems for treatment of agricultural and food processing wastes; utilizing and developing kinetic models for suspended and attached-growth cultures; characterization of agricultural wastes and wastewater system; nutrient recovery, pathogen survival, odor reduction, and by-product recovery goals.

**7363 Advanced Aquacultural Engineering (3)**
- **Prereq.:** BE 4380. Advanced topics in aquacultural aeration, oxygenation, disinfection of aquacultural systems, and aquaculture wastewater treatment; integration with traditional agricultural production.

**7500 Seminar (1)**
- **Prereq.:** graduate standing in engineering. Only 1 sem. hr. of credit will be allowed toward the degree. Pass-fail grading.

**7909 Advanced Topics in Biological Engineering (1-4)**
- **Prereq.:** consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. One or more phases of advanced biological engineering practice.

**8000 Thesis Research (1-12 per sem.)**
- **S’77’/C’ grading.**
1005 Introductory Biology Laboratory (2) F.S.Su
Preques: credit in BIOL 1001 or credit and/or registration in BIOL 1002; 1 hr. lecture; 3 hrs. lab. Credit not allowed for students who have had BIOL 1208 or 1209. Basic principles of biology including cell biology, genetics, ecology, evolution, diversity, and systematics. 

1101 Microorganisms and Man (3) Credit will not be given for both this course and BIOL 2051. Not open to biological science majors. Basic laboratory skills for handling and observing microorganisms; demonstration of features of microorganisms discussed in BIOL 2051.

1201 Biology for Science Majors I (3) Preques: credit or registration in BIOL 1001. Credit will not be given for both this course and BIOL 1005. General concepts in cellular structure, cellular metabolism, cellular communication, and genetics. 

1202 Biology for Science Majors II (3) Preques: BIOL 1201. Primarily for students in science, agriculture, or education. Credit will not be given for both this course and BIOL 1005. General concepts in evolution, ecology, and the function of organisms.

1207 HONORS: Biology Laboratory for Science Majors (1) V Preques: credit or registration in BIOL 1201 and BIOL 2300 at Louisiana College. Credit will not be given for this course and BIOL 1002 or 1208. 3 hrs. lab. Topics include biochemistry, enzymes, cell structures, osmosis, cellular respiration, photosynthesis, cell division, genetics, and ecology.

1208 Biology Laboratory for Science Majors I (1) Preques: credit or registration in BIOL 1201. Credit will not be given for this course and BIOL 1005 or 1207. 3 hrs. lab. Primarily for students majoring in science, agriculture, or education.

1209 Biology Laboratory for Science Majors II (1) Preques: credit in BIOL 1208, credit or registration in BIOL 1202. Credit will not be given for this course and BIOL 1005. Primarily for students majoring in science, agriculture, or education.

1503 HONORS: Biology Science Majors II (4) Preques: BIOL 1201 and 1209 or 1208 and consent of instructor. 3 hrs. lecture; 3 hrs. lab. Credit will not be given for this course and BIOL 1002 or 1208 or 1209. Similar content as BIOL 1202 and 1209 with specific content and topics for qualified students.

2051 General Microbiology (4) F.S.Su Preques: BIOL 1202, 1209 and CHEM 1001, 1002, 1201 or 1205 or 1206. 3 hrs. lecture; 3 hrs. lab. Credit will not be given for both this course and BIOL 1005 or 1207. 3 hrs. lab. Primarily for students majoring in science, agriculture, or education.

2083 The Elements of Biochemistry (3) F.S. Preques: CHEM 1051 and permission of instructor. Credit will not be given in BIOL 2083 and CHEM 1002. College of Basic Sciences. Nature and physiological uses of natural substances of interest to education, agriculture, and home economics majors.

2155 Principles of Genetics (4) F.S. Preques: BIOL 1202, 1209, and enrollment or credit in CHEM 1002. Fundamental laws of heredity

2160 Human Physiology (3) F.S.Su BIOL 1001 or 1201 recommended. May not be taken for credit by student majoring in a biological science or premedical students.

2200 Introduction to Research in Biological Sciences (1) Preques: 6 sem. hrs. of biological sciences and consent of the instructor. Pass-fail grading. Introduction to research with emphasis on the Department of Biological Sciences.

2300 Information Retrieval in the Sciences (1) F.S. Preques: CHEM 2262 or equivalent. Modern methods of information retrieval from abstracts, scientific research literature, computerized index programs, and key-word citation systems. BIOL 1201 or -credit or registration.

2500 Natural History of the Vertebrates (4) Preques: BIOL 1201, 1208, and 4 hrs. of additional biological sciences with laboratory. 2 hrs. lecture; 6 hrs. lab/field work. Divisional classification of the fishes, amphibians, reptiles, and birds; emphasis on Louisiana species.
7093 Plant Population Biology (3) Prereq.: BIOL 4253 or equivalent. Focus on dynamic dynamics, reproductive systems, life histories, competition, niche theory, and interactions between plants and predators, pathogens, and symbionts.

7110 Molecular Evolution (3) Prereq.: BIOL 3040 or equivalent. Evolution of genes and genomes. Nucleotide substitution rates; positive selection; gene duplication and conversion; transposable elements, evolution of genome size.

7111 Systematic Biology (4) Prereq.: 8 sem. hrs. of 4000-level biological science courses or equivalent; introductory courses in genetics and evolution. Includes molecular systematics, cladistics, phylogenetic analysis, and the historical development of biological classification, with an emphasis on the importance of understanding the evolutionary relationships among organisms. Requires a strong background in biology and a commitment to rigorous analytical methods.

7120 Molecular Ecology (3) Prereq.: consent of instructor. 2 hrs. lecture, 3 hrs. lab. and field work. Also offered as OCS 7317. Physical, chemical, and biophysical environmental factors affecting distribution of marine fauna; communities representative of each of the ecological subdivisions of the world's oceans treated with respect to species composition, food webs, and seasonal changes; human impact on the marine environment.

7152 Advanced Vertebrate Anatomy (4) Prereq.: BIOL 3152. 2 hrs. lecture; 6 hrs. lab.

7155 Energy Transducing Membrane Proteins (3) Prereq.: BIOL 4110 and 4093 or equivalent. Structure and function of energy transducing membrane proteins including bacteriorhodopsin, ATP synthase, cytochrome complexes, the bacterial reaction center, photosystem I and II and antennae pigment protein complexes.

7160 Phycology (3) V Prereq.: BIOL 4110 or equivalent. Phylogeny of cyanobacteria and chlorophyta; ecological aspects of marine phytoplankton; spore and gamete structure and function; physiology of flowering plants; bryophytes and lichens.

7170 Molecular Genetics (3) Prereq.: BIOL 3156. 1 hr. lecture; 2 hrs. lab. Service fee. Classical and contemporary theory, techniques, experiments, and independent investigations concerning vertebrate and invertebrate development.

7191 Molecular and Cellular Biology (3) Prereq.: BIOL 4124 or equivalent. Structure, function, and regulation of macromolecules in microbial systems; production and purification of recombinant DNA. Requires a strong background in biology and a commitment to rigorous analytical methods.

7192 Molecular Microbiology and Immunology (3) Prereq.: BIOL 4236, and either BIOL 4093 or equivalent. Structure, function, and regulation of macromolecules in microbial systems; production and purification of recombinant DNA. Requires a strong background in biology and a commitment to rigorous analytical methods.

7268 Seminar (1-3 per sem.) "S" Credit. May be repeated for a max. of 9 sem. hrs. credit. Undergraduate credit only. May be taken for a max. of 9 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7284 Proteolysis (3) V Prereq.: BIOL 4913 or equivalent. Catalysis of protein breakdown; control of cell function; regulation of cell proliferation; control of cell death.

7286 Seminar in Virology (1) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. credit. Topics in the field of virology.

7287 Viral Pathogenesis (6) Prereq.: consent of instructor. Involves the study of viral infections at the cellular, molecular, and epidemiological levels. Requires a strong background in biology and a commitment to rigorous analytical methods.

7289 Viral Genetics (3) V Prereq.: BIOL 4914 or equivalent. Function of regulatory elements in viral genomes; structure and function of complex carbohydrates including polysaccharides, glycoproteins, and glycolipids; immunology and virology.

7290 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7291 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7292 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7293 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7294 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7295 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7296 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7297 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.

7298 Seminar in Virus Taxonomy (1) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. credit. Undergraduate credit only. May be repeated for a max. of 6 sem. hrs. when topics vary. Specialized topical courses in current biological research.
opportunities; legal concerns of franchising; development starting and managing a new franchise; characteristics of commercialization; barriers to creativity and innovation; and innovation in product, service, or idea generation that support relationship; survival skills as a son or daughter in financing situations; structuring of venture capital; the 7420 Financing New Ventures II (1.5) Prereq.: BADM 7208. Focus on cases and projects taken from actual financing situations; structuring of venture capital; the process of making investments in emerging companies.

7421 Financing New Ventures II (1.5) Prereq.: BADM 7420. Focus on cases and projects taken from actual financing situations; structuring of venture capital; the process of making investments in emerging companies.

7430 Family Business Management (3) Key issues and conflicts facing individuals and families involved in business relationships; family business culture; entrepreneurial influences; career planning; professional support relationship; survival skills as a son or daughter in a family business.

7432 Innovation and Creativity (5) Role of creativity and innovation in product, service, or idea generation that may eventually lead to business formation and commercialization; barriers to creativity and innovation; alternative problem-solving approaches.

7440 Franchise Development (3) Important factors in starting and managing a new franchise; characteristics of franchising and barriers to franchising opportunities; legal concerns of franchising; development of appropriate strategies. Development of franchising business plan to include marketing, finance, management, financial projections, and operations manual outline.

7441 Franchise Planning (1.5) Prereq.: BADM 7440. Development of franchising business plan to include marketing, finance, management, financial projections, and operations manual outline.

7460 Special Topics in Entrepreneurship (1.5) May be repeated for a max. of 6 hrs. of credit when topics vary. In-depth coverage in special topics such as women-owned business, home-based business, exporting for small business, and team-based strategy implementation and managing projects.

7470 Internship in Entrepreneurship (1.5) May be repeated for a max. of 6 hrs. of credit when topics vary. Understanding actual entrepreneurial situations; creating an integrated strategy; implementing and managing projects.

7480 Independent Study in Entrepreneurship (1.5) Prereq.: departmental approval. May be repeated for a max. of 6 hrs. of credit when topics vary. Detailed study of a specific area of entrepreneurship.

7600 Consulting Field Project (3) Prereq.: Entrepreneurship Specialization or permission of instructor. Strategic focus based field project based on consulting advice to organizations with the goal of improving their performance. Emphasis on experiential approaches that provide a participative type of learning about the crucial issues faced by organizations.

7900 Human Factors in Business and Industry: Current Problems (3) May be taken for a max. of 6 hrs. of credit when topics vary. Human factors related to business problems.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

8900 Pre-dissertation Research (1-9) May be repeated for credit.

9000 Dissertation Research (1-12 per sem.) "S"/"U" grading.

BUSINESS COMMUNICATION • BCOM

5200 Executive Communication (3) Developing and applying communication strategies; analysis of business situations and development of appropriate strategies; written, oral, and interpersonal applications; impact of technologically mediated communication.

BUSINESS LAW • BLAW

3200 Introduction to Law (3) Not open to students in the E. J. Ourso College of Business. Credit will not be given for both this course and BLAW 3201 and 4203. Fundamentals of the American legal system; basic principles of the law of contracts, commercial paper, agency, partnerships, torts, and crimes; case materials used to demonstrate legal analysis and reasoning.

3201 Business Law (3) Credit will not be given for both this course and BLAW 3200, FIN 3200, or 3201. Development of Anglo-American common law system, the Louisiana civil law system, law of contracts, torts, agency; business aspects of criminal law; ethical facets of the legal environment; case materials used to demonstrate problem analysis.

3202 Commercial Transactions (3) Prereq.: BLAW 3201. Credit will not be given for both this course and BLAW 3200, FIN 3200, or 3201. Louisiana law and Federal legislation in the following areas: employment law, employers’ compensation, business entities, intellectual property, agency, insurance, sales, donations, leases, security devices, bankruptcy, and commercial paper.

3203 Sports Law (3) Credit will not be given for both this course and FIN 3200. Business and legal sports aspects, particularly professional and collegiate level; antitrust laws; labor law and collective bargaining; contract law and player agents; professional franchise location; college athletics and the NCAA; equal opportunities and Title IX; licensing and trademark rights; tort issues.

3203 Commercial Transactions for Accountants (3) Prereq.: BLAW 3201. Credit will not be given for both this course and BLAW 3200, 3202, FIN 3202, or 3203. Louisiana law and Federal legislation in the following areas: employment law, employers’ compensation, business entities, intellectual property, agency, insurance, sales, donations, leases, security devices, bankruptcy, and commercial paper.

3203 Commercial Transactions for Accountants (3) Prereq.: BLAW 3201. Credit will not be given for both this course and BLAW 3200, 3202, FIN 3202, or 3203. Specifically for accounting majors. Legal concepts underlying sale of goods; commercial paper; security interests, securities regulation, accountants’ malpractice, negotiated instruments; application of the Uniform Commercial Code and preparation for the CPA examination.

CHEMICAL ENGINEERING • CHE

2160 Computer Technology for Chemical Engineering Systems (1.5) F Prereq.: MATH 1350. Introduction to operating systems, programming techniques, and software packages used in the solution of chemical engineering problems.

2171 Chemical Engineering Fundamentals: Material and Energy Balances (3) F Prereq.: MATH 1350 and CHEM 1371. Emphasis on applications and concepts used to make chemical engineering calculations; techniques used in these calculations applied to typical industrial problems.

2175 Mathematical Modeling of Chemical Engineering Systems (3) F Prereq.: MATH 2090, CHEM 2160, and 2177. Basic concepts and techniques in analysis of engineering processes; mathematical description of physical systems and application of modern computers to solution of resulting equations.

3190 Chemical Equilibrium and Kinetics of Environmental Processes (3) F Prereq.: CHEM 3172 or CHEM 3333 or equivalent. Not open to chemical engineering majors. Credit will not be given for both this course and CHEM 4190. Introductory chemical thermodynamic concepts extended to heterogeneous equilibrium, dilute solutions, surfaces and colloids of significance in environmental engineering processes; chemical reaction kinetics concepts applied to the environment; applications to waste treatment process design, property estimations for elucidating the fate and transport of chemicals in the environment.

3191 Transport Sciences: Momentum Transfer (3) F Prereq.: CHEM 2171, MATH 2090, and credit or registration in CE 2149. Fundamentals of heat and mass transfer; similarities of heat, mass, and momentum transfer and their interrelation; engineering applications.

3192 Transport Sciences: Heat and Mass Transfer (4) F Prereq.: CHEM 3103 or CE 2200, and MATH 2063 or 2090. Fundamentals of heat and mass transfer; similarity of heat, mass, and momentum transfer; and their interrelation; engineering applications.

3210 Process Economics and Optimization (3) F Prereq.: CHEM 2171 and credit or registration in CHEM 3102 and 3173. Application of optimization principles to the economic design of chemical engineering unit operations.

3212 Chemical Engineering Thermodynamics (3) F Prereq.: CHEM 2171. Basic concepts and chemical engineering applications of thermodynamics; emphasis on flow processes and real gas thermodynamics.

3213 Heat and Mass Transfer (3) F Prereq.: CHEM 3103 or CE 2200, and MATH 2063 or 2090. Fundamentals of heat and mass transfer; similarity of heat, mass, and momentum transfer and their interrelation; engineering applications.

3217 Chemical Engineering Turbulence (3) F Prereq.: CHEM 2171. Theory of vapor-liquid, liquid-liquid, and solid-liquid equilibrium and flows in discontinuous systems; application of thermodynamic theory to the correlation of equilibrium data and the prediction of equilibrium compositions.

3249, 3250 Engineering Practice (1-3, 1-3) Su only. Prereq.: consent of instructor. Pass-fail grading. A minimum of 6 weeks of full-time employment by an industry participating in the summer program. Selected engineering problems in an industrial environment.

3271, 3272 Senior Projects (1-2, 1-2) Prereq.: consent of department. Pass-fail grading. Experimental and theoretical investigations including library research.

4151 Unit Operations Design (4) F Prereq.: CHEM 3102, 3171, and 3173. 3 hrs. lecture; 3 hrs. lab. Unit operations analyzed as applications of chemical engineering fundamentals and transport sciences; use of these principles in design calculations.

4162 Unit Operations Laboratory (3) F Prereq.: CHEM 3104 and credit or registration in CHEM 4151. 1 hr. lecture; 6 hrs. lab. Obtaining and interpreting data needed to solve typical problems in design or operation of chemical engineering equipment.

4172 Process Design (4) F Prereq.: CHEM 4151 and 4190. 3 hrs. lecture; 3 hrs. lab. Chemical plant design from initial concept through preliminary design; computer aid; sequence of operations; process flow diagrams, equipment cost estimation, economic analysis, safety, and environmental issues; computer-aided process design.

4190 Chemical Reaction Engineering (3) F Prereq.: CHEM 3102 and 3173; or equivalent. Basic principles of reactor design; selection of best design alternatives; achievement of optimum reactor operation.
4199 Process Dynamics (3) Prereq.: CHE 3171 and completion of prerequisite for CHE 4151. Principles and practices of process dynamics and automatic control; mathematical modeling of process dynamics; feedback control, and multivariable processes.

4204 Technology of Petroleum Refining (3) Prereq.: credit or registration in CHE 4151. Catalytic and thermal processes used in petroleum refining; application of scientific-technological principles in processes such as catalytic cracking, reforming, coking, alkylation, isomerization, and hydrossulfiding; emphasis on applied catalysis and its importance in current engineering design.

4205 Technology of Petrochemical Industry (3) Prereq.: CHE 4151. Processes used in the manufacture of petroleum-based chemicals; application of scientific and engineering principles in the production of hydrocarbons, alcohols, olefins, aromatics, aldehydes, ketones, acids, rubber, and other polymers; emphasis on catalysis by transition-metal complexes.

4210 Industrial Catalysis (3) Prereq.: credit or registration in CHE 4190. Principles of the industrial utilization of heterogeneous catalysis; topics include sorption phenomena, methodology in catalyst preparation, characterization and evaluation of catalysts, diffusion and reaction in porous catalysts, and a survey of major industrial processes.

4211, 4222 Senior Research (1, 2) Prereq.: credit or registration in 3102, 3104, and 3173, gpa of at least 2.8 for (CHE 4211) and completion of CHE 4222 is a prerequisite for 4222. Not open to graduate students; 1 hr. lecture (4211); 3 hrs. lab (4222). Comprehensive research project of a theoretical or experimental nature, involving a team effort over two semesters (spring and fall periods).

4253 Introduction to Industrial Pollution Control (3) Prereq.: CHE 3102 or equivalent introductory course in transport science. Quantitative application of chemical engineering principles to removal of objectionable components from effluents, with emphasis on industrial processing effluents; currently available techniques for controlling air and water pollution and solid wastes; concepts of pollution control through basic chemical engineering principles adapted by specific examples.

4260 Biochemical Engineering (3) Prereq.: credit or registration in CHE 4190 or equivalent. Application of chemical engineering concepts to fundamentals of microbiological and biochemical systems; problems peculiar to industrial operations involving microbial processes; growth conditions and requirements, metabolites, product separations, enzyme catalysis, sterilization, and aseptic operations.

4263 Environmental Chemodynamics (3) Prereq.: CHE 3102 or equivalent introductory course in transport science. Chemical engineering principles applied to preparation, handling, and applications of nanomaterials. Emphasis will be on manufacturing and processing steps. Case studies will be developed to focus on specific device or material applications.

4273 Electrochemical Engineering (3) Prereq.: CHE 3102 or equivalent introductory course in transport science. Principles of chemical engineering applied to problems; potential distribution theory, kinetics, mass transport, and thermodynamic principles; quantification of controlling factors in microfabrication, corrosion, battery design, and electrochemical synthesis.

4285 Principles of High Polymers (3) Prereq.: CHE 3172 and CHEM 3401. Solution and solid-state physics of high polymers; microstructure of polymer chains and effect on macromolecular physical properties of the final product.

4296 Development of Mathematical Models (3) Prereq.: CHE 2176 and 3102; or equivalent. Mathematical descriptions of systems encountered in chemical engineering developments. Concepts and techniques in the presentation of data, distribution parameter systems, formulation of ordinary and partial differential equations, continuous and discrete analogs, and matrix formulations; models developed for systems ranging from simple elements to plant-scale.

4410 Special Topics in Chemical Engineering Design (3) May be taken for a max. of 6 sem. hrs. when topics vary. One or more phases of current chemical engineering design.

4420 Special Topics in Chemical Engineering Science (3) May be taken for a max. of 6 sem. hrs. when topics vary. One or more phases of current chemical engineering science.

7110 Mathematical Methods in Chemical Engineering (3) Prereq.: CHE 4285 or equivalent. Review of mathematical tools and formulation and application of analytical and approximate techniques for the solution of linear and nonlinear differential equation models in chemical engineering systems.

7120 Chemical Engineering Thermodynamics (3) Prereq.: CHE 4172 or equivalent. Thermodynamic properties, first and second laws of thermodynamics, entropy, Maxwell relations, and relationship of thermodynamic properties to intermolecular forces; physical equilibrium with emphasis on partial free energy, fugacity, Raoult's law, K-equations of state, and activity coefficients; chemical equilibria and free energies; fundamentals of statistical mechanics.

7130 Fundamentals of Transport Phenomena (3) Prereq.: CHE 4172 or equivalent. Foundations of heat, mass, and momentum transfer in continuous and porous systems; boundary layer theory; turbulence; buoyancy-induced flows; heat and mass transfer by diffusion, convection, and turbulence.

7140 Chemical Reaction Engineering (3) Prereq.: CHE 4172 or equivalent. Basic principles of chemical kinetics, fluid flow, heat transfer, and mass transfer used in design of chemical reactors; chemical equilibrium, chemical kinetics, design of isothermal reactors, effect of temperature on nonisothermal reactors, and solid-gas catalytic reactors.

7314 Optimization (3) Techniques of optimization including analytical optimization; linear programming; geometric and dynamic programming; and variational methods with application to systems of interest to chemical engineers.

7352 Distillation and Other Separation Processes (3) Mathematical models, phase equilibria, and calculation procedures related to design and behavior of distillation columns, absorbers, extractor-settlers, etc.; emphasis on computer techniques.

7512 Advanced Chemical Engineering Analysis (3) Prereq.: CHE 7110 or equivalent. May be taken for a max. of 6 hrs. of credit with consent of department. Topics in chemical engineering analysis, such as perturbation methods, matched asymptotic expansions, vector and tensor calculus, and numerical techniques.

7522 Advanced Chemical Engineering Thermodynamics (3) Prereq.: CHE 7120 or equivalent. May be taken for a max. of 6 hrs. of credit with consent of department. Thermodynamics of chemical engineering processes, such as nonequilibrium thermodynamic properties.

7523 Advanced Chemical Engineering Fluid Mechanics (3) Prereq.: CHE 7120 or equivalent. May be taken for a max. of 6 hrs. of credit with consent of department. Chemical engineering flow processes, such as turbulence; boundary layer theory; thermal stability, compressible flow, multiphase flow, chemical reacting flows, and nonNewtonian and viscoelastic fluids.

7534 Advanced Chemical Engineering Heat Transfer (3) Prereq.: CHE 7120 or equivalent. May be taken for a max. of 6 hrs. of credit with consent of department. Chemical process heat transfer; phase change and moving boundary problems; heat transfer mechanisms, natural and forced convection, radiation, and combined heat and mass transfer.

7536 Advanced Chemical Engineering Mass Transfer (3) Prereq.: CHE 7130 or equivalent. May be applied to a max. of 6 hrs. of credit with consent of department. Transport of mass in chemical engineering processes, such as diffusion equations, models for mass transport in multicomponent, multiphase, stationary, flow, and reacting systems.

7542 Catalysis (3) Prereq.: CHE 7140 or equivalent. Heterogeneous catalysis; elementary, physical, and solid-state spectroscopies, and reaction mechanisms as applicable to fundamental and industrially significant processes.

7544 Chemical Kinetics and Reaction Mechanisms (3) Prereq.: CHE 7140 or equivalent. Gas-phase reactions and reaction approach for the study of reaction mechanisms in collision, transport state, RRK, and RRKM theories, bond energy correlations, kinetics of complex reaction systems, fast reactions, computer modeling, and sensitivity analysis.

7572 Advanced Automatic Process Control (3) Prereq.: CHE 4190 or equivalent. May be taken for a max. of 6 hrs. of credit with consent of department. Theory and use of digital computers for process control; relationships between computer and process control schemes, control algorithms, valve dynamics, and modeling techniques.

7582 Polymerization and Polycondensation Processes (4) Prereq.: CHEM 4160 or 4562 or CHE 3855 or equivalent. 3 hrs. lecture; 3 hrs. demonstration/lab. Also offered as CHEM 7261. Preparation and characterization of high polymers; typical commercial procedures for plastics production.

7592 Design Problems in Chemical Engineering (3) Prior to registration students should discuss a prospective design problem with faculty member under whom they plan to study and obtain departmental approval. Design problem cannot be directly related to student's research. Integration of technology into design of systems or plants for accomplishing specific objectives; emphasis on producing a design package considering technical, economic, timing, and scheduling aspects of the project.

7594 Advanced Computer-Aided Process Design (3) Prereq.: CHE 4172 or equivalent. May be taken for a max. of 6 hrs. of credit with consent of department. Computer-aided process design applied to chemical process industries, such as sequential modular flow sheeting, simultaneous solution schemes, decomposition strategies, and various simulation software.

7700 Advanced Topics in Chemical Engineering (3) May be taken for a max. of 9 hrs. of credit with consent of instructor. One or more phases of advanced chemical engineering courses.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

9000 Dissertation Research (1-12 per sem.) "S"/"U" grading.

CHEMISTRY • CHEM

Laboratory Expenses • Students registering for laboratory courses in chemistry are charged a laboratory fee of $50 per semester. Corequisites • A student may not continue in a course if the corequisite course is dropped prior to the last day of the midsemester examination period.

General education courses are marked with star (★).

★ 1001 Chemical Fundamentals (3) Prereq.: ACT mathematics score of at least 21 or eligibility for MATH 1021. For those students whose curricula require only one year of chemistry or physics, MATH 1021 may be taken as a preparatory course for CHEM 1201. An overview of chemical theory and principles with emphasis on the role of chemistry in the modern world.

★ 1002 Chemistry of Life and the Environment (3) Prereq.: CHEM 1001 or 1201 or 1421. An overview of organic chemistry and biochemistry; emphasis on the molecular basis for the biological, materials, and environmental sciences.

1200 General Chemistry I Supplement (1) Prereq.: registration in CHEM 1201 and MATH 1023. Pass/fail grading. One 90 minute session per week. Intensive treatment of concepts, mathematical operations, and problem-solving techniques commonly encountered in CHEM 1201, with emphasis on concept application.

★ 1201 General Chemistry I (3) Prereq.: credit or registration in MATH 1022, 1023, 1431, 1550, or 1551; or concurrent registration in MATH 1022 and CHEM 1200. Credit will not be given for this course and CHEM 1421. For science/engineering curricula. Modern chemical theories and principles; quantitative approach and problem solving; descriptive chemistry of selected elements and compounds.

★ 1202 General Chemistry II (3) Prereq.: CHEM 1201 or 1421. Credit will not be given for both this course and CHEM 1422. For science/engineering curricula. Continuation of CHEM 1201. Advanced emphasis on solution chemistry and a quantitative approach; descriptive chemistry of selected elements and compounds from the main groups and the first transition series.
1421 HONORS: General Chemistry (3) Prereq.: CHEM 1201, or consent of department chair. Chemistry majors who qualify should take this course. Credit will not be given for both this course and CHEM 1202. \(3000\) Credit for well-prepared students with a special interest in chemistry. Laboratory usage deposit. Fundamental chemical operations, a selection of experiments, and elementary quantitative techniques. \(2001\) Analytical Chemistry (2) Prereq.: CHEM 1202 or 1422. Basic principles and practices of modern methods of analysis. \(2002\) Analytical Chemistry Laboratory (2) Prereq.: CHEM 2001 and 1202. 6 hrs. lab. Credit will not be given for both this course and CHEM 2002. Laboratory usage deposit. Experiments in modern methods of analysis. \(2003\) Honors Analytical Chemistry Laboratory (2) Prereq.: CHEM 2001, 1202, or 1421. 6 hrs. lab. Credit will not be given for both this course and CHEM 2002. Primarily for chemistry majors. Laboratory usage deposit. Experiments in modern methods of analysis. \(2580\) Survey of Organic Chemistry (3) Prereq.: CHEM 1202 or 1422. Credit will not be given for both this course and CHEM 2261. Aliphatic and aromatic compounds; biological aspects of organic chemistry. \(2581\) Organic Chemistry (3) Prereq.: CHEM 1202 or 1422. Credit will not be given for both this course and CHEM 2060. Representative classes of organic compounds; emphasis on varied professional goals of students, e.g., life sciences, physical sciences, engineering. \(2582\) Organic Chemistry (3) Prereq.: CHEM 2261. Continuation of CHEM 2261. \(2584\) Organic Chemistry Laboratory (2) Prereq.: CHEM 1202, and CHEM 2006 or credit or registration in CHEM 2262 or 2462. 6 hrs. lab. Same as CHEM 2463. Laboratory usage deposit. Introductory laboratory operations of organic chemistry. \(2586\) Honors Organic Chemistry I (3) Prereq.: a grade of “A” or “B” in CHEM 1202 or CHEM 1422. Honors majors who qualify should take this course. For well-prepared students with a special interest in chemistry. Credit will not be given for both this course and CHEM 2262. Continuation of CHEM 2461. \(2588\) Honors Organic Chemistry II (3) Prereq.: CHEM 2461 or a grade of “A” in CHEM 2261. Chemistry majors who qualify should take this course. For well-prepared students with a special interest in chemistry. Credit will not be given for both this course and CHEM 2262. \(2463\) Honors Organic Chemistry Laboratory (2) Same as CHEM 2304; primarily for chemistry majors. Laboratory usage deposit. \(2900\) Research Internship I (1-2) Prereq.: CHEM 1203 or 1431. May be taken 6 times for credit; no more than 8 sem. hrs. of credit may be earned in CHEM 2900 and 3900. May be elected with special permission of professor directing the work. Pass-fail grading. Introduction to chemical research by association with departmental research groups. \(3000\) Science Teaching in Secondary I: The Learner (1) See BIOL 3001. \(3002\) Science Teaching in Secondary II: Technology in Science Education (1) See BIOL 3002.
3102 Advanced Chinese (3) Prereq.: CE 2200 or equivalent. Introduction of authentic materials of increasing complexity, with a variety of topics; emphasis on the use of relativistically sophisticated structures vocabulary in complex communication.

3103A Advanced Chinese (3) Prereq.: CHIN 3101 or equivalent. Introduction of authentic materials of increasing complexity on a variety of topics; emphasis on the use of relativistically sophisticated structures vocabulary in complex communication.

3801 Traditional East Asian Literature (3) Taught in English, knowledge of East Asian languages not required. Also offered as JAPN 3081. Introduction to the genres, themes, and representative works of traditional Chinese and Japanese literature; emphasis on critical reading.

3802 Korean Literature (3) Taught in English; knowledge of East Asian languages not required. Also offered as JAPN 3082. Introduction to the genres, themes, and representative works of modern Chinese and Japanese literature; emphasis on critical reading.

4400 Topics in Chinese Culture (3) May be taken for a max. of 6 hrs. of credit. Permission of department required. Directed readings in classical Chinese or Chinese literature.

5701 Chinese Culture and Language (3) Prior knowledge of Chinese is required. Introduction to Chinese culture with a focus on business; basic Chinese language for business.

CIVIL ENGINEERING • CE

In the Department of Civil Engineering, the second digit of the course number denotes the subject area of the course, as follows: (including CHM 1200, CHEM 8000, 9900) 1) environmental; 2) water resources; 3) geotechnical; 4) structures; 5) surveying; 6) transportation; 7) general.

2200 Fluid Mechanics (3) Prereq.: grade of "C" or better in CE 2450. Statics and dynamics of continuous liquids and gases; control volume laws; conservation of mass, momentum, and energy; dimensional analysis and similarity; boundary layers and turbulence.

2250 Fluid Mechanics Laboratory (1) Prereq.: CE 2200 and CE 2720 (for CE majors, a grade of "C" or better is required in CE 2200). 3 hrs. lab. Measurement and calibration of hydraulic machinery; pump and turbine efficiency; flow in pipelines; viscosity; discharge coefficients.

2450 Statics (3) Prereq.: grade of "C" or better in MATH 1550, 1552 and PHYS 2101. Vectorial treatment of resultant and equilibrium of force systems, centroids and centers of gravity, fluid statics, friction.

2460 Dynamics and Vibrations (3) Prereq.: grade of "C" or better in CE 2450 and credit or registration in MATH 2085. Credit will not be given for this course and ME 3133. Treatment of kinematics and kinetics of particles and rigid bodies; force, motion, velocity, acceleration; impulse and momentum; dynamics, stress, strain, and vibration; concepts applied to structural and machine components.

2700 Introduction to Civil Engineering Practice (2) Designed for civil engineering majors, open to non-majors by consent of department. 1 hr. lecture; 3 hrs. lab. Credit will not be given for this course and EVEG 2000. Students will conduct three individual projects including civil engineering construction descriptions. Basic technical and professional aspects of civil engineering education and practice.

2720 Computational Methods in Civil and Environmental Engineering I (3) Prereq.: MATH 1550 (for CE and EVEG majors) or grade of "C" or better is required in MATH 1550. Fundamental computational numerical and statistical techniques; descriptive statistics; correlation and regression analysis; numerical interpolation; root finding; and numerical integration and differentiation techniques for civil and environmental engineering systems.

3200 Hydraulics (3) Prereq.: CE 2200 and CE 2720 (for CE and EVEG majors). A grade of "C" or better is required in CE 2200). Fundamentals of fluid mechanics applied to problems in the field of water; steady and unsteady flow in closed conduits, measurement of flowing water, and turbine machinery; emphasis on computer methods.

3300 Geotechnical Engineering I (3) Prereq.: HONR 1001, CHEM 1200, CE 2200, and credit or registration in CE 3330 (for CE and EVEG majors). A grade of "C" or better is required in MATH 1550). Fundamentals of soil mechanics applied to design and analysis of deep soil-structure systems; single piles and pile groups under axial load; caissons and piers; effects of lateral loads; computer utilization.

3500 Geotechnical Engineering II: Shallow Foundations (3) Prereq.: CE 3330, 3350, and credit or registration in CE 4410. Fundamentals of geotechnical applied to design and analysis of shallow foundations, excavations, retaining structures, and slopes; selected topics on soil improvement and vibration; emphasis on computer utilization.

3600 Geotechnical Engineering III: Deep Foundations (3) Prereq.: CE 3350 and 3450. Fundamentals of geotechnical applied to design and analysis of deep soil-structure systems; single piles and pile groups under axial load; caissons and piers; effects of lateral loads; computer utilization.

4200 Coastal Engineering (3) Prereq.: CE 3330 or equivalent: Engineering problems of the coastal zone; coastal processes, wave behavior, coastal movement; environmental forces due to waves, currents, and winds; offshore soil geotechnical properties, vertical and lateral pile capacity, design principles for submarine pipelines and offshore platforms; engineering case studies.

4400 Principles of Steel Design (3) Prereq.: CE 3415. Analysis and design of elements of steel structures, elastic and plastic design, critical comparison of specifications with theory.

4410 Principles of Reinforced Concrete (3) Prereq.: CE 3415. Working stress and ultimate strength theories as applied to concrete beams (reinforced and prestressed), columns, slabs, and footings; experimental data and current design requirements; code criteria for bridges, buildings, and other structures.

4420 Principles of Prestressed Concrete (3) Prereq.: CE 4410. Analysis and design of prestressed concrete structural elements; full and partial prestressing; service ability and strength requirements; code criteria for bridges, buildings, and other structures.

4425 Principles of Wood Mechanics and Timber Design (5) Prereq.: CE 3415 or equivalent. Basic principles of mechanics, elasticity, thermodynamics, as applied to wood; design methods and specifications governing the design of sawn lumber, plywood, and glulam timber structures and structural components.
4430 Structural Engineering (3) Prereq.: CE 4750, 4400 and 4410. General principles and rules for planning, design, and analysis of structures; introduction to computer-aided design approach to solving structural engineering problems using mainframe and microcomputer software.

4435 Indeterminate Structural Analysis (3) Prereq.: CE 3415. Analysis of statically indeterminate structures; methods of analysis; strain energy; virtual work, slope deflection, moment distribution, and matrix formulations.

4440 Advanced Mechanics of Materials (3) Prereq.: CE 3440 and 605 (for CE majors a grade of "C" or better is required in CE 3440). Mechanics of materials; emphasis on needs of students interested in structural and machine design.

4445 Hurricane Engineering (3) Prereq.: CE 3415 and credit or registration in CE 3200 or equivalent. Analysis and design of structures to resist hurricanes and other natural hazards; wind engineering, slosh engineering, hazard phenomena and probabilities of occurrence; estimation of loads, loading provisions of major building codes and standards; stress analysis; design strategies for life safety and damage mitigation.

4450 Finite Element Methods (3) Prereq.: CE 3440; and either MATH 2045 or 2070 or 2071 (for CE majors, a grade of "C" or better is required in CE 3440). Basis theory of finite element methods with applications to a wide class of physical problems; matrix representation of stress, strain, and constitutive equations; principle of virtual work, discrete finite element models of continuous systems, construction of basic finite element algorithms, and solutions of physical systems by using existing finite element computer programs.

4460 Design of Bridges (3) Prereq.: CE 4410, 44750. 2 hrs. lecture; 3 hrs. lab. Design of concrete and steel bridges in accordance with the latest ASCE/AASHTO specifications; understanding of theoretical background behind the codes such as risk and reliability concepts; load rating of bridges; emphasis on bridge design using computer software and hand calculations.

4500 Geodetic and Photogrammetric Surveying (3) Prereq.: CE 2200 and consent of instructor. 2 hrs. lecture; 3 hrs. lab. Geodetic surveying for control surveys; photogrammetry and photointerpretation; calculation and field procedures used in ground control surveys and photogrammetry.

4520 Advanced Surveying (3) Prereq.: CE 3500 or equivalent; 2 hrs. lecture; 3 hrs. lab. Electronic surveying, simultaneous conveyances, subdivision surveys, flood plain management, state plane coordinates, solar azimuths, horizontal and vertical curves, and earthwork.

4530 Control Surveying with GPS (3) Prereq.: CE 3500 or equivalent surveying course; 2 hrs. lecture; 3 hrs. lab. Understanding geodetic systems available using satellite positioning system (GPS) receivers to calculate positions and to evaluate results; topics include classical and geodetic surveying, GPS receivers, static and kinematic GPS surveys, GPS computations, GPS mapping, vertical GPS, and gravimetric geodesy; lab includes actual site observation and hands-on use of GPS equipment and software.

4550 Boundary Surveying (3) Prereq.: CE 3500 or equivalent; 2 hrs. lecture; 3 hrs. lab. Designed to prepare engineers to complete Land Surveyor Registration requirements in Louisiana. Procedures and laws governing surveying of boundaries; emphasis on U. S. Land Survey System and Louisiana surveying laws and grids.

4560 Engineering Applications of Remote Sensing (3) Prereq.: consent of instructor. 2 hrs. lecture; 3 hrs. lab. Photographic and digital image processes related to interpretation, principles, methods, and techniques; engineering applications in materials, land use, energy, hydrology, agriculture, forestry, geology, geomorphology, and water resources.

4600 Geometric Design of Highways and Airports (3) Prereq.: CE 3600 or equivalent; 2 hrs. lecture; 3 hrs. lab. Principles of design and procedure for rural and urban high- way facilities and airport installations; design criteria and controls, capacity analysis, cross-section selection, design of vertical and horizontal alignment, intersections, inter- changes and computer applications to design problems.

4620 Transportation Engineering (3) Prereq.: CE 3600 or equivalent; History, economies, and traffic characteristics of transportation systems; planning, design, construction, maintenance, and operation of air, highway, pipeline, rail, and water transportation-facilities, vehicles, guideways, and terminals.

4650 Introduction to Asphalt Mixture Design (3) Prereq.: CE 4750. General principles, mixture theory, mixture design, grading, mixture properties and analysis of binder rheology, aggregates, and mixture design.

4670 Fundamentals of Pavement Design (3) F Prereq.: CE 4750. Emphasis on current pavement design procedures; subgrade, base, and surfacing characteristics; loads; stresses in pavement systems; material characterization; pavement response; design methods; structural pavement models; structural design systems; effects of natural forces; and construction practices.

4730 Risk and Reliability Analysis in Civil and Environmental Engineering (3) Prereq.: CE 2720 and EXST 2201. Decision making under certainty; probability distributions and their characteristics relevant to civil and environmental engineering applications; data gathering and analysis; extraction of information; entropy theory; estimation of distribution parameters; error and uncertainty for subsidiums, airports, shopping centers, road networks, and model selection; and reliability-based civil and/or environmental engineering design.

4745 Natural Hazards and the Built Environment (3) Prereq.: Junior standing. Credit not be given for both this course and CE 4445. Engineering impacts and implications of hurricanes, floods, earthquakes, and other natural hazards on buildings and infrastructure systems; damage mechanisms; principles of wind, flood, and seismic resistant design; building codes, engineering preparedness, response and recovery issues; design strategies for life safety and damage mitigation; building codes, land use, and topography, and insurance as mitigation tools.

4750 Professional Issues and Concept Design in Civil Engineering (2) Prereq.: CE 2100 and senior standing. 1 hr. lecture; 2 hrs. lab. Civil engineering design processes and systems; constructability and sustainability; use of contractors and consultants; project management, scheduling, economics and cost; ethical, legal, and social welfare of the public.

4760 Civil Engineering Design (3) Prereq.: credit in EVEG 3100, CE 3300, 3500, 4410 or equivalent; 4750, 4750, 4410 or equivalent; 4420, 4430, 4460, or 4470. 2 hrs. lecture; 3 hrs. lab. Design of civil engineering facilities; feasibility studies; facility design with computer programs; building codes, land use, and topographic management, and insurance as mitigation tools.

4770 Professionalism and Ethical Practice of Civil Engineering (1) Prereq.: senior standing in civil engineering. Credit not be given for both this course and CE 2100. Principles of mathematical physics applied to hydrologic processes; methods of solution and model building; application to water resource problems.

4780 Special Topics in Civil Engineering Science (3) Prereq.: senior standing and departmental approval. May be taken for a max. of 6 hrs. of credit. More than one section may be taken concurrently when topics differ. Topics in specialized civil engineering technical or analysis areas.

7100 Theory and Operation of Wastewater Treatment Facilities (3) Prereq.: EVEG 3110; or equivalent undergraduate preparation. Theoretical principles, design criteria, and analysis of treatment systems for domestic and industrial wastewaters and sludges; design of acid and alkaline neutralization, biological reactors and design criteria for suspended-growth and biofilm processes applicable to wastewater treatment.

7120 Operations and Management in Sanitary Engineering II (3) Prereq.: EVEG 3100 and 3110; or equivalent undergraduate preparation. Theory and design of water and wastewater systems and facilities.

7115 Water Quality Management (3) Current environmental engineering topics, with emphasis on water quality; governmental agencies, regulations, and technological limits affecting water and wastewater treatment, solids and wastes, hazardous wastes, and air pollution.

7210 Sanitary Engineering Operations and Processes Lab (3) Prereq.: CE 4310, 7106, and credit or registration in CE 7120. 1 hr. lecture; 5 hrs. lab. Laboratory and pilot plant studies of water and wastewater treatment processes.

7315 Advanced Topics in Biodegradation (3) Biological waste treatment applications in civil and environmental engineering, including current and emerging techniques for characterization, and mathematical modeling of biological processes in municipal and industrial waste treatment systems.

7415 Biological Treatment of Recalcitrant Systems in Aquaculture (3) Theory, design, and operation of fixed mixed biofiltration processes used to recondition water in recirculating aquaculture systems and to provide tertiary treatment of domestic and industrial wastes characterized by low substrate regimes.

7810 Water Quality Simulations (3) Prereq.: CE 4110. Water quality modeling and a perspective on practicality and reliability; emphasis on model calibration and verification procedures and methodologies for quantifying uncertainties associated with model predictions.

7855 Advanced Hydraulics (3) Prereq.: CE 2200. Transport of sediment, mixing current, and other phenomena.

7265 Advanced Subsurface Hydrology and Hydraulics (3) Prereq.: CE 4200. 2 hrs. lecture; 3 hrs. lab. Theor ematics of water flow in porous media; modeling of surface and ground water systems.

7445 Geomorphology and Water Resources (3) Prereq.: CE 4200. Principles of geomorphology applied to hydrologic processes including runoff, stream flow routing, infiltration, evaporation, and watershed yield; development of watershed models using techniques and their application to engineering design.

7275 Modeling for Management of Groundwater (3) Prereq.: CE 4210. Identification of management problems; applications of systems theory to develop modeling techniques; analytical and numerical techniques of groundwater modeling; computer models; data analysis; and simulation; determination of management strategies.

7460 Infiltration (3) Prereq.: CE 4200. Principles of infiltration, ground water yield, and storage in surface and ground water systems.

7270 Modeling in Physical Hydrology (3) Prereq.: CE 4200. Principles of mathematical physics applied to hydrologic processes; methods of solution and model building; application to water resource problems.

7308 Advanced Geotechnical Engineering I: Stress Distribution, Seepage, Coupled Effects (3) Prereq.: CE 3300 and 3350. Advanced theories of soil mechanics including stress distribution, seepage through soils, consolidation, and settlement analysis; their applications in foundation engineering.

7305 Numerical Methods in Geotechnical Engineering (3) Prereq.: CE 4410. Identification of analysis problems of seepage, consolidation, stress-deformation, slope stability, and wave equation for piles.

7318 Advanced Geotechnical Engineering II: Shear Strength, Bearing Capacity, Slope Stability (3) Prereq.: CE 7300. Shear strength of cohesive and cohesionless soils; stability problems including bearing capacity, slope stability, and earth pressure distribution.


7335 Soil Improvement and Stabilization (3) Prereq.: CE 4300. Methodology and analysis of soil placement and improvement techniques; properties of material and organic waste; principles of soil compactability and soil improvement and improvement; chemical stabilization of soils, lime columns, stone columns, ultimate strength and bearing capacity of columns, compression by surcharging and drainage, dynamic consolidation, oxidation, stabilization, thermal properties of soils, thermal stabilization.

8140 Theory and Practice of Geotechnical Laboratory Experiments (3) Prereq.: CE 4410. Subject: geotechnical laboratory experiments; 2 hrs. lecture; 3 hrs. lab. Theory and practice of laboratory experimental techniques used in geotechnical design and analysis.
7345 In-Situ Soil Testing and Evaluation (3) Prereq.: CE 3400. Theory and advanced geotechnical in-situ testing methods (e.g. piezo-cone penetrometer, self-boring pressure meter, dilatometer, etc.)
7350 Soil Dynamics and Introduction to Earthquake Engineering (3) CE 7345, TF 7240. Theory and practice related to soil-structure systems subject to time dependent loadings; wave propagation in various media, steady state and transient vibration of foundations, measurement of dynamic soil parameters, analysis and design procedures; influence of soils on ground motion characteristics; causes of soil liquefaction during earthquakes; liquefaction
7355 Environmental Geotechnics (3) Prereq.: CE 3300, 3350. Geotechnical aspects of waste management; solute transport in saturated media, flow in partially saturated media, diffusion in soil, sorption, hydraulic conductivity, soil-pore fluid interactions, compaction, clay and flexible membrane liners, slope stability; settlement considerations, remediation techniques.
7405 Statically Indeterminate Structures (3) Prereq.: CE 4433. Analysis of statically indeterminate structures by mode methods.
7409 Advanced Concrete Theory (3) Analysis and design of reinforced concrete structural elements according to ultimate strength and limit design theories; prestressed indeterminate structures, shrinkage, and creep.
7420 Limit Analysis and Design (3) Prereq.: credit or registration in CE 4435. Limit analysis is the study of plastic analyses of structures undergoing limit states; plastic analysis of beams; plastic analysis of plates and shells; limit analysis of plates; stability and structural integrity.
7430 Structural Design for Dynamic Loads (3) Sources, intensities, and methods of transmission of dynamic loads; response of structural systems to dynamic loading; modern computation techniques.
7455 Finite Element Method in Engineering (3) Prereq.: CE 4450. Finite element method, an expanded Ritz technique based on variational concepts for continua with applications to heat transfer, flow through porous media, fluid dynamics, elasticity, plasticity, and stability and vibration of elastic systems.
7460 Theory of Plates (3) Prereq.: credit or registration in CE 4440. Laterally loaded plates with various boundary conditions; approximate methods of plate analysis; large deflections of plates; elastic stability of plates.
7470 Theory of Elastic and Plastic Stability (3) Prereq.: credit or registration in CE 4455. Beam columns, elastic and plastic buckling of bars and frames, torsional buckling, lateral buckling of beams, elastic and plastic stability of frames, plate and shell buckling, approximate and special methods, and high speed computation.
7475 Solid Mechanics (3) Prereq.: CE 4440 and credit or registration in MATH 4140 or ME 4583. Mathematical approach to statics and dynamics of deformable solids; tensors in curvilinear coordinates and variational principles; formulation of plasticity and viscoelasticity; energy theorems and conservation laws.
7480 Plasticity and Viscoelasticity: Theory and Applications (3) Prereq.: CE 4440. Elements of the theory of plasticity, viscoelasticity, stress-strain relations for perfectly plastic and strain hardening materials; boundary value problems of plasticity; the slip-line theory and applications; constitutive equations of viscoelastic bodies and methods of solution of the boundary value problems of viscoelasticity.
7485 Mechanics of Composite Materials (3) Prereq.: CE 3400. Modeling of the mechanical behavior of fibrous composites for application to structural components; emphasis on interlaminar stresses, strength and failure theories, thermal effects, nonlinear material response, test methods, and micromechanics.
7490 Damage Mechanics in Metals and Matrix Composites (3) Prereq.: CE 7480 and 7485 or equivalent. Theory and practice of the application of the different constitutive models to metals and metal matrix composites, but with consideration of other materials; analysis of isotropic and anisotropic behavior in materials.
7500 Remote Sensing in Engineering Research (3) Prereq.: CE 4560. Physical measurements, characteristics of planets, stars, and the solar system, and laboratory and field instrumentation; computer analysis of spectra data to include classification algorithms, enhancement, calibration, georeferencing, overlay, and data base development; image processing; environmental applications.
7600 Transportation Engineering Data Collection Methods (3) Prereq.: EXT 7005, or CE 3600, or equivalent. Applications of sampling theory to data collections for transportation studies; determination of sample sizes; calculation of sampling error; expansion of sample survey design techniques; survey methodology issues, including interviews, counting programs, moving observer surveys, self-administered questionnaires, etc.; design of survey instruments; conduct of data collection activities; data reduction techniques.
7610 Traffic Engineering Operations and Control (3) F or Prereq.: CE 3600 or equivalent. Traffic regulations, operational problems, and engineering organization, theory and practice of application, design, operation, and maintenance of traffic control devices; methods and development studied include signing, markings, delineation and illumination, signals and signal systems, one-way street and unbuckled streets, and freeway monitoring and control.
7612 Traffic Flow and Analysis (3) S-O Prereq.: CE 4600 or consent of instructor. Traffic flow theory and the techniques used to analyze traffic operations and highway capacity; theoretical aspects of traffic flow, including current research in the field; application of analytical procedures used to assess the efficiency of highway operations.
7614 Intelligent Transportation Systems (3) V Theories and applications of Intelligent Transportation Systems (ITS).
7615 Advanced Highway Design and Traffic Safety (3) S-K Prereq.: CE 4650 or consent of instructor. Theoretical development and design principles of highway design systems; particularly as they relate to safety; analysis of accident statistics, diagnosis of high-risk locations, risk management, tort liability, and design treatments to address high accident locations; design principles of traffic calming, highway-railroad grade crossings, highway work zones, and roadway cross-sections.
7621 Mass Transit Systems (3) Prereq.: CE 3600 or equivalent. Historical development, role in society, federal participation, and institutional development of transit; description of conventional and innovative forms, and characteristics of users; planning, vehicle scheduling, environmental impact and energy consumption; system costs, pricing and financing; future systems and policies.
7640 Urban Transportation Policy and Planning (3) Prereq.: CE 3600 or equivalent. Introduction to and definition of transportation planning; transportation planning context; characteristics of travel, policies, decision making and models of decision makers; systems analytic approaches to transportation planning; inventory, data management, and spatial representation of data; land use and transportation; inputs to travel forecasting.
7641 Urban Transportation Planning Models (4) S-E Prereq.: CE 7640, ECNO 5600, EXST 7003, or equivalent. 3 hrs. lecture; 2 hrs. lab. Theories of travel demand modeling; computer-assisted modeling; network development for highways, transit, high-occupancy vehicles; development of trip generation, distribution, and mode-choice models; highway and transit assignment procedures; use of current software for microcomputers.
7645 Transportation Systems Analysis (3) V Prereq.: CE 7640 or equivalent. Quantitative methods for analysis of transportation systems; basic network algorithms; macroscopic and microscopic traffic simulation models; dynamic traffic assignment approaches; network design problems with travel demand uncertainty; optimization concepts in transportation network modeling.
7650 Bituminous Materials and Mixtures (3) S-O Prereq.: CE 3700 or equivalent. 2 hrs. lecture; 1 hr. lab. Properties of asphalts and tars used in bituminous materials; historical developments; properties and design of bituminous mixtures; theory and practice of asphalt concrete mix design for pavements and bases including specification and construction methods for hot-mixes and surface treatments.
7652 Transportation Engineering - Materials (3) Prereq.: CE 4670 or equivalent. Earthen materials—fills and subgrades; building materials and performance; introduction to asphalt and asphaltic concrete; introduction to cement and cement concrete; variability, OC Curves; stabilization principles and procedures of gravel and soils.
7655 Pavement Materials Characterization (4) F-O Prereq.: CE 3700 or equivalent. Laboratory and field test methods for determining engineering properties of pavement materials; interpretation of test data for selecting property values; use of fundamental engineering research and analysis of pavement response to environmental and vehicular loads.
7673 Pavement Maintenance and Rehabilitation (3) S-O Prereq.: CE 3700 or equivalent. Concepts of pavement maintenance and rehabilitation; pavement evaluation techniques; maintenance versus rehabilitation versus replacement alternatives.
7700 Special Topics in Civil Engineering (3,3) Prereq.: permission of department. Each course may be taken for a max. of 6 hrs. of credit. Specialized civil engineering.
7740 Master's Report (3) Comprehensive report with oral defense on subject approved by the major professor.
7750 Seminar (1) All graduate students are expected to enroll every semester. Only one semester hour of credit will be allowed toward degree requirements.
8000 Thesis Research (1-12 per sem.) "S"/"U" grading.
9000 Dissertation Research (1-12 per sem.) "S"/"U" grading.

CLASSICAL STUDIES • CLST

General education courses are marked with stars (•).

2870 Ancient World in the Cinema (3) An examination of how the cinema has interpreted the history and myths of Greece and Rome.
2880 Women in Antiquity (3) Knowledge of Greek or Latin not required. The role of women in Greek and Roman society; readings from historical, legal, medical, and religious documents.
2890 Greek and Roman Mythology (3) Taught in English. Knowledge of the Greek and Latin languages not required. Survey of the principal myths of the Greeks and Romans.
2892 Greek and Latin Word Study (3) No previous knowledge of Greek or Latin required; credit not applicable toward a major in foreign languages. Etymology of common and scientific words derived from Greek and Latin; emphasis on medical terminology.
2893 Ancient Greek Civilization (3) Knowledge of Greek and Latin languages not required. Credit will not be given for both this course and HNRS 1001-1003. Survey of literature, philosophy, art, and culture of ancient Greece from its beginnings to the death of Alexander the Great.
2894 Ancient Roman Civilization (3) Knowledge of Greek and Latin languages not required. A survey of the literature, philosophy, art, and culture of ancient Rome from its beginnings to the death of Marcus Aurelius.
3015 The Archaeology of Ancient Greece (3) • Also offered as ANTH 3015. Material culture of the great civilizations of ancient Greece; includes Neolithic Age, Bronze Age (Mycenean-Minoan), Classical Age, and the Age of Alexander the Great.
3020 Classical Epic in Translation (3) Knowledge of Greek and Latin languages not required. Growth and development of the Greek and Latin epic; basic themes, the nature of a hero, and relevance to modern reader.
3030 Ancient Greek and Roman Tragedy in English Translation (3) Taught in English. Knowledge of Greek and Latin languages not required. Drama of Greece and Rome; original, major examples, and relevance plays of Aeschylus, Sophocles, Euripides, and Seneca.
3040 Greek and Roman Comedy in English Translation (3) Knowledge of Greek or Latin languages not required. Masters of stage comedy from the ancient world, with special attention to Aristophanes, Menander, Plautus, and Terence; origins and growth of comedy as an art form; problems in staging; social nature of comedy in the ancient world.
COMMUNICATION DISORDERS

• COMD

General education courses are marked with stars (★).

1080 Survey of Communication Science and Disorders (3) Prereq.: students interested in the study/teaching of language. Analytical, physiological, and behavioral bases of normal and disordered verbal communication.

★ 2050 Introduction to Language (3) Linguistic study of the principal interrelated levels of language structure: phonetics, phonology, morphology, syntax, and semantics; related topics such as writing systems and dialects.

2051 Introduction to Manual Communication (4) 1 hr. lecture; 2 hrs. lab. Basic linguistic structure, educational, and social aspects of hearing and transmitting messages in manual communication systems; American Sign Language as well as English-based systems.

2081 Introduction to Communication Disorders (3) Required initial course for undergraduates concentrating in speech and hearing fields. Observations in Speech and Hearing Clinic required. Processes involved in speech production; definition, description, and incidence of speech and hearing disorders; overview of the profession, including agencies, related professionals, job opportunities, publications, professional associations, and certification.

4150 Phonetics (4) Prereq.: COMD 2050. 3 hrs. lecture; 1 hr. lab. Also offered as LING 4150. Principles of phonemics; articulatory phonetics; description and classification of sounds; transcription at different levels of detail; production and perception.

4153 Acoustics of Speech and Hearing (3) Prereq.: COMD 2050 or equivalent. Also offered as LING 4153. Production, transmission, and perception of speech acoustics in communication; acoustic phonetics and psychoacoustics.

4190 Introduction to Audiology (3) Prereq.: COMD 2081. 1 hr. lecture, 3 hrs. lab. Interaction of hearing and speech, effects of hearing loss on speech and language development, types of hearing disorders, determination of hearing loss, and communication disorders.

4250 Anatomy and Physiology of Speech and Hearing (3) Prereq.: COMD 2050. Functional anatomy of structures associated with speech production, and sensation and reception.

4380 Speech and Language Development (4) Also offered as LING 4380. 3 hrs. lecture; 1 hr. lab. Language acquisition and development, language and cognitive development, verbal learning, and structural properties of speech; theories of language development in the normal child.

4381 Basic Articulation Disorders (3) Prereq.: COMD 2081, 4153. Introduction to articulatory physiology, development, etiology, evaluation and treatment of disorders.

4382 Basic Language Disorders of Children (3) Prereq.: COMD 4380 or equivalent and consent of instructor. Differential diagnosis and remediation of major language disorders of children.

4383 Basic Fluency Disorders (3) Prereq.: COMD 4381 or equivalent. For clinical practice take COMD 4683, 4684, or 4685. Stuttering and allied disorders; emphasis on symptomatology, testing, rehabilitation and prevention.

4384 Basic Voice Disorders (3) Introduction to vocal physiology, dynamic characteristics and measurement of fundamental frequency, and differential diagnosis and management of voice disorders of functional and abuse etiologies.

4490 Audiolingual Assessment (3) Prereq.: COMD 4250, 4190. Practice and application in pure-tone and speech audiometry; middle-ear measurements, differential diagnostic physiological tests including auditory evoked potentials.

4590 Auditory Rehabilitation in Children (3) Prereq.: COMD 4133, 4190. Methods of management including modes of communication, auditory and speech reading training, and their management, identification and intervention, and educational placement.

4681 Clinical Preparation and Observation Laboratory (1) 2 hrs. lab. For majors in communication sciences and disorders. Observation of various types of therapy and evaluation.

4682 Introduction to Clinical Practicum (2) F.S. For majors in communication sciences and disorders. Techniques for test administration, therapeutic methods, report writing, counseling/conference, behavior management.

4683, 4684, 4685 Clinical Practice: Therapeutic Techniques (1-6 each) Prereq.: COMD 4682 and credit in course work related to practicum-specific speech, language, or hearing disorder. May be taken for a max. of 8 hrs. of credit each. On- and off-campus practica in speech, language, and hearing disorders.

4694 Clinical Practicum in a Medical Environment (1-4) Prereq.: consent of instructor. Speech and/or audiology practicum in a hospital or medical practitioner's office.

4750 Independent Research in Speech Science or Linguistics (1-3) May be taken for a max. of 3 hrs. of credit. Also offered as LING 4750. Readings in speech science or linguistics directed by a senior faculty member.

4751 Special Topics in Communication Disorders (3) May be taken for a max. of 6 hrs. undergraduate or graduate credit when topics vary.

7151 Speech Science (3) Motor and articulatory phonetics, including palatography, acoustic phonetics, and aspects of signal detection and perception.

7152 Instrumentation and Methods for Speech and Hearing (4) Prereq.: COMD 4135 or equivalent 3 hrs. lecture; 2 hrs. lab. Instrumentation techniques for assessment and research in speech and hearing; both theory and application are emphasized.

7153 Research Design in Communication Science and Disorders (3) Prereq.: ESTAT 4001, 4006 or equivalent. Empirical research design problems in speech and hearing; emphasis on measurement validity and reliability.

7191 Hearing Science (3) Prereq.: COMD 4250. Auditory transmission and processing from the outer ear to the cortical area; psychophysical phenomena germane to human audition.

7192 Hearing Aids: Electroacoustics and Fitting (3) Prereq.: COMD 4191, 7140. Electroacoustic analysis of hearing aids, earmold acoustics, selection and evaluation procedures, special devices, and problems in communication and speech processing.

7200 Neuroanatomical Bases of Speech and Hearing (3) Prereq.: COMD 2050. Study of the neuroanatomical bases of the central nervous system as it relates to sensory/motor and cognitive processes underlying speech and hearing.


7381 Language and Learning Disorders (3) Prereq.: COMD 4382. Language disorders and the communicative aspect of language; current research and treatment models for language intervention; relationship between language and learning; emphasis on school-aged child.

7382 Voice Disorders (3) Prereq.: COMD 4384. Incidence, etiology, concomitant problems; assessment and management of vocal dysphonias, aphonia, and laryngotraheitis.

7383 Cleft Palate/Orofacial Disorders (3) Prereq.: COMD 4250, 4380. Orofacial anatomy, physiology, and embryology; etiology and classification of orofacial cleft; surgical, dental, speech, hearing, and psychosocial concomitants and their management.

7384 Early Communicative Intervention (3) Prereq.: COMD 4382 or equivalent. For clinical practice, take COMD 7684 or 7685. Cognitive, social, and environmental conditions associated with “high risk” for communicative disorders; intervention approaches (prevention, evaluation, direct stimulation of child-caregiver interactions) and service delivery models (parent-based).

7385 Neuropsychopathologies of Speech (3) Prereq.: COMD 4250, 4381, and 7280, or equivalent. Physiological and anatomical bases of dysthria, apraxia, and related speech disorders due to neurological damage; emphasis on diagnosis, description, and clinical management.

7386 Introduction to Augmentative/Alternative Communication (3) Prereq.: COMD 4135 or equivalent. Technical and sociocultural considerations; augmentative and assistive systems and devices; types of communication: assessment; intervention guidelines and procedures.

7387 Aphasia in Adults (3) Prereq.: COMD 7280 or equivalent and consent of instructor. Neurological bases of aphasia and related disorders; appropriate therapeutic methodologies.

7388 Fluency Disorders II (3) Prereq.: COMD 4383 or equivalent. Etiology and nature of speech fluency disorders.

7399 Communicative Rehabilitation of Severely/Multiplly Handicapped Individuals (3) Medical bases of severe/crippling handicap conditions; alternative communication systems; assessment and intervention processes; pragmatics of interpersonal communication involving individuals who use non-speech modalities.

7390 Industrial Audiology and Hearing Conservation (3) Prereq.: COMD 7490. Audiological practices in industry and hearing conservation programs; professional, technical, business, and legal issues.

7391 Educational and Pediatric Audiology (3) Prereq.: COMD 7490. Identification and management of the young child; social and psychological concomitants of auditory disorder; genetic hearing loss and other high risk types of impairment related to hearing.

7393 Pathology of the Auditory System (3) Prereq.: COMD 7151, 7191, 7490. Neuroanatomical bases of hearing disorders; understanding of signal processing and central auditory dysfunction; diseases, abnormalities, and methods of medical intervention.

7400 Measurement and Diagnosis of Communication Disorders (3) Psychological and behavioral measurement of communicative functioning and treatment planning for communication language, or hearing disorders.

7490 Diagnostic Audiology I (3) Prereq.: COMD 7191. Behavioral tests and middle-ear measurements in relation to test purposes, scientific basis, assessment strategies, procedures, and interpretation.

7491 Diagnostic Audiology II (3) Prereq.: COMD 7490 or consent of instructor. Auditory evoked potentials and electrocochleography examined in relation to purposes, scientific basis, assessment strategies, procedures, and interpretation using cross-check principles.

7599 Auditory Rehabilitation of Adults (3) Prereq.: COMD 7192. Special needs of the adult hearing-impaired individual (communicative, social, and vocational); hearing aid use and components of the rehabilitation process.

7683, 7684, 7685 Graduate Clinical Practicum (1-6 each) Prereq.: credit or enrollment in the course dealing with the specific disorder in which practicum is to be taken. May be repeated for credit in order to obtain the clock hours necessary for certification by the American Speech, Language, Hearing Association. Only 6 hrs. of academic credit may be counted toward the degree, although all practicum hours count for professional certification. 2-5 hrs. clinic. On- and off-campus graduate practicum in specific areas (articulation, language, fluency, voice, auricular rehabilitation, electrodiagnostic audiography, oral-facial anomalies, neurological disorders).

7741 Quantitative Measurement of Speech (3) Prereq.: completion of 12 hrs. of graduate work in communication disorders. Rationale for and clinical utility of objective measures of speech and language function; emphasis on use of techniques and devices.

7750 Special Topics in Linguistics (3) May be taken two times for credit for the master's degree and four times for the doctorate when topics vary. Also offered as LING 7750. Topics to be announced.

7752 Seminar in Linguistics (3) Also offered as LING 7752. May be taken for a max. of 6 hrs. for the master's degree and 12 hrs. for the doctoral degree when topics vary. Problems in analysis of language, emphasis on phonology and semantics.

7754 Psycholinguistics: Linguistic Perspectives (3) Prereq.: LING 4010 or consent of instructor. Also offered as PSYCH 7754 and LING 7754. Theories of constituent structure and their application; discourse/semantic principles and their application; speech errors and language universal.
Comparative Biomedical Sciences

7001 Seminar: Comparative Biomedical Sciences (1) Prereq.: consent of instructor. 6 hrs. credit when topics vary. Theoretical and practical considerations of current methods of qualitative research in the discipline.

7040 Biomedical Cell and Molecular Biology (3) F, S Prereq.: consent of instructor. Essential concepts of cell and molecular biology, cellular ultrastructure and function; basic genetic mechanisms in normal and transformed cells; methods of gene analysis; protein synthesis; molecular therapy and molecular approaches to disease diagnosis.

Comparative Literature

CPLT

General education courses are marked with stars (*).

**2012 Introduction to World Literature (3)** Also offered as ENGL 2201. Survey of major works in literary history from the classical through the modern period designed to ground subsequent work in criticism.

**2013 Topics in Theory of Criticism (3)** May be taken for a max. of 9 hrs. of credit when topics vary. Study of a particular school of critical thought as it is applied to specifically comparative literary analysis; topics may vary; examples taken from different national literary traditions.

**2014 Seminar in the Interdisciplinary Study of Literature (3)** May be taken for a max. of 9 hrs. of credit when topics vary. Relationship between literature and other disciplines, such as art, religion, and film.

**8000 Thesis Research (1-12 per sem.)** S”, “U”. Grading
CURRICULUM AND INSTRUCTION • ED CI

Admission to courses at the 3000-level and above is restricted to students who have completed a teacher education program/concentration. Formal admission includes 2.50 LSC and cumulative grade point averages and passing scores on a minimum of the ACT composite score of 22 or a minimum SAT composite score of 1030.

1000 Introduction to the Study of Education (3) Field experience in multicaul settings in secondary schools. Historical evolutions, organization, and administration of American public school systems.

1001 Introduction to College Study (3) Intended for entering freshmen. College-level readings and techniques for organizing text and lecture information for effective study; critical thinking and reading; time management; preparation for tests.

2001 Education, Schooling, and Society (3) Introduction to contemporary educational issues, especially as these are situated historically, culturally, socially, and politically; topics include history, theory, and politics of education, especially as related to gender, race, class, and technology.

2025 Foundations and Principles of Teaching in Elementary School (3) 2 hrs. lecture; 2 hrs. field experience in elementary schools. Open only to students enrolled in programs leading to teacher certification.

2530 Teaching, Schooling, and Society (3) Prereq.: admission to a teacher preparation program program. 2 hrs. lecture; 2 hrs. field experience in elementary school and middle schools. Experiences that join theory to practice as it operates in elementary school culture; a reflective approach to pedagogy; discussions of teaching in the historical and philosophical dimensions of discourse/practice.


2405 Principles and Practices in K-12 Programs (4) Prereq.: ED CI 1000 and enrollment in a program leading to teacher certification. 2 hrs. lecture; 2 hrs. lab/field experience in multicultural settings. Managerial aspects of instruction; application of learning principles to the classroom setting.

2081 PK-3 Program Overview (3) Pass/fail grading. The nature of PK-3 instruction and expectations of the PK-3 teaching profession.

2271, 2272 Art Education for Elementary Schools (3, 3) ART 2271 is prerequisite for 2272. 2 hrs. lecture; 2 hrs. lab. Critical analysis and evaluation of past and present concepts of art education in the development of a functional art program for elementary schools in Louisiana; art materials, techniques, and activities recommended for elementary school grades.

2400 Education and Diverse Populations (3) Prereq.: admission to 1-6 teacher education certification program. 2 hrs. lecture; 2 hrs. lab/field experience in multicultural settings. Differences among students (grade 6-12) associated with their developmental levels, cultural and ethnic backgrounds, and gender.

2700 Characteristics of Learners with Exceptionalities (3) F,S,Su 2 hrs. lecture; 2 hrs. lab/field experience. Requires field experience in a school environment containing learners with exceptionalities. An introductory course on differences of learners with various exceptionalities; characteristics, educational programs, and resources for education and support.

3000 Children's Literature (3) Survey of children's literature across time, genres, and media; focus on wide reading in children's literature and an appreciation of the value of literature for children.

3001 Student Development and Diversity (3) Prereq.: credit or registration in ED CI 2001 and concurrent enrollment in one of the following: BIOL 3001, CHEM 3001, ENGL 3351, HIST 3031, HIST 3001, PHYS 3001, SPAN 3001, 2 hrs. lecture; 3 hrs. lab/field experience in multicultural settings. Differences among secondary students (grades 6-12) associated with their developmental levels, cultural and ethnic backgrounds, genders, learning abilities, and special needs.

3002 Classroom Culture (3) Prereq.: ED CI 3001 and concurrent enrollment in one of the following: BIOL 3002, CHEM 3002, ENGL 3352, FREN 3402, MATH 3002, MATH 3002, SPAN 3002, 2 hrs. lecture; 3 hrs. lab/field experience in multicultural settings. Learning processes of middle school and high school students in the social learning environment of the classroom, with attention to individual and group motivation, social interactions, integration of technology, and classroom management.

3112 Reading Instruction in the Elementary School (6) Prereq.: ED CI 2525; concurrent registration in ED CI 2312 for elementary school majors. 6 hrs. lab/field experience in multicultural settings. Current instructional materials and methods in teaching reading at the elementary school level; role of reading and writing in a laboratory situation in the public schools.

3113 Materials and Methods in Teaching Communicative Skills in the Elementary School (2) Prereq.: ED CI 2525; concurrent registration in ED CI 2312 for elementary grades majors. Instructional materials and methods in teaching language arts communicative skills at the elementary school level; understanding and skills in a laboratory situation in the public school.

3124 Curriculum Discipline: Mathematics Theory and Practice (3) Prereq.: ED CI 2271, 2272, 3000, and concurrent enrollment in ED CI 2271, 2312, 3127, and 4400; 2 hrs. lecture; 6 hrs. lab/field experience in multicultural, multi-level settings. Structures of the discipline of mathematics applied to teaching mathematics in grades 1-6; standards-based pedagogical strategies, techniques, and materials are coordinated with basic principles of learning.

3125 Curriculum Discipline: Science (3) Prereq.: Professional Practice Block I, 12 sem. hrs. of natural science, 12 sem. hrs. mathematics, and concurrent enrollment in ED CI 3112 and MATH 2203; 2 hrs. lecture; 2 hrs. lab/field experience in multicultural, multi-level settings. Structures of science discipline applied to teaching science in grades 1-6; standards-based pedagogical strategies, techniques, and materials are coordinated with basic principles of learning.

3126 Curriculum Disciplines: Mathematics (3) Prereq.: ED CI 2253 or 2303, 6 hrs. hrs. of mathematics courses, and concurrent enrollment in ED CI 3125 and 3127; 2 hrs. lecture; 2 hrs. lab/field experience in multicultural settings. Structures of mathematical disciplines for teaching in lower/upper elementary school; structure, content, and materials.

3127 Curriculum Disciplines: Social Studies (3) Prereq.: ED CI 2400, 3000, and concurrent enrollment in ED CI 2312, 3127, and 4400; 2 hrs. lecture; 2 hrs. lab/field experience in multicultural, multi-level settings. Structures of the social science discipline applied to teaching social studies in grades 4-7; standards-based pedagogical strategies, techniques, and materials are coordinated with basic principles of learning.

3135 Teaching Reading in the Junior and Senior High School (3) Prereq.: ED CI 2040 or 2045 or equivalent. Approaches for teaching reading; general review of teaching approaches and materials.

3136 Reading in the Content Areas (3) Prereq.: ED CI 3135 or equivalent. Content area reading problems and solutions; the reading process, approaches, skills, and materials.

3137 Assessing and Guiding Classroom Reading Instruction (3) Prereq.: ED CI 2400, 3000, and concurrent enrollment in ED CI 2312, 3127, and 4400; 2 hrs. lecture; 2 hrs. lab/field experience in multicultural, multi-level settings. Advanced reading instruction experience with particular emphasis on assessment in diverse and multicultural settings.

3142 Materials and Methods in Secondary School English (3) Prereq.: ED CI 2040 and credit for or registration in 21 of the 24 sem. hrs. of English courses required for a teaching minor in secondary school English; 2 hrs. lecture; 2 hrs. lab/field experience in multicultural settings.

3143 Materials and Methods in Secondary School French (3) Prereq.: ED CI 2040 and credit for or registration in 23 of the 26 sem. hrs. of French courses required for a teaching minor in secondary school French; 2 hrs. lecture; 2 hrs. lab/field experience in multicultural settings.

3145 Materials and Methods in Secondary School Social Studies (3) Prereq.: ED CI 2040 and credit for or registration in 21 sem. hrs. of the social studies courses required for a teaching minor in secondary school social studies; 2 hrs. lecture; 2 hrs. lab/field experience in multicultural settings. Techniques, strategies, and materials for teaching secondary school social studies.
3145 Materials and Methods in Secondary School Latin (3) Prereq.: consent of instructor; credit or registration in the Latin courses required for a teaching minor in secondary school Latin. 2 hrs. lecture; 2 hrs. lab/field experience in multi-cultural settings.

3146 Materials and Methods in Secondary School Mathematics (3) Prereq.: EDCI 2400 and credit for or registration in 17 of the 20 sem. hrs. of mathematics courses required for a teaching minor in secondary school mathematics. 2 hrs. lecture; 2 hrs. lab/field experience in multi-cultural settings. Techniques, strategies, and materials for teaching elementary and secondary school mathematics.

3147 Materials and Methods in Secondary School Science (3) Prereq.: EDCI 2400: 8 sem. hrs. of biology (BIOI 1001, 1002, 1003, 1004 or BIOL 1201, 1208, and either BIOD 1130 or BIOL 1205), and other BIOL 1101. 2 hrs. of chemistry (CHEM 1201, 1202, 1212); 8 sem. hrs. of physics (PHYS 2001, 2002, 2108 or PHYS 2110, 2126, 2108, 2109); and credit for or registration in at least 8 additional sem. hrs. from among the science courses required for the teaching major (biology, chemistry, or physics) or minor biology, chemistry, physics, or general science selected by the student. 2 hrs. lecture; 2 hrs. lab/field experience in multi-cultural settings.

3148 Materials and Methods in Secondary School Speech (3) Prereq.: EDCI 2400 and credit for or registration in the speech courses required for a teaching minor in secondary school speech. 2 hrs. lecture; 2 hrs. lab/field experience in multi-cultural settings.

3149 Materials and Methods in Secondary School Spanish (3) Prereq.: EDCI 2400 and credit for or registration in 21 of the 25 sem. hrs. of courses required for a teaching minor in secondary school Spanish. 2 hrs. lecture; 2 hrs. lab/field experience in multi-cultural settings.

3150 Materials and Methods in Art in Elementary and Secondary Schools (3) Prereq.: EDCI 2045 and credit for or registration in 25 of the 31 sem. hrs. of courses required for a teaching minor in art. 2 hrs. lecture; 2 hrs. lab/field experience in multi-cultural settings.


3153 Materials and Methods in Communicative Disorders in the Elementary and Secondary Schools (3) Prereq.: consent of instructor; credit or registration in EDCI 3461: Speech, language, and hearing services in the public schools; organization and implementation.


3223 Adolescent Literature (3) See ENGL 3223.

3400 Educational Principles, Policies, and Practices for Special Populations (3) Prereq.: cohort membership or consent of instructor. 2 hrs. lecture; 2 hrs. lab/field experience. Current issues in identification, assessment, and instruction in the mainstream classroom for diverse students, such as different racial/ethnic groups.

3401 Curriculum in Grades 1-3 (3) Prereq.: HUEC 3381, 3382, 3383; membership in PK-3 teacher education program; and concurrent enrollment in HUEC 3055, EDCI 3482, and 1483. Comprehensive, integrated curriculum content for children in grades 1-3: reading/language arts, mathematics, social studies, science, and the arts.

3482 Pedagogy in Grades 1-3 (3) Prereq.: HUEC 3055, HUEC 3381, 3383; membership in PK-3 teacher education program; and concurrent enrollment in HUEC 3056, EDCI 3481, and 3482. 2 hrs. lecture; 3 hrs. lab/field experience in multi-level, multi-cultural settings. Instructional strategies and materials for children in grades 1-3.

3483 Assessment and Planning for Reflective Instruction: Grades 1-3 (3) Prereq.: HUEC 3055; HUEC 3381, 3382, 3383; PK-3 teacher education program; and concurrent enrollment in HUEC 3056, EDCI 3481, and 3482. 1 hr. lecture; 6 hrs. lab/field experience in multi-cultural and multi-level settings. The process of building the teaching and learning cycle (assessing, planning, teaching, reflecting) into integrated instruction of children in grades 1-3.

3625 Student Teaching in the Elementary Grades (12) Prereq.: HUEC 3055 and consent of instructor. 2 hrs. lecture; 30 hrs. lab. Pass-fail grading.


3635 Student Teaching in the Secondary Grades (12) Prereq.: see “Requirements for Student Teaching.” 2 hrs. lecture; 30 hrs. lab. Pass-fail grading.


3701 Assessment for Special Education Instructional Practice (3) Prereq.: EDCI 2701 and admission to a Teacher Education Program. 2 hrs. lecture; 2 hrs. lab/field experience. Requires practical field experience with students with disabilities in a school environment. Does not satisfy the Louisiana requirements for certification as an Exceptional Diagnostician. Assessing and assessing current methods; evaluation of standardized test results; designing and using assessment in the classroom; instructional design based on assessment data.

3702 Instructional Practice for Students with Disabilities I (3) Prereq.: EDCI 3701. 2 hrs. lecture; 2 hrs. lab. Instructional methods, procedures, and materials for teaching students with mild to moderate learning and behavior problems; overview of various methods and introductory procedures for explicit instruction and ongoing assessment.

3703 Instructional Practice for Students with Disabilities II (3) Prereq.: EDCI 3702. 2 hrs. lecture; 2 hrs. lab. Advanced instructional methods, procedures, and materials for teaching students with mild to moderate learning and behavior problems; includes the use of explicit instruction in academic subjects and ongoing assessment techniques focused on reflective practice and making informed instructional decisions.

3712 Secondary Methods and Transition Planning in Special Education (3) Prereq.: EDCI 2109, EDCI 2701, 2112. 2 hrs. lecture; 2 hrs. lab. Application of foundational knowledge in special programs for students with mild to moderate disabilities; focus on the design, delivery, and evaluation of transition services to post-school environments.

4003 Curriculum and Pedagogy in Secondary Disciplines (3) Prereq.: EDCI 3002 and concurrent enrollment in EDCI 4004, 4127, 4317, and 4440. 3 hrs. lecture; 2 hrs. lab/field experience in multi-cultural, multi-level settings. Principles and practices of an effective program in teaching secondary subjects.

4005 Student Teaching in Grades 6-12 (9) Prereq.: EDCI 4003 and concurrent enrollment in EDCI 4004 and in one of the following: BIOL 4004, CHEM 4004, ENGL 4003, ENGL 4203, FREN 4403, HIST 4304, MATH 4003, PHYS 4003, or SPAN 4003; permission of instructor. May be repeated for credit in a subject area 2 hrs. lecture; 3 hrs. lab/field experience in multi-cultural settings. Credit will not be given for both this course and EDCI 4465. Approaches in particular subject areas for middle and high school students.

4004 Critical Issues in Secondary School Content Area Teaching (3) Prereq.: EDCI 4465 and consent of instructor. May be repeated for credit in a subject area. 2 hrs. lecture; 3 hrs. lab/field experience in multi-cultural settings. Credit will not be given for both this course and EDCI 4466. Critical issues in the nature of knowledge and inquiry in specific school subjects.

4005 Student Teaching in Grades 6-12 (9) Prereq.: EDCI 4003 and concurrent enrollment in EDCI 4004 and in one of the following: BIOL 4004, CHEM 4004, ENGL 4003, ENGL 4203, FREN 4403, HIST 4304, MATH 4003, PHYS 4003, SPAN 4004. 1 hr. lecture; 24 hrs. lab/field experience in diverse multi-cultural settings. All day, all semester student teaching experiences; including observation, participation, and a minimum of 180 days of teaching (with a substantial portion of the 180 hrs. in a full day teaching) under the supervision of an assigned public school mentor teacher.

4025 Modern Principles and Practices in the Elementary School (3) Prereq.: consent of instructor. Current issues in elementary education; research findings applied to the solution of instructional problems.

4030 Middle School Curriculum and Instruction (3) Principles and practices of middle grades education with emphasis on reflective practice and middle grades students.

4040 Principles of Secondary Education (3) Prereq.: consent of instructor. Analysis of criticisms of secondary education; functions of schools and institutions in a complex political, social, and economic matrix; current theories and relevant research.

4055 Principles and Practices in Kindergarten Education (3) Prereq.: EDCI 2045. 2 hrs. lecture; 2 hrs. lab. Credit will not be given for both this course and EDCI 2655. Same as EDCI 4055. Classroom organization and instructional management using pre-academic objectives for kindergarten as an entry point into elementary school.

4057 Methods of Teaching Nursery School and Kindergarten (3) Prereq.: HUEC 3053 or PSTC 2076. 2.50 gpa required for registration in 2 hrs. lecture; 2 hrs. lab. Same as HUEC 4057. Essentials needed for successful involvement with children from various socioeconomic and cultural groups at the nursery and kindergarten teaching methods, and materials providing optimum learning experiences for the child under six.

4058 Student Teaching in the Kindergarten (5) See HUEC 4058.

4113 Language Acquisition and Development of Communication Skills in the Young Child (3) Prereq.: EDCI 3152 or equivalent. Analysis of stages of native language acquisition and development of communication skills in children from birth to six years.

4241 Special Studies in Art Education (3) Research in areas directly related to the teaching of art.

4249, 4270 Art Education Workshop (3,3) Art as an integral part of the school curriculum; art activities and classroom procedures, materials, and techniques.

4270 Current Practices in Art Education (3) Contempo-
4482 Capstone Seminar in Early Childhood Education (3) Prereq.: ED 4502, concurrent enrollment in EDCI 4481. Critically analyzing epistemology and contexts of learning; conducting action research; communicating teaching expertise.

4690 Internship for Teachers of Mathematics (3) Prereq.: 3 sem. hrs. in computer science or equivalent. 2 hrs. lecture, 1 hrs. lab. Field experience in computer science.

4695 Internship in Curriculum and Instruction (3-12) Prereq.: permission of the College of Education Office of Field Experiences. Pass-fail grading. Specific teaching or practice experience in a public school setting; periodic evening seminars.

4701 Trends and Issues in Educating Learners with Exceptionalities (3) Prereq.: ED 4701 or equivalent. Discussion of trends and issues related to educating learners who have exceptionalities.

4704 Contingency Management with Exceptional Children (3) Prereq.: EDCI 2700 or equivalent. Skills for behavior management of children in special populations; theoretical and historical foundations; practical application of techniques.

4705 Learning and Behavior Principles Applied to Students with Exceptionalities (3) Prereq.: EDGC 2700 and 4460. 2 hrs. lecture, 2 hrs. lab/field experience. Development of intervention programs based on the principles of applied behavior analysis; emphasis on proactive strategies that promote learning and prosocial behavior.

4710 Consultation, Collaboration, and Co-teaching (3) Prereq.: EDGC 2700 or 4701. Professional roles and models and practices in building cooperative and inclusive environments for education; emphasis on collaboration, consultation, co-teaching, and building effective communications among educators, parents, and other professionals in providing education and other services to children with exceptionalities.

4749 Student Teaching in Special Education: Mild/Moderate Disabilities (9) F.S.S. Prereq.: credit or registration in EDGC 4701. 30 hrs. lab. Pass-fail grading. Laboratory teaching experience to accompany the minor in special education.

4800 Teaching in the Multicultural Classroom (3) Strategies and resources for teaching students of cultural diversity in the classroom; development of units and activities of cultural variety.

4890 Special Topics in Curriculum and Instruction (1-3) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. Methods, trends, and issues in curriculum and instruction.

5884 Special Topics in Language Education (1-3) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. New methods, trends, and techniques.

7002 Trends and Issues in Mental Retardation (3) An in-depth study of issues and trends in emotional and behavioral disturbance including diagnosis, etiology, current theory, and delivery systems.

7005 Trends and Issues in Learning Disabilities (3) F-E An in-depth study of the meaning and concepts associated with the field of learning disabilities and the divergent characteristics of children with language, academic, and cognitive impairments.

7008 Trends and Issues in Emotional and Behavioral Disturbance (3) F-O An in-depth examination of issues and trends in emotional and behavioral disturbance including diagnosis, etiology, current theory, and delivery systems.

7009 Advanced Evaluation and Assessment for Students at Risk (3) Prereq.: ED 5701 or equivalent. Requires practical field experience with students with disabilities in a school environment. Identification and diagnosis of learning and behavior problems; IDEA and Section 504 legal requirements; administration and interpretation of individually administered, norm-referenced tests, design of classroom-based assessments and methods of comparative analysis; instructional and service recommendations based on multiple assessment data.

7010 Advanced Practicum in Evaluation and Assessment (3) Prereq.: EDCI 7009. Supervised experience in evaluation and educational assessment; practical and in-depth techniques for parental screening, for conducting individual assessments, including evaluating for eligibility, interpreting data for instructional decision-making, and for designing ongoing data collection systems.

7048 Curriculum and Instruction (3) Prereq.: ED 7101 or equivalent. Students with disabilities in a school environment. Identification and diagnosis of learning and behavior problems; IDEA and Section 504 legal requirements; administration and interpretation of individually administered, norm-referenced tests, design of classroom-based assessments and methods of comparative analysis; instructional and service recommendations based on multiple assessment data.

7015 Teaching Strategies for At-Risk Learner (3) Prereq.: EDGC 2701 or 4701 or equivalent. Theoretical foundations, instructional strategies, and materials for teaching at-risk students.

7016 Teaching in the Elementary School Mathematics (3) Prereq.: EDGC 3125 or equivalent. Theoretical foundations, instructional strategies, and materials for teaching elementary school mathematics.

7017 Teaching Strategies for Students with Disabilities (3) F-S. Prereq.: EDGC 4249. 2 hrs. lecture; 2 hrs. lab. Evaluating the research base and theories supporting the use of strategic instructional and assessment models; emphasis on the use of strategic instruction with students with mild to moderate disabilities.

7019 Teaching Social and Emotional Skills to Students with Disabilities (3) Prereq.: EDGC 4701 or equivalent. Instructional planning and methods for teaching functional and social behavior to students with disabilities.

7021 Legal and Ethical Issues in Special Education (3) Prereq.: consent of instructor. Specific emphasis on IDEA; Section 504, case law, regulatory issues, professional responsibilities, and CCC standards for professional practice.

7024 Seminar on Transition for Students with Disabilities (3) An in-depth examination of the secondary/postsecondary transition of students with mild disabilities.

7033 Quality Assurance in Special Education (3) Prereq.: EDGC 4701 or equivalent. Special education law, or permission of instructor. 3 hrs. lecture; 1 hr. lab. The design and implementation of quality assurance and compliance monitoring for programs serving students with disabilities; focus on the federal and state program requirements and quality assurance approaches prevalent in the field of disabilities.

7105 Teaching Secondary Mathematics (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7106 Teaching Secondary Science (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7143 Techniques for Teaching Reading in the Middle and Secondary School (3) Prereq.: EDGC 7107 or 7141 or consent of instructor. The theory and practice of teaching reading in the classroom.

7150 Teaching Children with Special Needs (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7155 Teaching Reading to Linguistically and Culturally Diverse Students (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7156 Teaching Reading in the Elementary School (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7160 Teaching Reading in the Secondary School (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7170 Teaching in the Classroom (3) Prereq.: consensus of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7180 Teaching Strategies for Students with Special Needs (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7190 Teaching Middle School Mathematics (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7200 Teaching Middle School Science (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7205 Teaching Middle School Social Studies (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7210 Teaching Middle School Language Arts (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7220 Teaching Middle School Foreign Language (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7230 Teaching Middle School Science (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7240 Teaching Middle School Foreign Language (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7250 Teaching Middle School Social Studies (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7260 Teaching Middle School Language Arts (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7270 Teaching Middle School Finance (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7280 Teaching Middle School Science (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7290 Teaching Middle School Social Studies (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.

7300 Teaching Middle School Language Arts (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topic varies.
7455 Foundations of Secondary or K-12 Educational Theory, Policy, and Practice (3) Prereq.: cohort membership or consent of instructor. Social contexts, history, and philosophy of current and potential, conflicting purposes and functions of public schooling; economic and political analysis of educational policy; implications of conflicting approaches to teaching and learning; current theory and research.

7460 Full Practicum in Secondary or K-12 Schools (5) Prereq.: cohort membership or consent of instructor. 1 hr. lecture; 8 hrs. lab. Pass-fail grading. First of two practica in local schools.

7461 Spring Practicum in Secondary or K-12 Schools (5) Prereq.: cohort membership or consent of instructor. 1 hr. lecture; 8 hrs. lab. Pass-fail grading. Second of two practica in local schools.

7465 Seminar: The Teacher-Researcher in Secondary School Settings (3) Prereq.: cohort membership or consent of instructor. May be taken for a max. of 6 sem. hrs. when topics vary. Study of teacher-researcher literacy; its application to secondary teaching and curriculum in the subject area (English, mathematics, science, or social studies).

7467 Teaching Culture in the Foreign Language Class: K-12 (3) Prereq.: cohort membership or consent of instructor. Class observation is required. Development of an awareness of cultures; techniques for presenting the foreign language; integration of culture-related skills in daily lessons; use of authentic cultural materials.

7468 The Teacher-Researcher in Art Education (3) Prereq.: cohort membership or consent of instructor. Study of teacher-researcher literacy and its application to art education.

7475 Research Project in Secondary or K-12 Teacher Education (3) Prereq.: cohort membership or consent of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary. 2 hrs. lecture; 2 hrs. lab. Development, completion, and presentation in curriculum and instruction that grows out of fifth-year clinical experiences and precedes course work.

7480 Teaching Practicum I (6) Prereq.: cohort membership or consent of instructor and concurrent enrollment in EDCI 7481, 7482, 20 hrs. lab. Pass-fail grading. Along with the Seminar in Teaching, Research and the Master's Project, this course is designed to partially fulfill student teaching requirements and to prepare students to be effective classroom teachers.

7481 Teaching Practicum II (6) Prereq.: cohort membership or consent of instructor and concurrent enrollment in EDCI 7481, 7482, 20 hrs. lab. Pass-fail grading. Along with the Seminar in Teaching, Research and the Master's Project, this course is designed to partially fulfill student teaching requirements and to prepare students to be effective classroom teachers.

7482 Seminar in Teaching Research I (3) Prereq.: cohort membership or consent of instructor and concurrent enrollment in EDCI 7480, 7481, 2 hrs. lecture; 2 hrs. lab. An integral part of the fifth-year teacher research project; along with the Teaching Practicum and the Master's Project, this course partially fulfills student teaching requirements.

7483 Seminar in Teaching Research II (3) Prereq.: cohort membership or consent of instructor and concurrent enrollment in EDCI 7480, 7481, 2 hrs. lecture; 2 hrs. lab. An integral part of the fifth-year teacher research project; along with the Teaching Practicum and the Master's Project, this course partially fulfills student teaching requirements.

7484 Master's Project I (3) Prereq.: cohort membership or consent of instructor and concurrent enrollment in EDCI 7481, 7482, 20 hrs. lab. Development and completion of a research problem in curriculum and instruction that grows out of the first semester's clinical experience.

7485 Master's Project II (3) Prereq.: cohort membership or consent of instructor and concurrent enrollment in EDCI 7481, 7483, Development and completion of a research problem in curriculum and instruction that grows out of the second and culminating semester's clinical experience.

710 Advanced Seminar and Practicum in Curriculum and Instruction (3-6) The student, major professor, and a committee of four other experiences around the student's needs and interests.

762 Assessment Techniques and Practice in Reading (3) Prereq.: EDCI 7105, 7115, or equivalent. 2 hrs. lecture; 2 hrs. lab. Mastery level skills for evaluating reading strengths and weaknesses of elementary and secondary school students; their individual reading models and a practical approach to assessing them.

763 Guiding Classroom Instruction and Practicum in Reading (3) Prereq.: EDCI 7105 and 7482; or equivalent. 2 hrs. lecture; 2 hrs. lab. Field experience in various job-related settings. Teaching experiences at the local school and university levels; administrative experience at the parish level, and consultant experience at the state level.

765 Applied Research in Reading (3) Prereq.: enrollment in an advanced seminar or practicum and/or ELRC 4249; or equivalent. Individual research projects.

7701 Advanced Seminar in Special Education I (3) F Prereq.: ELRC 4249. Current trends and issues in special education, including legal, ethical, philosophical, theory, and research. 

7702 Advanced Seminar in Special Education II (3) S Prereq.: EDCI 7701. Current trends and issues in special education, including special research and instructional methodology; builds upon primary concepts presented in EDCI 7701, with emphasis on the further development of oral and written expression.

7713 Individual Study in Special Education (3) V Historical perspective, social, emotional, and educational characteristics; administrative considerations; sociological and psychological studies; special populations.

7761 Curricular Theories and Methods for Teaching the Gifted and Talented (3) Prereq.: EDCI 7505 or PSYC 4030. Requires intermediate understanding of research and theories of gifted and talented. Advanced course in the understanding and application of single case experimental designs in special education and related disciplines.

7760 Nature and Needs of the Gifted and Talented (3) V Historical perspective, social, emotional, and educational characteristics; administrative considerations; sociological and psychological studies; special populations.

771 Seminar in Current Trends in Education Literature (1-2) S, U Seminar for beginning doctoral students in curriculun and instruction. May be taken for a max. of 6 hrs. of credit. Preapproval required.

7821, 7822 Problems in Curriculum and Instruction (2-4, 2-4) For advanced graduate students who are qualified to undertake individual problems.

824 Elementary School Curriculum (3) Content, organization, and evaluation of the elementary school curriculum.

7825 Secondary School Curriculum (3) Content, organization, and evaluation of the secondary school curriculum.

7830 Advanced Seminar in Junior High/Middle School Instruction (3) For advanced students in elementary and secondary education with special interest in the instructional program for early adolescents.

7843 Early Childhood Education (3) See HUEC 7843. Historical, theoretical, philosophical, and programmatic issues that effect contemporary early childhood education.

7844 Creativity and the Curriculum (3) Role of creativity in designing the educational environment for young children; philosophy, teaching techniques, and instructional planning and materials; and planning for today's multicultural society in the development of creativity.

7845 Teaching Concepts in Early Childhood (3) Methods and materials for the teaching of mathematics, science, and social studies concepts in the early childhood curriculum.

7846 Diagnostic Teaching in Early Education (3) Prereq.: EDCI 4055 or equivalent. Using age-level competency skills for developing diagnostic strategies for young children to be used as the basis for instructional planning.

7880 Seminar in Reading (2) May be taken for a max. of 6 sem. hrs. credit when topics vary; a minimum of 4 sem. hrs. is required for each doctoral student in reading. Special topics may be offered under this course number.

7900 Doctoral Orientation Seminar (1) Orientation to the doctoral program for new and resident doctoral students. Pass-fail grading.

7991 Curriculum Theory (3) Means for strengthening the curriculum; links between past and current concepts of curriculum.

7902 Analysis of Research on Teaching (3) Prereq.: ELRC 7800 or equivalent. Theory of design and application of research related to systematized instruction.

7903 Curriculum Planning (3) Prereq.: EDCI 7901 or equivalent. Principles of curriculum needs assessment, design, implementation, and evaluation.

7904 Education and Cognition (3) S Understanding human cognition and cognitive change; implications for educational theory, practice, and research.

7910 Traditions of Inquiry in Curriculum and Instruction (3) Theoretical and methodological issues related to research traditions in curriculum and instruction; development of the philosophy of education.

7920, 7921 Analysis of Research in Curriculum and Instruction (3) Prereq.: ELRC 7241 or equivalent. A max. of 6 sem. hrs. may be earned in this series; only 3 sem. hrs. may be earned in any one area. Factors influencing research and critical analysis of selected research in one of the following areas: curriculum, mathematics, science, language arts, social, or early childhood education.

8000 Thesis Research (1-12 per sem.) S/U grading.

9009 Dissertation Research (1-12 per sem.) S/U grading.
DISASTER SCIENCE AND MANAGEMENT • DSM

2000 Hazards, Disasters, and the Environment (3) Exploration of the interaction processes between natural/technical/hazards and society that cause disasters; introduction to the history and technological hazards and disasters; hazards and disaster management; environmental considerations and impacts.

2010 Foundations of Emergency Management (3) Introduction and overview of emergency management functions and processes in federal, state, and local governments; roles of nonprofit and private organizations in disaster planning, response, and recovery; critical management issues in effective response and recovery to natural and man-made hazards.

2020 Hazards and Counterterrorism (3) Terrorism and its origins; consequences of modern terrorist attacks and campaigns; ideological and religious justifications for terrorism; domestic terrorist networks and international terrorist networks; state-sponsored terrorism; factors contributing to the successful preemption and disruption of terrorist attacks and networks.

3200 Technology and Emergency Management (3) Application of technology that may be applied in emergency management, response, recovery, and mitigation; current and emerging technology applications; special issues and problems associated with the use of technology in emergency management.

3900 Disaster Science and Management Internship (3) Prereq.: DSM 2000 and junior standing. Written consent of DSM program coordinator and supervising faculty member. Faculty student interaction with an agency or organization whose mission is considered relevant to the emergency management system or disaster planning, response, or recovery.

3910 Hazards Seminar (1-3) Prereq.: DSM 2000 and junior standing. May be repeated for a max. of 3 sem. hrs. when topics vary. Guest speakers and presentation of reports and discussion with students and faculty concerning a broad range of issues, problems, and topics related to disasters and emergency management.

4600 Crisis Management (3) Also offered as MGT 4600. Introduction to crisis management as it is applied in public, private, and non-profit organizations; crisis management is a function of all organizations and supports strategic goals of ensuring survivability, economic viability, and organizational continuity.

4900 Research in Disaster Science and Management (3) Prereq.: SOC 2221 or equivalent and 12 hrs. of course work including DSM 2000 and core courses in the disaster science management concentration or minor, consent of instructor. Directed study concerning a broad range of issues, problems, and topics related to natural and man-made hazards, disasters, and emergency management.

ECONOMICS • ECON

General education courses are marked with stars (★).

★ 2000 Principles of Microeconomics (3) An honors course, ECON 2001, is also available. Credit will not be given for both this course and ECON 2001. 2020 or 2030. Study of markets and competition, both perfect and imperfect, and economic decision-making in both the short and long run.

★ 2010 Principles of Macroeconomics (3) Prereq.: ECON 2000 or 2001. An honors course, ECON 2111, is also available. Credit will not be given for both this course and ECON 2111 or 2010. Study of economy-wide phenomena, including inflation, unemployment, the monetary system, economic growth, international trade and finance.

2011 HONORS: Principles of Macroeconomics (3) Same as ECON 2010, with special honors emphasis for qualified students. Credit will not be given for this course and ECON 2000.

★ 2030 Money, Banking, and Macroeconomic Activity (3) Prereq.: ECON 2000 or 2010 and 2011 or 2030. An honors course, ECON 2036, is also available. Credit will not be given for both this course and ECON 2036. Role of commercial banks, other financial institutions, and the central bank in affecting the performance of the economy; relationships of supply and demand, price, production, and employment; internal and external effects of U.S. fiscal and monetary policy.

HONORS: Money, Banking, and Macroeconomic Activity (3) Same as ECON 2035, with special honors emphasis for qualified students. Credit will not be given for this course and ECON 2015.

3999 Independent Study: Economic Problems (1-3) May be taken for credit for a max. of 6 sem. hrs. May be repeated for a max. of 3 sem. hrs. when topics vary. Consent of instructor. Open to juniors standing; May be repeated for a max. of 3 sem. hrs. of credit as directed study.


4025 The Russian Economy in the 20th Century (3) Prereq.: ECON 2010 and 2030; or 2030. Also offered as HIST 4126. Operation, growth, and performance of the Russian economy under both planned and market economies.

4030 Development Economics (3) Prereq.: ECON 2000 and 2010; or 2030. Political, social, and technological factors affecting development of the third world.

4040 Economic Development Policy (3) Prereq.: ECON 2000 and 2010; or 2030. Study of problems of growth and development in less developed countries and in the United States and other advanced industrialized countries in the economic development of Third World countries.

4050 Economic Development of Europe (3) Prereq.: ECON 2000 and 2010; or 2030. Also offered as HIST 4126. Major elements in the economic development of resources, transportation, marketing, finance, labor, and economic policy.

4070 Economic Growth (3) Prereq.: ECON 2000 and 2010; or 2030. Analysis of the determinants of economic growth through development of theoretical and empirical models of economic growth; discussion of both old and new growth theory and convergence of income levels across countries.

4075 American Economic History to 1860 (3) See HIST 4075.

4080 American Economic History, 1860 to the Present (3) See HIST 4076.

4110 Public Finance (3) Prereq.: ECON 2000 and 2010; or 2030. Economic theory applied to the private market and the public sector; public goods, externalities, and public policy decisions, including the role of government, and the role of the central bank in affecting the performance of the economy.

4200 Labor Economics (3) Prereq.: ECON 2000 and 2010; or 2030. Study of labor market; labor supply and demand, human capital, racial and sex discrimination, effects of minimum wage laws, causes of wages and employment discrimination.

4230 Economics of Human Resources (3) Prereq.: ECON 2000 or 2010. Application of empirical research and economic theory to human resource management and internal labor market; topics include hiring, training, pay, promotion, evaluation, layoffs, and termination from an economic perspective.
4320 Environmental Economics (3) Prereq.: ECON 2000 and knowledge of calculus and government failure, benefit cost analysis, the economics of energy, the efficient allocation of pollution, stationary, and mobile source air pollution, water pollution, and toxic wastes.


4421 Health Care Economics (3) Prereq.: ECON 2000 and 2010. The economics of health care with particular emphasis on hospitals, physicians, and other health care providers, as well as government programs.


4520 International Economics (3) Prereq.: ECON 2000 and 2010. The basic theories of international trade including classical, neoclassical, and post-neoclassical theories; discussion on how these theories relate to current events and policies; brief overview of major U.S. trade law; overview and analysis of major bilateral and multilateral trading agreements including the North American Free Trade Agreement, the European Union, and the World Trade Organization.

4530 The Chinese Economy (3) Prereq.: ECON 2000 and 2010, or 2030. Review of the history of the economy in China; major governmental policies in China that have shaped the growth and development of the Chinese economy; the development of the manufacturing and industrial sectors; China’s role in the international trade and financial markets.

4540 Economic Forecasting (3) Prereq.: ECON 2000 and 2010, or 2030, and ISDS 2000 or equivalent. Applications of methods used in business and economic forecasting; trend analysis, time-series modeling, regression analysis and combination forecasting.

4550 International Finance (3) Prereq.: ECON 2035 or equivalent. Exchange rates and the foreign exchange market; balance of payments and international trade; international money and capital flows; international monetary institutions.

4560 Central Banking and Monetary Policy (3) Prereq.: ECON 2035. History, economic functions, operating techniques, and policies of central banks; the role of monetary policy in determining price levels and growth; the Federal Reserve System and current problems of monetary policy and control.

4610 Introductory to Mathematical Economics (3) Prereq.: ECON 2000 and 2010, or 2030, and college algebra; or equivalent. Not normally open to students who have had differential calculus. Mathematical techniques used by economists; their application to economic analysis.

4620 Game Theory and Applications (3) Prereq.: ECON 2000 and 2010 or ECON 2030. Methods to analyze optimal or strategic behavior in situations with multiple interactive decision makers. Topics range from the formal analysis of parlor games, cold war, auctions, voting behavior to pricing decisions of firms.

4630 Introduction to Econometrics (3) Prereq.: ECON 2000 and 2010, or 2030, and MATH 1431 or equivalent; and ISDS 2000 or equivalent. Not open to students with credit in ECON 7640. Basics of forecasting and control, the Federal Reserve System and current problems of monetary policy and control.

4640 Financial Economics (3) Prereq.: ECON 2000 and 2010, or 2030, and ISDS 2000 or equivalent. Econometric methods used to examine financial data; tests of market efficiency, forecasting volatility of financial markets, estimating value at risk.

4710 Aggregate Economic Analysis (3) Prereq.: ECON 2000 and 2010. Environmental economics; energy; the efficient allocation of pollution, stationary, and mobile source air pollution, water pollution, and toxic wastes.


4730 The Evolution of Economic Thought (3) Cultural and historical factors influencing different types of economic thought.

4900 Selected Topics in Economics (3) Prereq.: ECON 2000 and 2010. May be taken for a max. of 6 sem. hrs. when topics vary.

7070 Theory of Economic Growth (3) Prereq.: ECON 7175. Theories of economic growth and their development.

7120 Public Finance Theory (3) Foundations of welfare economics for evaluating efficiency and equity of taxation and public spending policies; incidence and optimality of taxation.

7135 Advanced Topics in Public Finance (3) May be taken for a max. of 6 hrs. of credit when topics vary. Special issues in taxation, public expenditures, and political economy.

7240 Seminar in Labor Economics (3) Theoretical and empirical models of the labor market and unemployment; labor market and human capital, the inflation-unemployment trade-off.

7320 Seminar in Environmental and Resource Economics (3) Neoclassical and post-neoclassical traditions of resource utilization; emphasis on biophysical underpinnings of economics and the functioning of the American economy; the role of environmental policies in energy, materials, food, and air and water pollution.

7325 Seminar in Applied Resource Economics (3) Application of economic theories, methodologies, and modeling techniques to resource management; measurement problems; intertemporal allocation, technological changes and resource substitution; and utilization of environmental resources.

7420 Health Care Economics (3) Prereq.: ECON 4720 or equivalent. Economics of health care with particular emphasis on demand and supply of health care services; roles of insurance and government in provision of health care services.

7470 Economics of Regulated Enterprise (3) Economic analysis of problems of regulation and antitrust, with emphasis on philosophy of regulation, rate setting, earnings control, coordination, and national policy.

7480 Seminar in Industrial Organization (3) Organisational and economic theories of industrial organization; competitive and non-competitive models.

7570 Seminar in International Finance (3) Analysis of international trade and finance; theories of trade, balance of payments, and international monetary relations.

7575 Seminar in International Trade (3) Topics in political economy of international trade; causes and effects of international trade; gains from trade, theory of tariff and non-tariff barriers, and the macroeconomic effects of trade policies.

7610 Mathematics for Economists (3) Mathematical principles with frequent applications to economics; functions, derivatives, differentials, integrals, Taylor's series, matrix algebra, determinants, roots, quadratic forms, constrained and unconstrained optimization, and principles of linear and non-linear systems of equations.

7615 Dynamic Analysis (3) Prereq.: ECON 7610 or calculus and linear algebra. Mathematical analysis of dynamic systems with applications to economics; integral calculus, differential equations, difference equations and optimal control theory.

7630 Econometric Methods (3) Prereq.: calculus and linear algebra, or concurrent enrollment in economics 7610. For students interested in developing research skills in economics. Empirical methods in econometrics; statistical inference; regression techniques applied to a general linear model; problems involved in regression analysis; extensions of the general linear model.

7635 Econometric Methods II (3) Prereq.: ECON 7630 or equivalent. Econometric techniques for heteroscedasticity, autocorrelation, simultaneous equations, pooling time series and cross-sectional data; model specification techniques.

7632 Econometric Theory III (3) Prereq.: ECON 7631 and either ECON 7610 or differential calculus and linear algebra. Emphasis on the pure theory of econometrics; properties of estimators, sample properties of ordinary least squares, asymptotic distribution theory, generalized least squares and the general multivariate normal distribution.

7633 Dynamic Econometric Theory (3) Prereq.: ECON 7632. Time-series analysis; testing and model selection; distributed lags and polynomial distributed lag models; equation models; autoregressive moving average processes; theorems on stationarity and non-stationarity; autoregressive conditional heteroscedasticity; causality and exogeneity; unit root, co-integration, and error correction models.

7700 Price Theory I (3) Development of microeconomic models of the individual firm, including a nonparametric approach to demand.

7710 Macroeconomics I (3) Basic models of income, employment, and prices. The models focus on aggregate demand and supply sectors and include an aggregate demand-supply model in which IS-LM underlies aggregate demand, an introduction to the new Keynesian/new Neoclassical synthesis model, and an introduction to growth theory.

7715 Macroeconomics II (3) Prereq.: ECON 7710 and 7610 or equivalent. Dynamic models of the economy; includes growth models, business cycle dynamics, and wage-price dynamics.

7720 Price Theory II (3) Prereq.: ECON 7631 or equivalent. Theories of utility, demand, cost, production, factor prices, and welfare using an advanced mathematical approach.

7725 Advanced Microeconomic Theory (3) Prereq.: ECON 7610, 7700, and 7720, or equivalent. Advanced price theory; capital theory; general equilibrium theory; distribution theory, market structures.

7735 Macroeconomics III (3) Prereq.: ECON 7710 and 7610. Advanced dynamic general equilibrium models; specific models include recursive methods, real business cycle models, new Keynesian economics, asset pricing models, endogenous growth theories, and empirical tests of these models.

7740 History of Economic Thought: The Classical Period (3) Development of economics as an autonomous science; Greek, Judeo-Christian, and enlightenment approaches to economic phenomena; special attention to Adam Smith.

7745 History of Economic Thought: Modern Period (3) Development of economics from 1800 to 1900; emphasis on classical followers of Smith, Marx, 19th century positivism and socialism, the marginal revolution.

7790 Seminar in Advanced Economic Problems (3) May be taken for a max. of 6 hrs. of credit.

8900 Dissertation Research (1-9) May be repeated for credit. Pass-fail grading.

9000 Dissertation Research I (1-12 sem.) See S’8-U’ grading.

EDUCATION • EDCU

2000 Special Topics in Education (1-3) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. Methods, trends, and issues in education.
Higher Education

4364 Student Affairs in Higher Education (3) V Basic concepts and issues in the college student affairs field.

7600 Issues of Race and Gender in Higher Education (3) Historical and socio-political perspectives on the higher education experiences of women, African-Americans, Asian-Americans and Hispanic/Latino, focusing primarily on the period from the 1960s to the present.

7601 Foundations of Higher Education (3) History of the sociological and philosophical foundations for higher education in the United States.

7603 Leadership in Higher Education (3) S Analysis of leadership issues and theory relating to postsecondary education, including the college presidency and academic governance; institutional culture; student diversity; curricular change, and new providers of higher education.

7604 Politics and Policy of Higher Education (3) Political and policy issues surrounding higher education; issues of race and gender, politics, and policy of student loans; policies toward and prepared college students; collective bargaining; the accreditation process.

7605 Higher Education and the Law (3) Legal issues concerning higher education, including tenure, academic freedom, campus crime, sexual harassment, laws against discrimination, student discipline, and liability for accidents and injuries.

7606 Curriculum and College Teaching (3) Critical analysis of college curriculum and approaches to teaching; historical development of curricular models; introduction to teaching and learning theories.

7607 Finance in Higher Education (3) Public policy and theory of financing higher education; topics include tuition, pricing, tuition policy, financial management of institutions, and financial aid.

7609 Strategic Planning in Higher Education (3) Strategic plans for institutions of higher education; processes by which those plans are developed; higher education strategy within the context of the cultural and competitive environment; emphasis on current topics in organizational strategy.

7610 Assessment and Evaluation in Higher Education (3) Analysis of assessment and evaluation practices in higher education; role of assessment in policy development and strategic planning.

7611 College Students in the United States (3) Critical analysis of issues related to college students in the United States, including access, choice, climate, student organizations, and development and identity.

Electrical Engineering • EE

2120 Circuits I (3) Prereq.: credit or registration in MATH 2900 and PHYS 2102 required or consent of instructor. Time-domain analysis of electrical networks.

2130 Circuits II (3) Prereq.: EE 2210 and MATH 2900. Frequency-domain analysis of electrical networks.

2230 Electronics I (3) Prereq.: EE 2210. Terminal behavior of semiconductor devices and basic circuits.

2331 Electronics Laboratory I (2) Prereq.: concurrent registration in EE 2210. 1 hr. lecture; 2 hrs. lab.

2720 Digital Logic I (2) Prereq.: admission to the College of Engineering. Basic logic gates; minimization methods; analysis and synthesis of combinational logic networks; design examples.

2730 Digital Logic II (2) Prereq.: EE 2720. Analysis and design of sequential circuits; practical impact of design choices.

2731 Digital Logic Laboratory (2) Prereq.: EE 2710. 1 hr. lecture; 2 hrs. lab. Design of digital circuits with conventional logic gates and flip-flops; design and testing of various combinational and sequential circuits.

2950 Comprehensive Electrical Engineering (3) Prereq.: MATH 3310 or equivalent. Fundamental engineering major. Elementary circuits, devices, and systems in electrical engineering.

3600, 3601 Special Projects (2,2) Prereq.: consent of instructor on special project selected by instructor and student.

3700 Engineering Practice (3) Prereq.: permission of department; Pastoral worth with instructor on special project selected by instructor and student.

3707 Engineering Practice (3) Prereq.: permission of department and either completion of one co-op session or six months of full-time employment in an appropriate area. Pass-fail grading. Written final report required.

Work experience in solving electrical and computer engineering problems in an engineering environment.

3140 Probability for Electrical and Computer Engineering (3) Prereq.: MATH 2900. Basic concepts of probability theory with application to electrical and computer engineering; probability axioms; continuous, discrete, and conditional probability density and distribution functions; expectations and characteristic functions; introduction to statistical inference and stochastic processes.

3160 Introduction to Digital Signal Processing (3) Prereq.: EE 3610 or equivalent. Digital processing of continuous-time signals; Discrete-time Fourier transform; z-transform, signal processing system transforms; Digital filter design techniques; Discrete Fourier transform and FFT algorithm.

3220 Electronics Laboratory I (2) Prereq.: EE 2230, 2210, and 2231. Analysis and design of electronic circuits; emphasis on concepts and device models.

3221 Electronics Laboratory II (2) Prereq.: EE 2233 and concurrent registration in EE 3220. 1 hr. lecture; 2 hrs. lab.

3232 Solid State Devices I (3) Prereq.: EE 2230 and 2130. Physics and analysis of basic semiconductor devices; principles of integrated circuit fabrication.

3230 Electrical and Magnetic Fields (3) Prereq.: MATH 2090 and 2107. Maxwell's equations; wave propagation and reflection in isotropic media; static fields.

3410 Electric Power (3) Prereq.: EE 2130. Basic principles of electromechanical energy conversion and power system analysis.

3530 Introduction to Control Engineering (3) Prereq.: EE 2130. Modeling, simulation, realization, analysis, and feedback control design of dynamic systems.

3610 Signals and Systems (3) Prereq.: EE 2130. Methods of analysis of continuous-time and discrete-time signals and systems.

3750 Microprocessor Systems (2,2) Prereq.: CSC 1250 and EE 2732. Theory and design of microprocessors; semiconductor technologies, architectures, assembly language, software development, input/output design, applications, and interfacing.

3751 Microprocessor Laboratory (2) Prereq.: EE 3750. 1 hr. lecture; 2 hrs. lab.

3755 Computer Organization (3) Prereq.: EE 2730 or equivalent. Structure and organization of computer systems; instruction sets; arithmetic; data path and control design.


3950 Electromagnetics (2) Prereq.: EE 3410. For nonelectric engineering majors. Basic electronics and instrumentation.

4000 Special Topics in Electrical Engineering (3) May be taken for a max. of 6 hrs. of credit when topics vary. Students in curricula other than electrical engineering should consult the instructor. ABET category: 3 hrs. engineering science. Selected topics of current interest.

4001 Special Topics in Electrical Engineering (3) May be taken for a max. of 6 hrs. of credit when topics vary. Students in curricula other than electrical engineering should consult the instructor. ABET category: 1 hr. design; 2 hrs. engineering science. Selected topics of current interest.

4002 Special Topics in Electrical Engineering (3) May be taken for a max. of 6 hrs. of credit when topics vary. Students in curricula other than electrical engineering should consult the instructor. ABET category: 2 hrs. design; 1 hr. engineering science. Selected topics of current interest.

4120 Network Analysis (3) Prereq.: EE 3610 and MATH 2097. ABET category: 2 hrs. design; 1 hr. engineering science. Linear networks, with introduction to filters and network synthesis.

4130 Graph Theory (3) Prereq.: EE 2130 or equivalent. Graph and subgraph properties, graph operations, enumeration techniques, and applications to analysis and synthesis of electric networks; Kirchoff's third and fourth laws.

4140 Algorithms and Implementations for Digital Signal Processing (3) Prereq.: consent of instructor. Design algorithms for FIR and IIR filters, adaptive estimation and its applications, and multirate digital signal processing; Digital signal processors and implementations for signal processors for spectrum analysis and estimation, FIR and IIR digital filters, and adaptive echo cancellation.

4232 Solid State Devices II (3) Prereq.: EE 3232. Physics of advanced semiconductor devices, including photonic and high-frequency devices.

4240 Linear Circuit Design (3) Prereq.: EE 3220 and 3221. Credit or registration in department: 2 hrs. lecture; 2 hrs. lab. ABET category: 2 hrs. design; 1 hr. engineering science. Fabrication and use of discrete and monolithic integrated circuits; use of building blocks for design of analog systems.

4242 VLSI Design (3) Prereq.: EE 2310, 2320, 2230, and 2231. ABET category: 2 hrs. design; 1 hr. engineering science. Analysis and design of digital integrated circuit logic gates in bipolar and MOS technology; semiconductor memories and their operations.

4260 Semiconductor Measurements and Characterization (3) Prereq.: consent of instructor. Basic principles of semiconductor materials; their influence on device characteristics; bulk measurements such as resistivity, mobility, and lifetime; diffusion profiles and oxide layers; thin film characterization techniques; I-V and C-V measurements; emphasis on silicon.

4262 Electronic Instrumentation and Metrology (3) Prereq.: EE 3220 and 3221 or equivalent. 2 hrs. lecture; 2 hrs. lab. ABET category: 2 hrs. design; 1 hr. engineering science. Application of electronic principles to the design and development of practical systems including instrumentation, data analysis, and metrology; design and construction of test projects.

4270 Optical Electronics (3) Prereq.: EE 3340 or equivalent. 3 hrs. lecture; 2 hrs. lab. ABET category: 2 hrs. design; 1 hr. engineering science. Introduction to light and its interaction with various media; theory of laser oscillations and specific laser systems; modulation and detection of optical radiation; fiber optic applications and systems.

4320 Microwave Engineering (4) Prereq.: EE 3230 or equivalent. 3 hrs. lecture; 3 hrs. lab. Waveguides, cavities, signal sources, and other microwave devices.

4330 Antenna Theory and Design (4) Prereq.: EE 3230 or equivalent. 3 hrs. lecture; 3 hrs. lab. Antennas and antenna arrays; measurement of impedances and far-zone radiation patterns.

4340 Fiber Optic and Microwave Propagation (3) Prereq.: EE 3610 and 3320 or equivalent. Wave propagation at microwave and optical frequencies in metallic waveguides and optical fibers.

4422 Electric Machine Design (3) Prereq.: EE 3410 or equivalent. 2 hrs. lecture; 2 hrs. lab. ABET category: 2 hrs. design; 1 hr. engineering science. Design and performance analysis of electric machines in steady-state and dynamic conditions using a simulation on PC and lab experiments.

4430 Power System Analysis (3) Prereq.: EE 3410 or equivalent. Power system analysis using computer methods; power flow, economic power dispatch, and faults.

4450 Distribution System Design (3) Prereq.: EE 3410 or equivalent. 2 hrs. lecture; 2 hrs. lab. ABET category: 2 hrs. design; 1 hr. engineering science. Design and performance analysis of electric machines in steady-state and dynamic conditions using a simulation on PC and lab experiments.
4470 Harmonic Filter and Compensator Design (3) Prereq.: EE 3102 or equivalent; EE 4240 or 4242. ABET category: 2 hrs. design; 1 hr. engineering science. Design of compensators and harmonic filters for distribution systems with nonsinusoidal voltages and currents.

4480 Nonlinear Power System Analysis (3) Prereq.: EE 3610 or equivalent. Analysis of nonlinear systems: harmonic generation, compensation, and filtering.

4490 Adjustable Speed Drives (3) Prereq.: EE 3140, EE 3330. 2 hrs. lecture, 2 hrs. lab. ABET category: 2 hrs. design, 1 hr. engineering science. Design and test of DC and AC motor variable speed drives combined with an analysis of their static and dynamic properties.

4560 Introduction to Modern Control (3) Prereq.: EE 3530. Static variable methods for analysis and design of control systems: realization, stability, and stabilization; observers, control design.

4580 Topics in Control System Design (3) Prereq.: EE 3310. ABET category: 2 hrs. design, 1 hr. engineering science. Compensation of single loop and multiloop systems; state estimation; stability; application to industrial controllers; design using computer simulation packages.

4585 Discrete Control System Design (3) Prereq.: EE 3330. ABET category: 2 hrs. design, 1 hr. engineering science. Sampling and reconstruction of signals; analysis and design of sampled data systems; discrete time systems and controllers.

4610 Analog Communication and Networking (3) Prereq.: EE 3610 and 3140. Amplifier design, pulse and pulse modulation, noise in analog modulation, applications.

4625 Digital Communication and Networking (3) Prereq.: EE 3610 and 3140 or equivalent. Digital coding of analog information, transmission, decision theory, modulation, design considerations, applications.

4660 Random Processes I (3) Prereq.: EE 3470 or equivalent. Probability spaces; random variables and processes; second order processes; spectral analysis; filtering.

4700 Special Topics in Computer Engineering (3) May be taken for a max. of 6 hrs. of credit when topics vary. Students in curricula other than computer engineering should consult the instructor. ABET category: 3 hrs. engineering science. Selected topics of current interest.

4701 Special Topics in Computer Engineering (3) May be taken for a max. of 6 hrs. of credit when topics vary. Students in curricula other than computer engineering should consult the instructor. ABET category: 1 hr. design, 2 hrs. engineering science. Selected topics of current interest.

4702 Special Topics in Computer Engineering (3) May be taken for a max. of 6 hrs. of credit when topics vary. Students in curricula other than computer engineering should consult the instructor. ABET category: 2 hrs. design, 1 hr. engineering science. Selected topics of current interest.

4710 Communications in Computing (3) Prereq.: EE 2730 and 3140 or equivalent. Theoretical and practical aspects of design in communications networks; communication principles and codes; network topology and architecture; protocol layers; current and advanced applications.

4720 Computer Architecture (3) Prereq.: EE 3750 and 3755 or equivalent. Memory hierarchy; pipelining techniques; design philosophies; parallel computing fundamentals.

4740 Discrete Structures for Computer Engineering (3) Prereq.: EE 2730 or equivalent. Mathematical logic and proof methods; graph theory; complexity of algorithms; algebraic structures; applications in computer engineering.

4745 Neural Computing (3) Prereq.: EE 3750 and MATH 2900. ABET category: 2 hrs. design, 1 hr. engineering science. Neural networks and automata; network architecture; learning modules; applications to signal processing, vision, speech, and robotics; VLSI implementations.

4750 Microprocessor Interfacing Techniques (4) Prereq.: EE 3751. 2 hrs. lecture, 6 hrs. lab. ABET category: 2 hrs. design, 1 hr. engineering science. Interface design techniques and design microprocessors to interfaces to memory and input/output devices.

4760 Design to Compiler Optimization (3) Prereq.: EE 3755 and CSC 3102. ABET category: 2 hrs. design, 1 hr. engineering science. Processor architecture, source program analysis, compiler optimization techniques, compiler design.

4770 Real Time Computing Systems (3) Prereq.: EE 3750. ABET category: 2 hrs. design, 1 hr. engineering science. Real time computing systems; systems components, architectures, I/O structure, interrupts, interfacing, A/D and D/A conversion; EE 4240 and 4242 or consent of instructor.

4780 Introduction to Computer Vision (3) Prereq.: EE 3750 or equivalent. ABET category: 2 hrs. design, 1 hr. engineering science. Design and development of algorithms for image processing applications; image acquisition system and computer systems for processing images; preprocessing techniques; image segmentation; emphasis on design of image processing software.

4785 Introduction to Expert Systems (3) Prereq.: EE 3750 or equivalent. Introduction to expert systems, including rule-based systems; search strategies; representation and logic programming.

4790 Introduction to Computers and Computations I (3) Prereq.: CSC 3102 and EE 3755. Hardware and software complexity analyses; structures of both computers and computations.

7000 Advanced Topics in Electrical Engineering (3) May be taken for a max. of 12 hrs. of credit when topics vary.

7091, 7092 Electrical Engineering Research (3) Prereq.: permission of department and completion of 12 sem. hrs. in the graduate program. Pass-fail grading. Individual study.

7100 Advanced Topics in Signal Processing (3) May be taken for a max. of 12 hrs. of credit when topics vary.

7110 Networking and Analysis and Synthesis (3) Prereq.: consent of instructor. Networking and analysis, network graph theory, state variable representation of networks, computer-aided design and simulation.

7120 Linear Active Network Analysis and Synthesis (3) Prereq.: consent of instructor. Active network analysis and design, multiple networks, pathological elements, inductorless filter theory.


7150 Theory and Application of Digital Signal Processing (3) Prereq.: EE 3140 or equivalent. Digital filter design, spectrum analysis, digital hardware implementations, and applications.

7200 Advanced Topics in Electronics (3) May be taken for a max. of 12 hrs. of credit when topics vary.

7210 Semiconductor Device Modeling (3) Systematic modeling of active and passive device structures; modeling theory to relate device physics to circuit performance; selected circuit applications.

7220 Semiconductor Devices I: Bipolar (3) Prereq.: EE 3322 or equivalent. Semiconductor material properties, equilibrium and nonequilibrium processes, physical principles of p-n junctions, and quasi-neutral material; modeling of diodes and bipolar transistors.

7222 Semiconductor Devices II: Field Effect (3) Prereq.: EE 3140 or equivalent. Digital filter design, semiconductor-structure simulation; modeling of MOS capacitors and IGFTs.

7230 Physics of Electronic Semiconductors (3) Semiconductor physics and necessary assumptions for tractable device analysis; elements of statistical physics, transport phenomena in solids, band theory of solids, and semiconductor junctions.

7232 Small-Geometry and High-Speed Devices (3) Prereq.: EE 3230 or equivalent. Charge carrier transport in small and high-electron mobility semiconductor devices, hot-electron effects, size effects and heterojunction boundaries, heterostructure devices, tunneling devices, ballistic transport devices, and surfaces and interfaces in heterostructures.

7240 Integrated Circuit Engineering (3) Fabrication processes and device design for monolithic integrated circuits; relation to circuit performance; thin- and thick-film circuits.

7242 VLSI Systems (3) Prereq.: consent of instructor. Design and implementation of very large scale integrated systems; structured design methodology using MOS technology.

7244 Advanced Lithography and Metrology (3) Prereq.: EE 7240 or consent of instructor. Physical principles used in state-of-the-art lithography; optical systems, x-rays, e-beams, resistors, measurement and inspection techniques.

7246 Integrated Sensors and Actuators (3) Prereq.: EE 2440 and EE 4242 or consent of instructor. Sensor principles and design considerations; bulk and surface micromachining techniques; including LIGA; microactuators and micromechanical devices; intergration of sensors/actuators and electrical circuitry on the same chip.

7248 Mixed-Signal Integrated Circuit Design (3) Prereq.: EE 4420 and 4242 or consent of instructor. Design and technology of analog and mixed-analog digital integrated circuits for signal processing including applications; mixed-signal integrated circuit testing and measurements.

7250 Semiconductor Power Devices (3) Prereq.: EE 3320 or equivalent. Operation and characteristics of semiconduc-

7260 Semiconductor Materials (3) Theory and application of crystal growth from melt and chemical vapor deposition; growth and purification of elemental and compound semiconductors; structural properties and their effect on electrical and physical parameters; amorphous semiconductors.

7270 Magnetic Materials and Devices (3) Prereq.: EE 3320 or equivalent. Theory of magnetism, domain structures, and magnetic memory; current developments and applications of magnetic devices.

7310 Electromagnetic Theory and Techniques (3) Electromagnetic theory applied to radio propagation, waveguides, and microwave systems.

7350 Boundary Value Problems in Engineering (3) Prereq.: consent of instructor. Separation of variables method for solving certain classical partial differential equations, including properties of special functions and their applications to engineering problems.

7400 Advanced Topics in Power System Dynamics (3) May be taken for a max. of 12 hrs. of credit when topics vary.

7410 Faulted Power System Analysis (3) Development of post-fault state space model of power system components and their application in a variety of power system fault conditions.

7420 Power System Stability (3) Modern approach to power system transient and dynamic stability studies; detailed synchronous machine models; their linearizations, excitation systems, and multimachine system stability analysis.

7430 Power System Reliability (3) Reliability analysis of power systems, including generation, transmission, and distribution.

7440 Power Transmission and Control (3) Prereq.: EE 4460 or equivalent. Analysis of HVDC transmission systems; high power switchers and limitations; converter circuits, modeling control, and stability analysis of dc transmission, operation of converters; protection, harmonics, and filters.

7450 Power System Protection (3) Identification of conditions requiring protection; special problems associated with protection of various system components; protection devices, and their application.

4490 Advanced Electrical Drives (3) Prereq.: EE 4420, 4490, or consent of instructor. Advanced topics in electric drives including vector control of induction motor drives and permanent magnet synchronous motor drives.

7500 Advanced Topics in Controls (3) May be taken for a max. of 12 hrs. of credit when topics vary.

7510 Advanced Linear Systems (3) Prereq.: EE 4450 or equivalent. Modern approaches for the analysis and identifi-

7520 Robust Control Theory (3) Prereq.: EE 4540 and 4580. Internal stability, model uncertainty, robust stability, robust performance, controller parameterizations, design limitations, loop shaping H-infinity control and other optimal robust control design techniques.

7580 System Identification (3) Prereq.: EE 4550, 4650 or equivalent. Convex/convex programming techniques and adaptive modeling; control oriented identification; model uncertainties; model validation; review of research literature on system identification.
ENVIRONMENTAL MANAGEMENT SYSTEMS • EMS

1011 Environment and Technology: Perspective on Environmental Problems (3) See ENVS 1009.
2051 Soil Science (4) See AGRO 2051.
3840 Applied Environmental Management (4) See ENVS 3000 or 3001. Local, state, and federal environmental regulations; enforcement of and compliance with regulations; roles of regulatory agencies.
3045 Soil Conservation (2) See AGRO 3045.
3500 Environmental Regulations and Compliance (3) Prereq.: ENVS 3000 or 2051. Local, state, and federal environmental regulations; enforcement of and compliance with regulations; roles of regulatory agencies.
3090 Environmental Internship (3) Prereq.: permission of department and junior standing. Credit will not be given for this course for students with ENVS 3090. Professional experience related to environmental management; student must submit a proposal explaining internship goals and education component; reports, employer evaluation, paper, and presentation required.
4010 Applied Ecology (2) See ENVS 4010.
4020 Quantitative Risk Assessment (3) Prereq.: six hours of chemistry and six hours of biological sciences, MATH 1411 or equivalent. Assessment of environmental risks; interactions of pollution/toxins with the human body; managing and predicting risks.
4030 Environmental Permit Writing (3) Prereq.: ENVS 3002 or 3100. May not be taken for graduate credit. Permit writing; permitting process; environmental assessment; environmental impact statements; communication of permits.
4040 Environmental Instrumental Analysis (3) See Prereq.: CHEM 1201, 1202, 1202, C.1201. 2 hrs. lecture; 2 hrs. lab. May not be taken for graduate credit. Analysis of pollutants in the environment; development of analytical technique; sampling of different media including soil and water.
4055 Chemical Properties of Soil (4) See AGRO 4055.
4056 Microbial Ecology and Nutrient Cycling in Soils (4) See AGRO 4056 or BIOL 4526.
4077 Environmental Soil Physics (3) See AGRO 4077.
4999 Senior Project in Environmental Management (1-3) F.S. Prereq.: permission of department; senior standing; and a minimum GPA of 3.00 on all course work taken in the major. Course may be repeated for up to 6 hrs. of credit. Course may not be taken for graduate credit. Student will work under the direction of a faculty member to conduct research in a project area of mutual interest to the student and the faculty member. Credit will be given for a maximum of 6 hours of credit.
7057 Advanced Soil Physics (4) See AGRO 7057.

ENVIRONMENTAL STUDIES • ENVS

1000 Environment and Technology: Perspective on Environmental Problems (3) Also offered as ENVS 1011. Environmental quality problems involving water, air, land, and society's response to such problems; analysis of the interrelationships and natural environmental stresses.
1011 Soils and the Environment (3) See AGRO 1011. Design of systems for in-situ remediation of hazardous and industrial wastes for containment and recovery integrated into design of treatment trains for control of sources and attainment of cleanup goals; emerging technologies, soil washing, bioremediation, and new recovery technologies to minimize cost and risk.
4159 Design of Site Remediation Processes (3) Prereq.: ENVS 3110 and CHE 3102. Design of systems for in-situ remediation of hazardous and industrial wastes for containment and recovery integrated into design of treatment trains for control of sources and attainment of cleanup goals; emerging technologies, soil washing, bioremediation, and new recovery technologies to minimize cost and risk.
4151 Design of In-Situ Site Remediation Processes (3) Prereq.: ENVS 3110 and CHE 3102. Design of systems for in-situ remediation of hazardous and industrial wastes for containment and recovery integrated into design of treatment trains for control of sources and attainment of cleanup goals; emerging technologies, soil washing, bioremediation, and new recovery technologies to minimize cost and risk.
4149 Design of Environmental Management Systems (3) Prereq.: ENVS 3100 and 3110. Civil engineering students will be introduced to basic principles of protection of the environment; evaluation of environmental permits; and preparation of technical documents. Students should be familiar with the various phases of an environmental study and report including the public hearing, the Environmental Impact Statement, the hearing decision, and the case history.
4140 Design of Wastewater Management Facilities (3) Prereq.: ENVS 3100 and 3110. Applications of planning, management, and decision making to environmental policy, systems, and management; evaluation of environmental decision making; environmental ethics; analysis of environmental issues at the local, state, and national levels.
4012 Environmental Chemistry (3) See CHEM 4012. Introduction to the methods of environmental chemistry; the application of environmental chemistry to environmental problems; an introduction to the toxicological aspects of water pollution.
4022 Concepts in Coastal Ecosystems (3) Prereq.: ENVS 1126 or 2051. Coastal ecosystems and their interaction with the environment; the role of the coastal ecosystem in the environment; the role of the coastal ecosystem in the environment.
4112 Concepts in Coastal Ecosystems (3) Prereq.: CHEM 1201, 1202, 1202. Coastal ecosystems and their interaction with the environment; the role of the coastal ecosystem in the environment; the role of the coastal ecosystem in the environment.
4114 Radiocology (3) See NS 4141. Environmental Engineering

421 Energy and the Environment (3) Methods of stationary power generation; aspects and controls related to fossil fuel production, transportation, and use; energy use and pollution problems related to transportation; energy resources, regulatory aspects and management; systems of energy technology related to stationary and moving sources of air pollution.
422 Environmental Hazards Analysis (3) Systematic framework for examining the nature and consequences of natural and man-made hazards; methodologies that may be taken to plan, respond, recover, prevent, or mitigate hazards.
424 Environmental Protection and Regulation (3) Prereq.: ENVS 1126 or 2051. Federal, state, and local regulation for the mitigation of the occurrence and effects of hazardous events, including the National Flood Insurance Act, Emergency Planning and Community Right to Know Act, and government planning and zoning authority.
426 Ocean Policy (3) National and state ocean policy; Law of the Sea; treaties; the high seas; marine pollution, marine resources, and marine scientific research; other related topics.
4477 Environmental Policy Analysis (3) Prereq.: 6 hrs. of chemistry, 6 hrs. of life sciences, and permission of instructor. Introduction to the basic principles of environmental policy; applications of these principles in principal and other job-related areas: environments; regulatory perspectives; spills; anthropogenic pollution problems; human risk management overview of classic environmental problems; routes of exposure, target tissues (human, mammalian), and toxicological testing.
4500 Advanced Environmental Management (3) Prereq.: permission of department; senior standing. Additional credit will be awarded for a maximum of 8 sem. hrs. of credit when topics vary. Topics in environmental science with an emphasis on inquiry-based scientific learning and on issues of importance to Louisiana: hands-on activities and field trips will be major components of the class.
6010 Mathematical Modeling in Energy and Environmental Management (3) Prereq.: OCS 4410 or equivalent. Advanced studies in the development of mathematical models of energy and environmental systems.
7040 Environmental Planning and Management (3) Prereq.: ENVS 4149. Environmental systems planning and management at local, state, and federal levels using problem solving techniques of alternative solutions, evaluation of alternative political action decision processes, and implementation of plans and strategies.
7041 Environmental Policy Analysis (3) Prereq.: ENVS 7040. A practical approach to the development of regulatory policies for environmental planning and management.
6010 Topics in Environmental Science for Teachers (2-4) May be taken for a max. of 8 sem. hrs. credit when topics vary. Topics in environmental science with an emphasis on inquiry-based scientific learning and on issues of importance to Louisiana: hands-on activities and field trips will be major components of the class.
7010 Mathematical Modeling in Energy and Environmental Management (3) Prereq.: OCS 4410 or equivalent. Advanced studies in the development of mathematical models of energy and environmental systems.
7040 Environmental Planning and Management (3) Prereq.: ENVS 4149. Environmental systems planning and management at local, state, and federal levels using problem solving techniques of alternative solutions, evaluation of alternative political action decision processes, and implementation of plans and strategies.
7041 Environmental Policy Analysis (3) Prereq.: ENVS 7040. A practical approach to the development of regulatory policies for environmental planning and management.
7010 Topics in Environmental Science for Teachers (2-4) May be taken for a max. of 8 sem. hrs. credit when topics vary. Topics in environmental science with an emphasis on inquiry-based scientific learning and on issues of importance to Louisiana: hands-on activities and field trips will be major components of the class.
7010 Mathematical Modeling in Energy and Environmental Management (3) Prereq.: OCS 4410 or equivalent. Advanced studies in the development of mathematical models of energy and environmental systems.
7040 Environmental Planning and Management (3) Prereq.: ENVS 4149. Environmental systems planning and management at local, state, and federal levels using problem solving techniques of alternative solutions, evaluation of alternative political action decision processes, and implementation of plans and strategies.
7041 Environmental Policy Analysis (3) Prereq.: ENVS 7040. A practical approach to the development of regulatory policies for environmental planning and management.
7010 Topics in Environmental Science for Teachers (2-4) May be taken for a max. of 8 sem. hrs. credit when topics vary. Topics in environmental science with an emphasis on inquiry-based scientific learning and on issues of importance to Louisiana: hands-on activities and field trips will be major components of the class.
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7041 Environmental Policy Analysis (3) Prereq.: ENVS 7040. A practical approach to the development of regulatory policies for environmental planning and management.
7010 Topics in Environmental Science for Teachers (2-4) May be taken for a max. of 8 sem. hrs. credit when topics vary. Topics in environmental science with an emphasis on inquiry-based scientific learning and on issues of importance to Louisiana: hands-on activities and field trips will be major components of the class.
7010 Mathematical Modeling in Energy and Environmental Management (3) Prereq.: OCS 4410 or equivalent. Advanced studies in the development of mathematical models of energy and environmental systems.
7040 Environmental Planning and Management (3) Prereq.: ENVS 4149. Environmental systems planning and management at local, state, and federal levels using problem solving techniques of alternative solutions, evaluation of alternative political action decision processes, and implementation of plans and strategies.
7041 Environmental Policy Analysis (3) Prereq.: ENVS 7040. A practical approach to the development of regulatory policies for environmental planning and management.
7045 Land Use Law and Regulation (3) Federal, state, and local environmental decision-making, and policies regarding land use, land use planning, and environmental regulation of land use, including: zoning; subdivision regulation and development controls (PUD); comprehensive land use plans; limits on growth and urban sprawl; and regulatory "takings."

7046 International Environmental Law (3) International environmental law and international practices for controlling pollution and depletion of natural resources; relationship between international trade agreements and environmental quality; other international environmental issues.

7047 Environmental Economics and Policy (3) Prereq.: ECON 4270 or equivalent or consent of instructor. Economic concepts applied to the development of appropriate policies to achieve environmental protection goals; emphasis given to linkages between economics and the environment, the role of market failure, and economic instruments that can be used to address environmental concerns.

7050 Spatial Modeling of Environmental Data (3) Prereq.: 7045 or concurrent enrollment in 7045. Development of an approach to analyze spatial and temporal processes for environmental data modeling.

7061 Water Quality Management and Policy (3) Also offered as ENV 7061. Physical, chemical, and biological characteristics of surface water in natural systems; sources and effects of water pollutants; water quality standards and criteria; treatment of drinking water; sinks, sources, loads; federal water quality regulations; watershed approach and application of mathematical models to water quality management.

7100 IRRT. Taxonomy of Aquatic Ecosystems (3) Prereq.: BIOL 4093, 4094; CHEM 2262. Marine pollution and toxicology of industrial and non-point sources materials related to ecological risk assessment in coastal and marine areas; biological, chemical, and biological factors affecting the fate of toxicants in marine and freshwater coastal areas.

7112 Concepts in Marine Ecology (3) Prereq.: ENVS 7100 and 7110 or permission of instructor. Also offered as OCS 7112. Marine pollution and toxicology of industrial and non-source point sources materials related to ecological risk assessment in coastal and marine areas; biological, chemical, and biological factors affecting the fate of toxicants in marine and freshwater coastal areas.

7115 Water Quality and Environmental Protection (3) Prereq.: BIOL 4093, 4094; CHEM 2262. Marine pollution and toxicology of industrial and non-point source materials related to ecological risk assessment in coastal and marine areas; biological, chemical, and biological factors affecting the fate of toxicants in marine and freshwater coastal areas.

7151 Watershed Hydrology and Floodplain Analysis (3) See NR 7151. Cross listed with MRCE 7151.

7200 Comparative Metabolism of Environmental Pollutants (3) Prereq.: BIOL 4094 or consent of instructor. Biochemical systems from various invertebrate, vertebrate, and plant species involved in metabolic activation and detoxification of xenobiotic substances; use of these systems as biomarkers of pollution impact.

7220 Biochemistry and Toxicology of Metals (3) Prereq.: BIOL 4093, 4094; CHEM 2262. Also offered as BIOL 7220. Integration of metals and metal complexes with biochemical processes; adaptations of the coordination sphere of metal complexes to life function; metalloenzymes and metalloproteins; properties and modes of toxic response of metals and metalloids to ecological risk assessment in marine habitats.

7235 Water Quality Modeling for Management (3) Prereq.: ENVS 7061 or permission of instructor. Problems and approaches in water quality modeling, with particular attention to model uncertainty, model choice, and applications for management; basic modeling concepts, mechanistic models, empirical models, modern statistical methods and uncertainty analysis applied to problems of eutrophication, toxic substances, and trend assessment.

7353 Statistical Techniques for Risk Analysis (3) Fundamental principles and techniques involved in decision making and environmental risk analysis, including hypothesis testing, statistical decisions that optimize outcomes; rationality (utility) and interactive (game theory) decision theory, and application of decision theory to natural resources and environmental policy-making.

Experimental Statistics

General education courses are marked with stars (*).

2000 Introduction to Microcomputers (3) F.S.Su. 2 hrs. lecture; 2 hrs. lab. Credit will not be given for this course and CS 1010. Credit will be given for only one of the following: EXST 2003, 7004, 7005, 7009. Basic concepts of statistical models and use of samples; measures of variation and central tendency; interpretation of hypothesis, analysis of variance, regression, and correlation; emphasis on laboratory-oriented sciences research problems; computer software applications.

2001 Introduction to Statistical Analysis (4) F.S.Su. 3 hrs. lecture; 2 hrs. lab. Credit will be given for only one of the following: EXST 2003, 7004, 7005, 7009. Basic concepts of statistical models and use of samples; measures of variation and central tendency; interpretation of hypothesis, analysis of variance, regression, and correlation; emphasis on laboratory-oriented sciences research problems; computer software applications.

2003 Statistical Inference I (4) F.S. 3 hrs. lecture; 2 hrs. lab. Prereq.: MATH 1021 or equivalent. Credit will be given for only one of the following: EXST 7003, 7004, 7005, 7009. Basic concepts of statistical models and sampling and inferential methods; normal, t, chi-square, and F distributions; tests of hypothesis and estimation, analysis of variance, correlation, regression, analysis of categorical data; emphasis on social and behavioral sciences research problems; computer software applications.

2004 Statistical Inference II (4) F.S. 3 hrs. lecture; 2 hrs. lab. Prereq.: MATH 1021 or equivalent. Credit will be given for only one of the following: EXST 7003, 7004, 7005, 7009. Basic concepts of statistical models and use of samples; measures of variation and central tendency; interpretation of hypothesis, analysis of variance, regression, and correlation; emphasis on laboratory-oriented sciences research problems; computer software applications.

2005 Statistical Techniques I (4) F.S. 3 hrs. lecture; 2 hrs. lab. Prereq.: MATH 1021 or equivalent. Credit will be given for only one of the following: EXST 7003, 7004, 7005, 7009. Basic concepts of statistical models and sampling and inferential methods; descriptive statistical techniques, distributions, tests of significance, analysis of variance, regression, correlation, and chi-square; emphasis on field-oriented life sciences research problems; computer software applications.

2009 Statistical Methods I—Web-Based (3) Prereq.: MATH 1021 or equivalent and knowledge of SAS statistical analysis software. Credit will be given for only one of the following: EXST 7003, 7004, 7005, 7009. Basic concepts of statistical models and use of samples; measures of variation and central tendency; interpretation of hypothesis, analysis of variance, regression, and correlation; emphasis on field-oriented life sciences research problems; computer software applications.

7001 Nonparametric Statistical Inference (3) Prereq.: EXST 7003 or 7004 or 7005 or equivalent. Nonparametric one- and two-sample location and distribution tests, including binomial, chi-square, Kolmogorov-Smirnov, Mann-Whitney U, Wilcoxon; analyses of variance, including Cochran's C, Kruskal-Wallis, Friedman; correlation and regression, including Kendall's tau, Spearman's rho, and point biserial.

7012 Fundamental Sampling Techniques (3) Prereq.: EXST 7003 or 7004 or 7005 or equivalent. Simple and stratified random sampling; ratio and regression estimation; multiple regression; multistage sampling procedures; systematic sampling; nonresponse and nonsampling errors; links between methodology and application emphasized. Credit will be given for only one of the following: EXST 7013, 7014, 7015, 7019. Analyses of variance and experimental designs; completely randomized and complete block designs; latin square designs; split plot; arrangements of treatments; multiple comparisons; regression estimation; simple and multiple regression and correlation techniques; emphasis on social and behavioral sciences research problems.

7014 Experimental Statistical Inference (2) Prereq.: EXST 7004 or equivalent. 3 hrs. lecture; 2 hrs. lab. Credit will be given for only one of the following: EXST 7013, 7014, 7015, 7019. Multiple classification analysis of variance and covariance, individual degrees of freedom, factorial arrangement of treatments, and multiple regression; emphasis on science and social science applications.

7015 Statistical Techniques II (4) Prereq.: EXST 7005 or equivalent. 3 hrs. lecture; 2 hrs. lab. Credit will be given for only one of the following: EXST 7013, 7014, 7015, 7019. Multiple classification analyses of variance and covariance, sampling designs, parameter estimation, multiple regression and correlation techniques; emphasis on hypothesis and factorial experiments; emphasis on field-oriented life sciences research problems.
3826 Investments (3) Prereq.: FIN 3715. Open only to finance majors; open to others with permission of the department. Characteristics and valuation of common stocks, bonds, options, function and efficiency of U.S. securities markets; theory and practice of portfolio selection.

3840 Fixed Income Securities (3) Prereq.: FIN 3826. Mechanics of fixed-income markets and securities; valuation techniques; economic analysis of government, corporate, and mortgage securities; duration and immunization strategies; interest rate risk, term structure, product fundamentals, and bond portfolio strategies.

3845 Student Managed Investment Fund (3) Prereq.: FIN 35 and equivalent standing and consent of department. Course may be repeated for a max. of 9 sem. hrs. of credit. Analysis of equity investment opportunities in conjunction with the management of the Student Managed Investment Fund; emphasis on valuation techniques and fundamental analysis; operation of investment reporting system.

3900 Directed Study and Research (1-6) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Research under direction of faculty member; written proposal must be approved by faculty member and department chair prior to registration.

3910 Topics in Finance (1-3) Prereq.: FIN 3715 and 3826, or consent of instructor. Topics in finance selected by the instructor, including issues in real estate, security analysis, corporate finance, and financial markets. 6 sem. hrs. of credit when topics vary. Topics of current interest.

3930 Undergraduate Internship in Finance (3) Prereq.: FIN 3, junior standing, and consent of department. Pass/fail grading based on a written evaluation by the professional supervisor, a report by the student, and a faculty member's evaluation. At least 20 hours per week in regular semester or 35 hours per week in summer session of learning experience in finance under general supervision of a faculty member and the direct supervision of a professional in finance. May not be repeated for credit. On-the-job experience in an area of finance law position.

4240 Cyberlaw and Intellectual Property (3) Prereq.: BLAW 1201 or BADM 7140, and consent of instructor. Fundamentals of patent, trademark and copyright law; legal issues of computer networks and electronic commerce, including intellectual property, torts, contracts, constitutional principles, and crimes.

4440 Group Insurance and Pensions (3) Prereq.: FIN 3440. Life and health insurance in various areas involving mortality and morbidity contingencies; types of health risk bearers and contracts offered; employee benefit plans with emphasis on the private pension function, including contractual arrangements, benefit formulas, and approaches to financing.

4620 Security Analysis and Portfolio Management (3) Prereq.: FIN 3826 or equivalent. Security selection and portfolio diversification in an efficient market; portfolio theory and management; portfolio building and selection. Portfolio performance evaluations.

4830 Analysis of Corporate Financial Statements (3) Prereq.: FIN 3715 or equivalent. Evaluation of financial statements with emphasis on use in credit analysis and evaluation of security risks and returns; recent research in accounting and finance; predictive ability of financial statement data.

4850 Financial Derivatives (3) Prereq.: FIN 3536, 3717, or 3826. Options, forwards, futures, swaps, and other derivative instruments; principles of pricing, valuation models, trading strategies, and managing risk in domestic and global financial markets.

7300 Seminar in Real Estate (3) Questions facing parties in the real estate market, including equity investors, lenders, tenants, and government; purchasing, owning, and operating real estate relative to its real estate; deeds, title, leases, brokerage, and management.

7310 Real Estate Financial Decisions (3) Questions concerning real estate finance and valuation; risk-return trade-offs under varying conditions of financial leverage; refinancing; selecting between alternative financing methods; mortgage design, sale-leaseback, construction lending, secondary mortgage markets, and the pricing of financing instruments.

7320 Advanced Topics in Real Estate (3) Prereq.: FIN 7300 or 7310 or consent of instructor. May be taken for a max. of 9 hrs. of credit topics vary.

7400 Financial Risk Management (3) Prereq.: BADM 7040 or equivalent. Theory of portfolio construction; analysis of individual and collective security risks; estimation of expected return, beta, and covariance; risk-return characteristics of various financial assets; valuation of financial instruments; and risk management problems; the value of risk management, measuring exposures, financial contracts for managing risk, the enterprise risk committee, and the accounting and regulatory framework; market and credit risks are the primary focus, but some attention is also given to operational and other sources of risk.

7520 Seminar in Financial Research Methods (3) Primarily for doctoral students. Financial economics; empirical behavior of financial markets; topics including trading rules and the market microstructure hypothesis; market microstructure; event studies.

7550 Theory of Finance (3) Prereq.: ECON 7610 or equivalent. Theory of choice under uncertainty and one-state contingent-preference models of risk allocation; mean-variance asset pricing models; arbitrage pricing models; option pricing models; discrete and continuous time models.

7585 Advanced Topics in Financial Economics (3) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. Also offered as ECON 7585. Specific areas in financial economics including rigorous empirical methodologies and theory.

7632 Seminar in Commercial Banking (3) Commercial banking theory and practice. Topics include loan pricing and risk assessment, bank asset and liability management, bank structure, markets and competition, capital adequacy and profitability.

7633 Financial Markets (3) Prereq.: BADM 7020 and 7800. Theoretical and empirical description of financial markets and institutions; their role in the economy; determinants of market structure, and the transaction structure of security returns; emphasis on U.S. financial markets.

7650 Seminar in Financial Markets and Intermediaries (3) Prereq.: FIN 7550. Primarily for doctoral students. Financial markets and intermediaries as alternative institutional mechanisms for structuring financial transactions; transaction services provided by these institutions; benefits and costs of these transaction services as determinants of the structure and extent of the financial sector.

7710 Public Financial Management (3) Cross-listed as PADM 7710.

7718 Multinational Financial Management (3) Prereq.: BADM 7009 or equivalent. Cross-border investment, investment analysis, capital planning, foreign currency exposure, and cash management; concepts of political risk assessment; techniques in transactional trade; alternative financial sources; issues in international financial controls.

7719 Advanced Financial Management (3) Prereq.: BADM 7099. Theory of business finance and evaluation of its usefulness to financial managers; capital expenditure, capital structure, and dividend policies; legitimacy of alternative decision criteria; implications of uncertainty and imperfect capital markets on firm financial decisions.

7720 Topics in Finance (3) Prereq.: BADM 7099 or equivalent. Detailed treatment of topics not covered in depth in BADM 7099 or FIN 7719; prospectus usually available before registration.

7740 Venture Capital and Investment Banking (3) Prereq.: BADM 7090 or equivalent. The role of venture capitalists and investment banks in financing, advising, and influencing companies through the initial public offering; the structure of venture capital funds; stages of investments; compensation; valuation; interactions between venture capitalists and entrepreneurs; the legal environment, and social and ethical norms.

7750 Seminar in Corporate Finance (3) Prereq.: FIN 7550. Primarily for doctoral students. Theory of choice under certainty and uncertainty; investment and financing decisions of the firm; the agency problem and agency costs; capital structure and dividend models related to corporate capital structure.


7845 Student Managed Investment Fund (3) Prereq.: BADM 7099 or equivalent and permission of instructor. Course may be repeated for a max. of 9 sem. hrs. of credit.

Management and operation of the Student Managed Investment Fund; calculation of performance in an institutional equity portfolio; establishment of investment objectives, including asset allocation and selection, and assessment and management of risk; selection, accounting, and reporting of results.

7850 Seminar in Investments (3) Prereq.: FIN 7550. Primarily for doctoral students. Speculative price as a function of time and information; normative valuation models of investment theory; applications of contingent-claims/derivative securities pricing theory; theory and empiricism of fixed income securities.

7855 Seminar in Options, Futures, and Other Derivatives (3) Prereq.: FIN 7826 and ECON 7610 or equivalent. Consent of instructor: mathematical maturity required. Arbitrage and equilibrium models of derivative pricing; models derived via continuous time Itô processes; binomial finite difference numerical approaches; review of mathematical statistics, stochastic processes, and Itô calculus.

7900 Individual Study in Finance (1-3) Masters and doctoral students may take the course for credit 3 and 6 times, respectively. For students who wish in-depth study of a selected field problem. Proposal outlining nature and level of study must be approved by department faculty prior to registration; written report of semester's activities and findings required for credit.

7930 Graduate Internship (3) Prereq.: consent of department. Pass/fail grading based on a written evaluation by the professional supervisor; a written report by the student, and a faculty member's evaluation. At least 20 hrs. per week in regular semester or 35 hrs. per week in summer session of learning experience in finance under general supervision of a faculty member and the direct supervision of a professional in finance. On-the-job experience in an approved finance position.

7950 Seminar in Research (1) Required of all doctoral students in business administration concentrating in finance during each semester of full-time residence; only 3 sem. hrs. may be applied toward the degree. Advanced research in finance; current research of doctoral candidates, faculty, and invited guests.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

8100 Pre-dissertation Research (1-9) May be repeated for credit. Pass/fail grading.

9000 Dissertation Research (1-12 per sem.) "S"/"U" grading.

FOOD SCIENCE • FDSC

1049 Science of Foods (2) Concepts and principles related to selection, preparation, processing, preservation, distribution, and use of food.

2000 Fundamentals of Food Science (3) S Prereq.: BIOL 1201 and CHEM 1201 or permission of instructor. Introduction to scientific principles in chemistry of food composition, new product development, food preservation, processing, packaging, and safety.

3000 Food Safety (3) F Prereq.: BIOL 1201 and CHEM 1201 or permission of instructor. Basic concepts of food safety including: introduction into food safety; extensive examination of causative agents responsible for food borne illness; and food borne illness case studies.

3900 Food Science Research (1-3) Prereq.: permission of department. May be taken for a max. of 6 sem. hrs. of credit. Student outlines and executes project and prepares a written report of a research project to be submitted for evaluation, and undergoes additional examination on selected topics in food science and technology.

4045 Food Engineering Systems (3) S-D Prereq.: PHTS 2001 and MATH 1441 or equivalent. 2 hrs. lecture; 3 hrs. lab. Application of engineering principles to various unit operations in food processing.

4048 Quality Assurance in the Food Industry (4) S-E See DART 4040.

4050 Food Composition and Analysis (4) S Prereq.: FDSC 4060 and CHEM 2060 or 2261, or equivalent. 3 hrs. lecture; 3 hrs. lab. Principles of official and acceptable chemical and physical methods used in food analysis; application of these methods to examination of raw and processed foods.
4090 French and Francophone Women Writers (3) Prereq.: 3000-level French course or equivalent. Women’s writing in France and in Francophone countries from the Middle Ages to the present.

4095 Studies in Gender and French Literature (3) Prereq.: 3000-level French course or equivalent. May be taken for max. of 6 hrs. of credit when topics vary.

4100 Special Topical Course: Language (3) Preprg.: An analytical approach to the structures of English and French; strategies and techniques for the translation in literary, technical, and scientific contexts.

4060 French Literature of the 20th Century (3) V Major aspects of the literature.

4051 French for Business (3) V Language acquisition for students preparing for careers involving trade or business activities with French-speaking areas.

4060 French Literature of the Quebec (3) V Major aspects of the literature of Quebec.

4064 Pidgin and Creole Languages (3) V See ANTH 4064 andLING 4064.

4065 Louisiana French (3) V Dialect areas of Louisiana, including Cajun and Creole speech communities; language contact, language variation, and problems of analysis.

4070 Literature of Africa and the Caribbean (3) Major aspects of African and Caribbean literature.

4080 Special Topics in French/Francophone Cultures and Civilizations (3) V Taught in French. May be taken for max. of 6 hrs. of credit, when topics vary.

4081 French Literature in Translation (3) F Credit not applicable toward a major in French; knowledge of French required. May be taken for a max. of 6 hrs. of credit when subject matter varies. Selected periods, topics, or movements.

4090 French and Francophone Women Writers (3) Prereq.: 3000-level French course or equivalent. Women’s writing in France and in Francophone countries from the Middle Ages to the present.

4095 Studies in Gender and French Literature (3) Prereq.: 3000-level French course or equivalent. May be taken for max. of 6 hrs. of credit when topics vary. Examination of selected periods, themes, and genres.

4100 Special Topics in French Language and Literature (3) V May be taken for a max. of 6 hrs. of credit when topics vary.

4410 Instructional Strategies for the Second Language French Classroom (1) Prereq.: ED 3002, FREN 3402, and concurrent enrollment in EDCT 4003. 3 hrs. lab.field experiences in multicultural settings. Teacher candidates will study and participate in activities that incorporate different classroom instructional structures, including teacher-to-whole class, task-based group activities, and student-to-student (pair) work; candidates will design and conduct French language lessons using language-centered activities.

4404 Critical Issues in Teaching French as a Second Language: Capstone Course (3) Prereq.: EDCT 4003, FREN 4403, and concurrent enrollment in EDCT 4104. Teacher candidates should be in their last two semesters of certification requirements for a major in French. Taught in French. Focus on the consolidation of knowledge about the French language, literature, and culture, with a respect to the teaching of subject content to middle or high school learners.

4410 Studies in Contemporary French Thought (3) V May be taken for a maximum of 6 hrs. of credit with consent of department, if content varies. Selected movements and thinkers of French thought after 1960.

4415 Independent Work (1-3) F.S.Su May be taken for a max. of 3 hrs. of credit. Readings in French literature directed by a senior faculty member.

7005 François Villon and His Age (2) V François Villon and other important figures of the Middle French period, notably Guillaume de Machault, Eustache Deschamps, Christine de Pizan, Christine de Pizan, and Charles d’Orleans.

7006 Studies in Medieval French Literature (3) V May be taken for a max. of 6 hrs. of credit with consent of department, if content varies. Topics focus on an author, movement, or literary mode.

7012 Studies in 16th Century French Literature (3) V May be taken for a max. of 6 hrs. of credit with consent of department, if content varies. Topics focus on an author, movement, or literary mode.

7017 Seminar in French Literature (3) V May be taken for a max. of 6 hrs. of credit with consent of department, if content varies. Topics focus on an author, movement, or literary mode.

7021 Les Philosophes (3) V Aesthetic and language theory as developed in the Encyclopédie and in other major texts of the period. 7032 Studies in 18th Century French Literature (3) V May be taken for a max. of 6 hrs. of credit with consent of department, if content varies. Topics focus on an author, movement, or literary mode.

7041 French Romanicism (3) V Historical, epistemological, and semiotic aspects of French Romanicism.

7042 Studies in 19th Century French Literature (3) V May be taken for a max. of 6 hrs. of credit with consent of department, if content varies. Topics focus on an author, movement, or literary mode.

7051 The 20th Century Novel (3) V The works of such major novelists of the modern period as Gide, Proust, Malraux, Camus, Beckett, and Robbe-Grillet.

7052 Studies in 20th Century French Literature (3) V May be taken for a max. of 6 hrs. of credit with consent of department, if content varies. Topics focus on an author, movement, or literary mode.

7100 Studies in Sub Saharan Francophone Literature and Culture (3) May be taken for a max. of 6 sem. hrs. of credit with consent of department, if content varies. The major movements and authors of francophone literature in the cultural context of Sub Saharan Africa.

7102 Studies in North African Francophone Literature and Culture (3) May be taken for a max. of 6 sem. hrs. of credit with consent of department, if content varies. The major movements and authors of francophone literature in the cultural context of North Africa.

7120 Studies in Francophone Asian Literature and Culture (3) May be taken for a max. of 6 sem. hrs. of credit with consent of department, if content varies. The major movements and authors of francophone literature in the context of Francophone Asia.

7140 Studies in Francophone Literature and Culture (3) May be taken for a max. of 6 sem. hrs. of credit with consent of department, if content varies. The major movements and authors of francophone literature in the cultural context of the Caribbean.

7150 Studies in Literature and Culture of Francophone North America and Quebec (3) May be taken for a max. of 6 sem. hrs. of credit with consent of department, if subject matter varies. The major trends, as well as writers of Francophone North America and Quebec. Credit will not be given for both this course and GEOG 2061. May be taken for elective geology credit. Physical principles, processes, and operations in the atmosphere, world climatic realms.

2051 Physical Geography: The Atmosphere (3) Credit will not be given for both this course and GEOG 2061. May be taken for elective geology credit. Physical principles, processes, and operations in the atmosphere.

2055 Map Reading (3) 2 hrs. lecture; 2 hrs. lab. Nature and interpretation of topographic maps.

MAPPING SCIENCES

4030 Cartographic Drafting and Graphic Presentation (3) 2 hrs. lecture; 2 hrs. lab. Basic drafting instruments and techniques necessary for preparation of maps and scientific graphics.

4040 Advanced Cartography (3) Prereq.: GEOG 2039 or equivalent. Cartographic history; map projection; advanced techniques of data presentation and cartographic production.

4044 Computer Cartography (3) Vx programming knowledge necessary. Introduction to selected mapping packages.

4049 Advanced Computer Cartography (3) Prereq.: CSC 1230 or 1253 and GEOG 4044. Use of computer mapping programs; theory and methods of display of point, line, and area elements in thematic maps; algorithms involved in encoding, editing, storing, retrieving, and displaying data from a digital cartographic data base.

Remote Sensing

4019 Aerial Photo Interpretation of Cultural Features (3) 2 hrs. lecture; 2 hrs. lab. Will not be given for both this course and GEOG 4020. Analysis of land use/land cover, urban, industrial, and military aspects from aerial photographs.

4020 Aerial Photo Interpretation (3) Prereq.: GEOG 1001 and 1003 or GEOG 2011. Credit will not be given for both this course and GEOG 4020. Lecture and 2 hrs. lab. Analysis and mapping of geologic structure, lithology, and landforms from aerial photographs.

REMOTE SENSING: ENVIRONMENTAL REMOTE SENSING (3) Prereq.: consent of instructor. May be taken for elective geology credit. 2 hrs. lecture; 2 hrs. lab. Basic energy and matter rectives; principles and laws of remote sensing; topics for remote sensing studied by remote sensing techniques.

GEOPHYSICS

GEOPHYSICS: GEOP

General education courses are marked with stars (•).

CORE CURRICULUM

(Required of majors.)

• 1001 Human Geography: Americas and Europe (3) 1001 and 1003 need not be taken in numerical order. Credit will not be given for both this course and GEOG 2062. Principal themes of human geography, including the spatial distributions and interactions of culture, history, economy, population, and environment, with a regional emphasis on the Americas and Europe.

• 1003 Human Geography: Africa and Asia (3) 1001 and 1003 need not be taken in numerical order. Credit will not be given for both this course and GEOG 2062. Principal themes of human geography, including the spatial distributions and interactions of culture, history, economy, population, and environment, with a regional emphasis on Africa and Asia.

• 2050 Physical Geography: The Atmosphere (3) Credit will not be given for both this course and GEOG 2061. May be taken for elective geology credit. Physical principles, processes, and operations in the atmosphere, world climatic realms.

• 2051 Physical Geography: Land and Water (3) 2 hrs. lecture; 2 hrs. lab. Nature and interpretation of topographic maps.

MAPPING SCIENCES

(All majors select three courses.)

Cartography

2030 Cartographic Drafting and Graphic Presentation (3) 2 hrs. lecture; 2 hrs. lab. Basic drafting instruments and techniques necessary for preparation of maps and scientific graphics.

4040 Advanced Cartography (3) Prereq.: GEOG 2039 or equivalent. Cartographic history; map projection; advanced techniques of data presentation and cartographic production.

4044 Computer Cartography (3) Vx programming knowledge necessary. Introduction to selected mapping packages.

4049 Advanced Computer Cartography (3) Prereq.: CSC 1230 or 1253 and GEOG 4044. Use of computer mapping programs; theory and methods of display of point, line, and area elements in thematic maps; algorithms involved in encoding, editing, storing, retrieving, and displaying data from a digital cartographic data base.

Remote Sensing

4019 Aerial Photo Interpretation of Cultural Features (3) 2 hrs. lecture; 2 hrs. lab. Will not be given for both this course and GEOG 4020. Analysis of land use/land cover, urban, industrial, and military aspects from aerial photographs.

4020 Aerial Photo Interpretation (3) Prereq.: GEOG 1001 and 1003 or GEOG 2011. Credit will not be given for both this course and GEOG 4020. Lecture and 2 hrs. lab. Analysis and mapping of geologic structure, lithology, and landforms from aerial photographs.

REMOTE SENSING: ENVIRONMENTAL REMOTE SENSING (3) Prereq.: consent of instructor. May be taken for elective geology credit. 2 hrs. lecture; 2 hrs. lab. Basic energy and matter rectives; principles and laws of remote sensing; topics for remote sensing studied by remote sensing techniques.
Central Asia and Afghanistan; emphasis on geographic
Also offered as INTL 4033.

4033 Geography of Central Asia and Afghanistan (3)

4031 Latin America and the Caribbean (3)

4053 Geography of Central Asia and Afghanistan (3)

Also offered as INTL 4033.

HUMAN GEOGRAPHY
(BA candidates select two systematic and one regional course.)

Systematic

2010 Human Geography (3) Survey of patterns and processes of human societies and their environments.

2000 Humans and the Environment (3) Exploration of geographic concepts that underlie nature-society relationships and human dimensions of environmental change.

4012 Elements of Cultural Geography (3) Culturally oriented presentism in American geographical thought during the present century.

4040 Political Geography (3) Systematic, cultural-political geography; emphasis on technical and philosophical aspects and on American political landscapes; territorial political entities (cadastral, civil, national, international) role of the lands and seas, nature and objects of war; impacts of political entities on the landscape.

4072 Urban Historical Geography (3) Spatial evolution of cities and city-systems in western civilization through the classical, medieval, mercantile, and industrial periods to 1945.

4073 Urban Geography (3) Internal arrangement, external relations, and locational aspects of urban places, with emphasis on U.S.; urban places identified by presence of tertiary economic activities.

4074 Place and Culture (3) See ANTH 4074.

4077 Economic Geography (3) Location, characteristics, and relationships of primary, secondary, and tertiary economic activity; measurements and theories of location of economic activity.

4078 Environment and Development (3) Geographic theories and methods for analyzing relationships between environments and human settlements.

4079 Geography of Religion (3) Also offered as REL 4079. Theory and methods of analyzing the culture and movement of religious rituals and traditions over space and time.

4080 Historical Geography (3) Advanced concepts and principles of historical geography.

4086 Human-Environment Interactions (3) Also offered as ANTH 4086. Cultural adaptation to difficult and distinctive environments, including mountains and highlands, the arctic, deserts, the humid tropics, and grasslands; subsistence strategies, local knowledge, household economies, land use practices, and resource management institutions.

4087 Gender, Place, and Culture (3) Also offered as ANTH 4087 and WGS 4087. The geography of everyday life showing how notions of maleness and femaleness influence how we understand and relate to the world around us, from our built environment, to the places we invest with meaning, and the very ways we live, work, travel, and explore.

Regional

3001 Geography of Louisiana (3) Development and current distribution of physical and human geography of Louisiana.

4000 Modern India: Society and Culture (3) See SW 4000.

4002 South Asian Politics, Polity, and Culture (3) See INTL 4002.

4031 Latin America and the Caribbean (3) Physical and cultural geography of Latin America and the Caribbean.

4053 Geography of Central Asia and Afghanistan (3) Also offered as INTL 4053. Survey of the geography of Central Asia and Afghanistan; emphasis on geographic elements of the history, ecology, environment, economy, and strategic importance of the region.

4035 Geographical Survey of East Asia (3) General survey of the physical and cultural geography of the region; focus on economic development and international relations.

4050 Historical Geography of the North (3) Physical and cultural geography of the northern U.S.; emphasis on geographical elements identified with the south and their historical development; environment, exploration, population, agriculture, and cultural landscape.

4051 North Africa and the Middle East (3) Also offered as INTL 4051. Survey of the geography of North Africa and the Middle East; emphasis on the geographical elements of the history, ecology, economy, and politics of the region.

4052 Geography of the United States and Canada (3) Physical and cultural geography of the United States and Canada.

4055 Geography of Europe (3) Geographical survey of the natural, cultural, and economic resources of Europe and their relationships to the rest of the world.

PHYSICAL GEOGRAPHY (BS candidates select any three courses.)

Climatology

4013 Meteorology (3) May be taken for elective geography credit. Temporal and areal variations in composition and structure of the atmosphere; meteorological instruments and measurements.

4014 Climatology (3) Climatic phenomena; methods in development of regional climatology.

4015 Physical Climatology (3) Prereq.: GEOG 4013 or 4014 or equivalent and MATH 3152 or equivalent. May be taken for elective geography credit. Exchanges of radiation, energy, matter and momentum between the earth’s surface and the atmosphere that produce characteristic environmental conditions near the ground important to rural and urban land uses.

4016 Methods of Climatological Analysis (2) Prereq.: GEOG 4013 and 4014; or equivalent. Analysis and interpretation of climatological data and application to physical and human problems.

4017 World Climates (3) Prereq.: GEOG 2059 or equivalent. Analysis of atmospheric circulation processes that produce differences in climates throughout the world; the earth’s problem climates and climatically sensitive zones most susceptible to floods, droughts, and other environmental stresses.

4018 Geophysical Hydrology (3) Prereq.: MATH 1021 or equivalent. Analysis of hydrological processes with geophysical perspective; variability of runoff and groundwater; floods and droughts; climate and land use impacts on local and global water resources.

4221 The Tropical Atmosphere (3) Prereq.: GEOG 4013 or 4014. Comparative analysis of the tropical and mid-latitude atmospheric circulation systems; cumulus, monsoon systems, tropical cyclones, and easterly waves; elements of interannual tropical variability such as El Niño-Southern Oscillation.

Geomorphology and Coastal

4021 Alluvial Morphology (3) Prereq.: GEOG 1001, 1003. May be taken for elective geography credit. Processes that originate and change land and hydrographic forms of alluvial surfaces; emphasis on Louisiana.

4022 Geomorphology (3) Prereq.: GEOG 1001, 1003. May be taken for elective geography credit. Basic principles underlying the study of land forms; emphasis on processes shaping the natural landscape.

4024 Coastal Morphodynamics (3) Prereq.: MATH 1021, 1022, or 1023. See OCS 4024.

4029 Coastal Resources and Management (3) Introduction to coastal environments and contemporary global coastal and estuarine management.

Biogeography and Environment

4070 Environmental Conservation (3) Factors governing human use of the earth and its resources.

4082 Biogeography (3) Different approaches to description and interpretation of plant and soil distribution patterns.

4083 Quaternary Paleocology (3) Prereq.: GEOG 4082 and a basic course in historical geology, or equivalent. 2 hrs. lecture, 0 hrs. lab. Also offered as ANTH 4083. Theory and method of reconstructing climatic, biological, ecological, and human history during the Pleistocene and Holocene periods.

4085 Tropical and Subtropical Biogeography (3) Prereq.: GEOG 4082 or equivalent. Includes field trip during spring vacation. Principles of tropical ecology and biogeography taught as preparation for an expedition to tropical America where field methods will be illustrated and ecological diversity studied.

OTHER COURSES

2061 Physical Geography (3) Either GEOG 2050 or 2051 may be substituted for this course. Credit will not be given for both this course and GEOG 2059 or 2051. Analysis of landscapes, hydrology, climate, vegetation, and soil; emphasis on world regional patterns.

4023 Coastal and Shallow-Marine Depositional Systems (3) See GEOL 4023. May be taken for elective geography credit.

4099 The History of Geography (3) 3 hrs. lecture and precessinar discussion. Development of geography since ancient times; emphasis on the 19th and 20th centuries.

4164 Deltaic Geology (3) See GEOL 4164.

4997 Special Topics in Geography (3) Permission of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4998 Independent Reading and Research in Geography (1-6) Permission of instructor. May be repeated for credit. An honors course, GEOG 4999, is also available. Supervised reading or research on topics selected by qualified advanced students.

4999 HONORS: Independent Reading and Research in Geography (1-6) Permission of instructor. Same as GEOG 4999, with special honors emphasis for qualified students.

7674 Pictorial Atlas of Place (3) Same as ANTH 7074.

7901 Introduction to Graduate Study (1) Same as ANTH 7901. Techniques and methods of their profession for incoming graduate students.

7902 Introduction to Research Methods in Geography (3)

7906 Settlement Geography: Exploration (3) May be taken for a max. of 9 hrs. of credit with consent of department.

7918 Process-Form Relationships in Coastal Environments (3)

7911 Selected Topics in Geography (3) Permission of instructor. May be taken for a max. of 9 hrs. when topics vary.

7917 Advanced Physical Geography (3) May be taken for a max. of 9 hrs. of credit with consent of department.

7921, 7922, 7923 Research and Field Work in Geography (3-6 each) Permission of instructor. Each course may be repeated for credit.

7926 Advanced Geomorphology (3) May be taken for a max. of 9 hrs. of credit with consent of department.

7920 Comparative Methods for Geographical Analysis (3) Prereq.: EXST 7901 or equivalent. Spatial analytical methods for handling and interpreting data related to geography.

7937 Comparative Historical Literature (3)

7938 Culture History (3) May be taken for a max. of 9 hrs. of credit with consent of department.

7942 Coastal Climatology (3) Prereq.: GEOG 4028 and a basic course in either meteorology or climatology, or consent of instructor. Meteorological and climaticologic phenomena occurring in coastal areas.

7946 Coastal and Estuarine Resources (3) Prereq.: GEOG 4029 and 4029; or equivalent. Nature of coastal and estuarine resources and their perception, evaluation, and exploitation.

7950 Problems in the Geography of Latin America (3) Prereq.: reading knowledge of Spanish or Portuguese. Problems in the cultural and economic geography of Latin America.

7969 Hydroclimatology (3) Prereq.: GEOG 4014 or 4015 or equivalent. 1 hr. lecture; 4 hrs. lab. Field measurements and laboratory analyses of radiation and water budgets in rural and urban environments; emphasis on evapotranspiration rates and climatic consequences.

7973 Advanced Geographic Information Systems (3) Prereq.: GEOG 4047 or equivalent. Theory and methods of design, development, implementation, and applications of geographic information systems.

7975 Advanced Remote Sensing Seminar (3) V Prereq.: GEOG 4045 or equivalent. May be taken for a max. of 9 sem. hrs. of credit when topics vary. Selected topics in remote sensing.

8000 Thesis Research (1-12 per sem.) Permission of instructor. "S"/"U" grading.

9000 Dissertation Research (1-12 per sem.) Permission of instructor. "S"/"U" grading.
GEOL 2081. 2 hrs. lecture; 3 hrs. lab.

1133 History of the Biosphere (3) Prereq.: GEOL 2081 and MATH 1550. Concepts and methods of analysis, interpretation using borehole exploration, analysis, and interpretation including borehole data, electric logs, and samples of rocks and fluids; correlation of rock units; seismic interpretation of sediment facies, geological structure, geotemperature, fluid pressure and water salinity; analysis of fluid migration, oil and gas development; interpretation of seismic facies, relative timing, and subsurface flow regimes in Louisiana.

4666 Coastal Field Geology (4) Prereq.: consent of instructor. Also offered as GEOG 4666. Four-week field course on the Louisiana coast utilizing facilities operated by Louisiana Universities Marine Consortium. Sedimentary environments, coastal processes, and environmental geological problems of the Mississippi delta plain.

6001 Topics in Earth Sciences for Teachers (3) Prereq.: GEOG 2031. 2 hrs. lecture; 3 hrs. lab. Phase diagrams, magmatic origin of igneous rocks, and evolution of igneous provinces.

7031 Deep-water Depositional Environments (3) Prereq.: introductory course in sedimentology, e.g., GEOG 4031. Different types of deep-sea sediment and water and on various transport processes; emphasis on submarine fan systems, their lithologic and seismic response; geochemical fingerprinting for turbidite and hemipelagic sediments.

7032 Fluvial Processes and Systems (3) Prereq.: consent of instructor. Fluid flow, sediment transport, and fluvial deposits and processes; river systems as conveyor belts for sediment delivery to sedimentary basins; fluvial sediments in the stratigraphic record.

7043 Advanced Igneous Petrology (3) Prereq.: GEOG 3031 or equivalent. 2 hrs. lecture; 3 hrs. lab. Phase diagrams, magmatic origin of igneous rocks, and evolution of igneous provinces.

7044 Advanced Metamorphic Petrology (3) Prereq.: GEOG 3031 or equivalent. 2 hrs. lecture; 3 hrs. lab. Phase diagrams, magmatic origin of igneous rocks, and evolution of igneous provinces.

7061 Sequence Stratigraphy (3) Prereq.: GEOG 4031 or equivalent. One-week field course on coastal environments of the Sierra Nevada and the Rocky Mountains is required. Principles of physical stratigraphy with emphasis on contemporary concepts about the interpretation of tectonic, sea level, and sediment delivery in generating a predictable architecture of sedimentary basin fills.

7062 Seismic Stratigraphy (3) Prereq.: GEOG 3031 or equivalent. Interpretation of seismic reflection data in terms of sedimentary facies, stratigraphic sequences, and depositional environments of local and distant paleohydrologic systems.

4023 Special Topics in Greek Poetry (3) May be taken for a max. of 6 hrs. of credit. Readings and studies in one or more of the following: Homer, Hesiod, Pindar, Greek lyric poetry, Aeschylus, Sophocles, Euripides, Aristophanes.
4024 Special Topics in Greek Prose (3) May be taken for a max. of 6 hrs. of credit. Readings and studies in one or more of the following: Herodotus, Thucydides, the Pre-Socratics, the orators, Plato, Aristotle.
4195 Independent Work (1-3) May be taken for a max. of 6 hrs. of credit. Permission of department required. Readings in Greek literature directed by a senior faculty member.
7003 Seminar in Greek Literature (3) May be taken for a max. of 15 hrs. of credit as topics vary.

HEBREW • HEBR

General education courses are marked with stars (*).

1001 Beginning Hebrew (4) Also offered as REL 1001. This course counts toward the fulfillment of a foreign language requirement only when taken under the HEBR rubric. The alphabet, basic grammar, and vocabulary of classical Hebrew; simple prose passages from the Bible.
★★ 1002 Beginning Hebrew (4) Also offered as REL 1002. Prerequisites: HEBR 1001 or equivalent. This course will count toward the fulfillment of a foreign language requirement only when taken under the HEBR rubric. Biblical narratives; details of syntax; development of vocabulary.
★★ 2003 Intermediate Hebrew (4) Also offered as REL 2003. Prerequisites: REL 1001 or equivalent. This course counts toward the fulfillment of a foreign language requirement only when taken under the HEBR rubric. Biblical narratives; details of syntax; development of vocabulary.
★★ 2004 Intermediate Hebrew (4) Also offered as REL 2004. Prerequisites: REL 2003 or equivalent. This course counts toward the fulfillment of a foreign language requirement only when taken under the HEBR rubric. Biblical narratives and poetry; details of syntax; development of vocabulary.
★★ 2057 The United States from 1865 to the Present (3) An honors course, HIST 2056, is also available.
★★ 2056 HONORS: The United States (3) Same as HIST 2055, with special honors emphasis for qualified students.
★★ 2057 The United States from 1865 to the Present (3) An honors course, HIST 2058, is also available.
★★ 2058 HONORS: The United States (3) Same as HIST 2057, with special honors emphasis for qualified students.
★★ 2061 African American History (3) Social, cultural, and economic role of African Americans in the U.S. from 1619 to the present.
★★ 2075 German Civilization (3) See GER 2075.
★★ 2085 Colonial Latin America (3) Colonial period emphasizing the European background, explorations, political and economic systems, and wars of independence.
★★ 2086 Latin America Since Independence (3) Latin American countries in the 19th and 20th centuries; search for political stability, economic and social progress, and international relations.
★★ 2095 East Asian Civilization to 1800 (3) Interdisciplinary and cultural approach to the civilization of East Asia, particularly China and Japan, from antiquity to early contacts with the West.
★★ 2096 East Asian Civilization since 1800 (3) Modern Asian civilization; emphasis on contact with the West; the rise of nationalism and communism.
2155 Introduction to Russian Culture and Civilization (3) See RUSK 2155.
2195 Topics in History (3) May be taken for a max. of 6 hrs. of credit when topics vary.
3001 History and the Social Sciences I (3) Prerequisites: ED CI 1001. Concurrent enrollment in ED CI 1001. Supervised tutorial experience in local middle or high schools. Introduction to the role of the social sciences in the study of history.
3002 History and the Social Sciences II (3) Prerequisites: ED CI 3001 and HIST 3001. Concurrent enrollment in ED CI 3002. The role of the social sciences in the study of history; course will assist student in the teaching of social studies to small groups in middle and high schools.
3071 Louisiana (3) Political, economic, social, and cultural development.
3115 Introduction to Historical Method (3) Survey of different methods and perspectives used in the research and writing of history.
3117 Undergraduate Proseminar in World History (3) Prerequisite: consent of instructor. Open to students with at least 6 hrs. of credit in history and with an overall 3.00 GPA. May be taken for a max. of 9 hrs. of credit when topics vary. Supervised reading and research in an assigned field of historical study.
3118 Undergraduate Proseminar in European History (3) Prerequisite: consent of instructor. Open to students with at least 6 hrs. of credit in history and with an overall 3.00 GPA. May be taken for a max. of 9 hrs. of credit when topics vary. Supervised reading and research in an assigned field of historical study.
3119 Undergraduate Proseminar in United States History (3) Prerequisite: consent of instructor. Open to students with at least 6 hrs. of credit in history and with an overall 3.00 GPA. May be taken for a max. of 9 hrs. of credit when topics vary. Supervised reading and research in an assigned field of historical study.
3001 Greece of the City State (3) Political, social, and cultural evolution of the Greek world from the Bronze Age to the foundation of the Macedonian Empire of Alexander the Great; attention to growth of democratic institutions.
4003 The City State (3) The Roman state, culture, and society from the origin of the city to the dictatorship of Julius Caesar.
4004 Rome of the Caesars (3) The growth of absolute government, empire of the Western Empire; the rise of Constantinople; the fall of the Western Empire.
4005 History of the Christian Church: 50-450 (3) See REL 4005.
4006 History of the Christian Church: 450-1350 (3) See REL 4006.
4007 The Early Middle Ages, 300-1000 (3) History of Europe from Constantine the Great to the Carolingians; development of medieval society and institutions.
4008 The Later Middle Ages, 1000-1500 (3) History of Europe from the voyages of Columbus; developments in social, cultural, and political institutions.
4009 The Renaissance (3) Italian society and thought from Dante to Machiavelli; with emphasis on the medieval foundations of Renaissance culture; northern Europe from the Hundred Years War to the Reformation, with emphasis on political and economic development.
4101 The Age of the Reformation (3) Also offered as REL 4101. Sixteenth century Europe with emphasis on Protestant and Catholic reform movements.
4102 History of Modern Christian Thought (3) See REL 4102.
4104 The Old Regime and the Enlightenment (3) Institutions of the Old Regime, with emphasis on Enlightenment, 1660-1760.
4105 French Revolution and Napoleon (3) Background, constructive developments, and territorial changes resulting from wars of the period, with emphasis on Europe’s emergence into a new era.
4106 19th Century Europe (3) The period 1815-1870.
4107 20th Century Europe (3) Survey of the 20th century European history; emphasis on role of industrialization in social, political, and cultural change and the impact of modern national ideologies.
4200 Modern Italy (3) Intellectual, economic, social, and political history of Italy from the Enlightenment to present; emphasis on national unification, Fascism, and World War II; post-war economic development and terrorism.
4202 France since 1770 (3) Cultural, political, economic, social and intellectual survey of France from the pre-revolution to the present.
4203 Spain since 1469 (3) Political, economic, and social development from the marriage of Ferdinand and Isabella to the present.
4204 The Dutch Republic and Empire: 1500-1800 (3) Political, economic, social, and cultural history of one of the great powers of early modern Europe; emphasis on the Golden Age of Rembrandt and Vermeer.
4205 Germany from the Reformation to Bismarck (3) German political, social, and cultural development from 1500 to 1890; the Thirty Years War; the rise of Prussia; the nationalism of the 19th century.
4206 20th Century Germany (3) The states that have existed in Germany since 1890; the Wilhelminian Empire; the Weimar Republic; the Third Reich; and the Germany of today.
4208 The First World War (3) The First World War, 1914-1918, including controversies regarding its origin and aftermath.
4209 Eastern Europe: 1700-1914 (3) Emphasis on the rise of nationalism in the 19th century.
4230 Eastern Europe: 1914-Present (3) Emphasis on the independent nation-states after World War I, impact of totalitarianism, and the current liberalization.
4301 The Balkans: 1453-1878 (3) Origins of the Balkan peoples, development of the Ottoman Empire, and rise of the autonomous Balkan nation-states.
4302 The Balkans: 1875-Present (3) Events leading up to and including World War I, problems of the inter-war period, World War II, and rise and decline of Communism in Eastern Europe.
4303 Russia to 1861 (3) Kievan Rus’, the Tsardom of Muscovy, and Imperial Russia to the emancipation of the serfs.
4304 Russia Since 1861 (3) Reaction and reform from 1861 to 1905; failure of parliamentary democracy amid war and revolution; Leninism and Stalinism; relaxation of totalitarian rule since Stalin’s death.
4309, 4400 English Constitutional History (3.0) Origin and development of English legal institutions; their influence on American legal institutions.
and cultural history of the Trans-Mississippi West in the 19th century.

4070 The American West in the 20th Century (3) Selected themes in the political, social, economic, and cultural history of the Trans-Mississippi West in the 20th century.

4071 The Antebellum South (3) Economic, social, intellectual, and political development of the South to 1860.

4072 The New South (3) Political, social, economic, and intellectual history of the South from 1860 to the 20th century.

4073 Louisiana to 1815 (3) Political, economic, and social development of early Louisiana.

4075 American Economic History to 1860 (Also offered as ECON 4076. American economic growth and development from the colonial period to 1860, including the railroad, slavery, technology, and nature of the industrial revolution; findings and method of the "new" or quantitative economic history.

4076 American Economic History: 1860 to the Present (3) Also offered as ECON 4078. American economic development from 1860 to the present; economic impact of the Civil War, technological change, mechanization of agriculture, railroads, automobiles, war, the Great Depression, and multinational corporations; findings and method of the "new" or quantitative economic history.

4077 American Popular Culture (3) Examination of popular culture forms from 19th-century vaudeville to today's music videos; emphasis on development of mass media.

4078 Asian-American History (3) History of Asian peoples in the United States; topics including immigration, community development, cultural conflict, racism, and stereotypes.

4079 Women in American History (3) Survey of political, social, economic, and cultural development of American women from colonial times to the present; topics include nineteenth century women's rights movements, woman suffrage, women in civil rights movement, birth control, the modern feminist movement, and southern women.

4080 The Caribbean: 1492-1830 (3) Nature of and changes in economic and political institutions after European exploration; findings and method of the "new" or quantitative economic history.

4081 The Caribbean: 1492-1830 (3) Also offered as MILS 4085. Acquisition of empire, emergence of industrial society, and the processes of revolution and modernization during the past century.

4082 Mexico: The National Period (3) Political, economic, social, and diplomatic developments from 1821 to the present.

4083 Mexico: The National Period (3) Also offered as MILS 4084. Economic growth and development from 1860 to the present; economic impact of the Civil War, technological change, mechanization of agriculture, railroads, automobiles, war, the Great Depression, and multinational corporations; findings and method of the "new" or quantitative economic history.

4084 West Africa to 1800 (3) The geography, ethnicity, and social, economic, and political development of West Africa from the prehistoric period to 1800.

4085 West Africa from 1800 (3) The rise of Islamic orthodoxy, the role of imperialism, the rise of African nationalism, and other themes in the history of West Africa since 1800.

4086 The Colonial Period (3) Emphasis on events that gave rise to the socioeconomic and political problems of modern Mexico.

4089 Brazil: The National Period (3) Political, economic, social, and diplomatic developments from the early 19th century to the present.

4091 China to 1600 (3) History and civilization, including a survey of religion and philosophy, language and literature, art and archaeology, and popular culture.

4092 China since 1600 (3) Western impact on civilization and the processes of revolution and modernization during the past century.

4093 Pre-Modern Japan (3) Political and cultural history and civilization from the beginnings to the close of the Japanese middle ages.

4094 Modern Japan (3) From 1600 to the present; emphasis on historical and cultural roots of Japan's modernization in the late 19th century and quest for empire in the 20th century; cultural and intellectual developments in modern Japan.

4095 The Middle East to 1800 (3) Also offered as REL 4095. History and culture of the Arab people in the Middle East and the Maghrib from the pre-Islamic period to the end of the 18th century.

4096 The Middle East to 1800 (3) Also offered as REL 4096 and INTL 4096. History and culture of the Arab people in the Middle East and North Africa in the modern period; internal Arab social, economic, and intellectual developments; Muslim responses to European colonialism; modern Arab nationalism and political trends; Islamic reformist and revivalist movements; problem of Palestine.

4097 History of South Asia (3) Social, political, economic, and cultural evolution from the Bronze Age to the creation of India and Pakistan in 1947.

4098 Muslims of South Asia (3) Also offered as REL 4098. Origins and evolution of Islamic political, social, and cultural institutions in South Asia; internal and external cultural interactions from the birth of Indo-Muslim communities in the 8th century to the rise of Muslim nationalism in the 20th century.

4099 Approaches to History (3) Open to students having 6 hrs. credit in history and consent of instructor. Can be taken for credit with changing conceptions and methods of writing history from classical Greece to the present.

4100 Studies in Classical History (3) Selected peripends and problems in Greek and Roman history; methods and materials of ancient scholarship.

4101 Honors: Senior Thesis Research Seminar (3) Prereq.: HIST 4109. Open to honors students with consent of seminar director. Thesis writing under supervision of seminar director; oral examination upon completion of thesis; student will be examined by a committee of three or four faculty members on thesis content and on student's general field of historical interest.

4102 Modern European Intellectual History: The Enlightenment to 1850 (3) Modern thought in social, political contexts from Voltaire to Marx.

4103 Modern European Intellectual History Since 1850 (3) European thought affecting society in the industrial age; realism, psychoanalysis, existentialism, the information explosion.

4104 Russian Ideologies: 1840-1940 (3) Social and political ideologies in the context of authority, serfdom, industrialization, and revolution; evolution of Soviet Marxism.

4105 History of Ancient Israel (3) See REL 4125.

4106 The Russian Economy in the 20th Century (3) See ECON 4022.

4107 World War II (3) Also offered as MILS 4107. Global crisis of the 1930s; Axis and Allied strategies; major military campaigns; great power diplomacy; life on the homefronts; the Holocaust; espionage and resistance; the experience of combat; social, political, and scientific consequences.

4108 The Vietnam War (3) French colonial rule and Vietnamese nationalism; Ho Chi Minh and the war against the French (1946-54); the National Liberation Front (Vietcong); process of American involvement and disengagement; counter-insurgency and the air war; anti-war movement in the United States; reasons for failure of American policy; Vietnam since 1975; lessons and legacies for the U.S.

4111 Historical Archaeology (3) See ANTH 4111.

4112 Religion in the United States (3) Also offered as REL 4112. The congregation from the colonial period to the present; relation between changing religious beliefs and behavior of Americans and political, social, economic, and intellectual developments; Puritanism, revivalism, response to Darwinian evolution, social gospel, and civil religion.

4113 Religious Identities in the United States (3) Also offered as REL 4113. The congregation from the colonial period to the present; relation between changing religious beliefs and behavior of Americans and political, social, economic, and intellectual developments; Puritanism, revivalism, response to Darwinian evolution, social gospel, and civil religion.

4114 Religions of China and Japan (3) Also offered as REL 4114. Major religious traditions of East Asia; Confucianism, Taoism, Mahayana Buddhism, Shinto, and Chinese and Japanese folk religion; religion in the context of Chinese and Japanese cultural history.

4115 Special Studies in World History (3) Prereq.: consent of department. May be repeated for credit when topics vary.

4116 Special Studies in European History (3) Prereq.: consent of department. May be repeated for credit when topics vary.

4117 Special Studies in United States History (3) Prereq.: consent of department. May be repeated for credit when topics vary.

4118 African American in Louisiana (3) Life, history, and culture of African Americans in Louisiana, from the colonial times to the present.

4119 Civil Rights Movement (3) The history of the black freedom struggle from 1945-1972.
4020 Black Nationalism (3) The evolution of black nationalism from the colonial period to the present.

4043 History and the Social Sciences III (1) Prereq.: ED CI 1002 and HIST 1002; concurrent enrollment in ED CI 4004 and 4005. How history and the social sciences view issues of importance in the contemporary world; course will assist students who are enrolled in student teaching.

4091 Independent Study (3) Prereq.: open to advanced students of high academic standing by consent of department. Reading and research on selected topics.

7901 History Seminar in History (3) May be taken for a max. of 9 sem. hrs. of credit.

7904 American Historiography and Criticism (3) American historical writing from the colonial period to the present.

7908 Introduction to Historical Research (3) General methods of and approaches to historical research and writing in European and American history, including theories, current problems, and debates.

7909 Research Seminar in European History (3) Sources, bibliography; reports on original research.

7915 Reading Seminar in European History (3) V

7916 Reading Seminar in Renaissance and Reformation V

7917 Reading Seminar in Early Modern Europe (3) V

7918 Reading Seminar in 18th Century Europe (3) V

7919 Reading Seminar in 19th Century Europe (3) V

7920 Reading Seminar in 20th Century Europe (3) V

7921 Reading Seminar in Special Topics in European History (3) V May be taken for a max. of 6 sem. hrs. credit when topics vary.

7922 Reading Seminar in European History to 1600 (3) May be taken for a max. of 9 sem. hrs. of credit when topics vary.

7923 Reading Seminar in European History from 1500 to 1800 (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary.

7930 Reading Seminar in British History (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary.

7935 Reading Seminar in American History, 1667 to 1815 (3) F

7952 Reading Seminar in American History, 1815-1899 (3) Prereq.: HIST 7591.

7955, 7956 Reading Seminar in American History from 1865 to the Present (3) 1865 to 1879 may be taken together.

7957 Research Seminar in American History (3) Introduction to research methods, sources, and bibliography; reports on original research.

7958 Research Seminar: Special Topics in American History (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary.

7959 Reading Seminar: Special Topics in American History (3) May be taken for a max. of 9 sem. hrs. of credit when topics vary.

7970 Reading Seminar in Comparative History (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary.

7971, 7982 Seminar in Latin American History (3.3) Sources and bibliography; reports on original research.

7983, 7984 Seminar in Latin American History (3.3) Sources and bibliography; reports on original research.

8000 Thesis Research (1-2 per sem.) “S”/“U” grading.

9000 Dissertation Research (1-12 per sem.) “S”/“U” grading.

HONORS • HNRS

General education courses are marked with stars (*).

★ 1001 Seminar in Ancient Western Civilizations (3) Prereq.: ENGL 1001 or equivalent. Coreq.: HNRS 1003. Credit will not be given for this course, HNRS 1101 and CLST 2191. Curricular equivalent of a humanities elective. The ancient civilizations: history, philosophy, religion, government, and fine arts.

★ 1003 Lectures in Ancient Western Civilization (3) Coreq.: HNRS 1101. Credit will not be given for this course and HNRS 1103. Curricular equivalent of a 3 hr. history, social sciences, or humanities elective. Lectures, readings, and examinations coordinated with HNRS 1001.

★ 1007 Introduction to Life Sciences (4) 2 hrs. lecture; 2 hrs. lab. Not to be taken with BIOL 1001, 1002, 1201, 1202, 1207, 1208, 1209, or 1503. A basic course, organized in accordance with the principle of organic evolution emphasizing the chemical basis of life and cell biology.

★ 1008 Introduction to the Life Sciences (4) 2 hrs. lecture; 4 hrs. lab. Not to be taken with students who have had BIOL 1001, 1002, 1201, 1202, 1207, 1208, 1209, or 1503. Continuation of HNRS 1007. A basic course, organized in accordance with the principle of organic evolution emphasizing the chemical basis of life and cell biology.

★ 1101 Seminar in Comparative Civilizations (3) Prereq.: ENGL 1001 or equivalent. Coreq.: HNRS 1101. Credit will not be given for this course and HNRS 1001. Curricular equivalent of a humanities elective. Comparative and interdisciplinary study of the history, literature, philosophy, religion, and art of five ancient civilizations: Greek, Indian, Chinese, Japanese, and Meso-American.

★ 1103 Lectures in Comparative Civilizations (3) Coreq.: HNRS 1101. Credit will not be given for this course and HNRS 1003. Curricular equivalent of a 3 hr. history, social sciences, or humanities elective. Lectures, readings, and examinations coordinated with HNRS 1101.

★ 2000 Critical Analysis (3) Course for first-year Honors College students. Introduction to various practices of academic discourse and research methods.

Interdisciplinary approach to a specific topic.

★ 2002 Seminar in Roman and Medieval Civilization (3) Prereq.: HIST 1001 and 1003, Coreq.: HIST 1004. Curricular equivalent to ENGL 2000. European civilization from ancient Rome through the Middle Ages; includes history, philosophy, religion, government, and fine arts.


2011 The Age of Enlightenment (3) Curricular equivalent to ENGL 2090. Literature, philosophy, history, art, and science of the age of enlightenment.

★ 2012 The 19th Century (3) Curricular equivalent to ENGL 2090. Literature, philosophy, history, art, and science of the age of enlightenment.

★ 2013 The 20th Century (3) May be taken for a max. of 6 hrs. of credit. Curricular equivalent to ENGL 2090. Selected themes: art, literature, science, and society.

★ 2020 Installation and Maintenance of Ornamentals in the Landscape I (2) F 1 hr. lecture; 2 hrs. lab. Introduction to installation and maintenance of landscape plants including trees, shrubs, perennials, and annuals; irrigation installation and repair.

★ 2022 Installation and Maintenance of Ornamentals in the Landscape II (2) S Prereq.: HORT 2020 or consent of instructor. 1 hr. lecture; 2 hrs. lab. Introduction to installation and maintenance of landscape plants including trees, shrubs, palms, and roses; evaluation of landscape documents, cost estimation and bidding.

★ 2025 Introduction to the Green Industry (3) F Defining the general management and production aspects of horticultural concepts specific to the “green agribusiness” sector; topics include entrepreneurial entry; specialized green industry labor; regulatory overview; applied use of permits, waivers, and variances; cost effect of regulatory compliance; acquired use of patent and proprietary licensing.

★ 2050 General Horticulture (4) F, S 3 hrs. lecture; 2 hrs. lab. Science and art of modern horticultural plant production, including propagation, fertilization, pest control, and pruning; major groups of garden crops including vegetables, fruits and nuts, ornamentals, houseplants, and florist crops; lab includes propagation and culture of garden plants in field and greenhouse.

★ 2061 Plant Propagation (3) S Prereq.: HORT 2050. 2 hrs. lecture; 2 hrs. lab. Principles of sexual and asexual propagation; typical methods for reproduction of plants.

★ 2086 Introduction to Turfgrass Management (3) S-E Prereq.: BIOL 1202 or 1002; AGRO 2051 or equivalent; 2 hrs. lecture; 3 hrs. lab. Required field trips. Also offered as AGRO 2406. Turfgrass identification and adaptation; establishment and maintenance of high quality turf areas; turfgrass pests and their control.

★ 2122 Herbaceous Plant Materials (2) S-O 1 hr. lecture; 2 hrs. lab. Identification and study of plant materials; production protocols, growth and development, and visual characteristics of herbaceous plant materials used in ornamental horticulture and landscaping

★ 2124 Woody Plant Materials I (2) F 1 hr. lecture; 2 hrs. lab. Identification and study of plant materials; ecological and visual characteristics of plants used in landscape design.
2125 Wood Plant Materials II (2) S Prereq.: HORT 2124 or consent of instructor. 1 hr. lecture; 3 hrs. lab. Continuation of HORT 2124. Introduction to the nursery industry including production, availability, and marketing.

2130 Survey of Arboriculture (2) S 1 hr. lecture, 2 hrs. lab. Review of plant science, environmental concepts, and management practices for trees in the landscape.

2860 Growth and Development of Agricultural Crops (3) F-O Prereq.: CHEM 1002 or 1002 and BIOL 1002 or 1002. 2 hrs. lecture, 2 hrs. lab. Physiology of agricultural plants, including water relations, respiration, photosynthesis, and growth and development.

3000 Horticulture and the Environment (3) Prereq.: HORT 2050 and written consent of instructor. May be taken for a max. of 6 sem. hrs. credit. Work experience in horticultural industries culminating in acceptable written reports and a seminar presentation.

3100 Research Problems (3) Written consent of the instructor. May be taken for a max. of 6 sem. hrs. credit. Independent research under a faculty member culminating in an oral and written research report.

3015 Urban Landscape Management (3) S-K Prereq.: HORT 2050, 2124 or equivalent. 2 hrs. lecture; 2 hrs. lab. Management of the landscape through proper installation, soil management, plant care, pesticide management, employee management, and cost accounting.

3040 Landscaping (3) S-O 1 hr. lecture; 2 hrs. lab. Survey of construction techniques and materials used in landscape contracting including drainage systems, paving, retaining walls, design, and maintenance.

4010 Tropical Fruit Breeding (3) S-E Prereq.: HORT 2050 or equivalent. Current status of cultivation throughout the world; production practices; postharvest handling; international trade of tropical/subtropical horticultural crops.

4012 Special Topics in Horticulture (1-3) V Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Lab/field trip may be required. Subject areas not covered in other horticulture courses.

4028 Greenhouse Production and Management (4) F 3 hrs. lecture; 2 hrs. lab. Physiology and greenhouse production of floriculture crops with hands-on learning in production technology, scheduling, economics, and regulation of crop growth and development and general physiology of flowering pot plants.

4030 Plantation, Beverage, and Tropical Nut Crops (3) S-O Prereq.: HORT 2050 or equivalent. World situations, production practices, pest management, harvesting, postharvest care, agro-processing, and international trade of rubber, oil palm, cocoa, coconut, olive, coffee, tea, wine grapes, vanilla, and various tropical/subtropical nut crops.

4040 International Horticulture (3) S Prereq.: HORT 2050 or equivalent. Overview of the horticulture industry worldwide. Marketing, economics, and current international trade issues presented in a global context.

4050 Horticultural Science Education (3) F-S 2 hrs. lecture; 2 hrs. lab. May be taken for a max. of 6 sem. hrs. of credit. May be taken for credit in a maximum of 6 hrs. of credit when topics vary. Contemporary issues in human ecology of interest to special professional and business groups.

4901 Reading Assignment in Human Ecology (1-6) Open to advanced students of high academic standing by consent of instructor. May be taken for a max. of 6 hrs. of credit. Students are responsible for registering with a faculty member with whom they will select the area of reading and research.

4901 Special Topics in Human Ecology (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Lectures and/or laboratories on selected topics not covered in other human ecology courses.

7090 Research Methods in Human Ecology (3) Philosophy of human ecology research; issues and trends; design and methodology.

7991 Independent Reading and Research in Human Ecology (3) Prereq.: consent of advisor. May be taken for a max. of 6 hrs. of credit. Directly individual reading and research in a selected area of human ecology.

7992 Human Ecology Research Seminar (1) F S Required of all majors. 3 hrs. lecture. Review U.S. human ecology during each semester of full-time residence. Only 3 sem. hrs. of credit may be applied toward the degree. May be taken for a max. of 3 sem. hrs. of credit. "P/F" grading. Research reports and discussion of current topics and issues in human ecology.

7993 Directed Research Methods in Human Ecology (3) Prereq.: HUEC 7090 or equivalent and EXST 7013 or 7014 or 7015 or equivalent. 2 hrs. lecture; 2 hrs. lab.

HUMAN ECOLOGY • HUEC

In the School of Human Ecology, the third digit of the course number denotes the subject area of the course as follows: 1 and 2—human nutrition and food; 3 and 4—apparel, textiles and merchandising; 5 and 6—family, child, and consumer sciences; 9 and 0—general courses (except 7094 which is a nutrition course).

GENERAL HUMAN ECOLOGY

1000 Human Ecology as a Profession (3) Attributes that identify human ecology as a profession; historical and philosophical view of its mission, interrelationship of its various specializations, and commitments and commitments necessary in the various specializations.

2911 Special Topics in Human Ecology (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Contemporary issues in human ecology of interest to special professional and business groups.

3901 Research Assignment in Human Ecology (1-6) Prereq.: consent of major and highest standing of high academic standing. Consent by major or for a max. of 6 hrs. of credit. Students are responsible for registering with a faculty member with whom they will select the area of reading and research.

3901 Special Topics in Human Ecology (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. when topics vary. Lectures and/or laboratories on selected topics not covered in other human ecology courses.

9090 Research Methods in Human Ecology (3) Philosophy of human ecology research; issues and trends; design and methodology.

9791 Independent Reading and Research in Human Ecology (3) Prereq.: consent of advisor. May be taken for a max. of 6 sem. hrs. of credit. Directly individual reading and research in a selected area of human ecology.

9792 Human Ecology Research Seminar (1) F S Required of all majors. 3 hrs. lecture. Review U.S. human ecology during each semester of full-time residence. Only 3 sem. hrs. of credit may be applied toward the degree. May be taken for a max. of 3 sem. hrs. of credit. "P/F" grading. Research reports and discussion of current topics and issues in human ecology.

9793 Directed Research Methods in Human Ecology (3) Prereq.: HUEC 7090 or equivalent and EXST 7013 or 7014 or 7015 or equivalent. 2 hrs. lecture; 2 hrs. lab. Research methods and applications in human ecology.

7090 Research and Project Development in Human Ecology (1-12) Credit will be given for this course and HUEC 8000. May be repeated for a max. of 15 sem. hrs. credit. "S/U" grading. Directed research and focused project development under the supervision of the major professor.


8090 Dissertation Research (1-12 per sem.) Prereq.: permission of department. "S/U" grading.

8091 Independent Research for Doctoral Students (1-6 per sem.) Prereq.: must be a doctoral student and have consent of instructor and approval of the student, full doctoral committee for each repetition of the course. This course may be repeated for credit; a max. of 15 sem. hrs. is allowed and may be applied to the degree. Credit in HUEC 7091 is included in the 15 sem. hrs.

FAMILY, CHILD, AND CONSUMER SCIENCES

2050 Family Dynamics (3) F A systems approach to examining family processes and development throughout the life cycle.

2061 The Family in a Consumer Society (3) An introduction and overview of family consumer opportunities and problems for a family society.

2065 Management of Family Systems and Services (3) Prereq.: credit or registration in HUEC 1000. A systems perspective of contemporary families and their processes including environmental influences, elements of family management, and management of school and community resources and services.

2083 Introduction to Early Childhood Education (3) An introduction to the field of early childhood education (ECE), encompassing the years from birth through age eight.

2085 Development of Young Children in Context (4) Prereq.: BIOL 1001. 3 hrs. lecture; 2 hrs. field observations. Development of children from prenatal to age eight in the family and other developmental contexts; field observations with infants and toddlers, observations and practical experience in the School of Human Ecology's Preschool Laboratory and in other early childhood settings.

2086 Young Children's Cognitive and Linguistic Development (3) Prereq.: HUEC 1055. An introductory survey of current theory and research on young children's cognitive and linguistic development; special attention is given to the development of oral language, reading skills, and mathematical concepts in young children; emphasis on implications for the early childhood education classroom.

2087 Learning Environment for Toddlers, and Preschool Children (3) Prereq.: HUEC 2065, 2083, and 3055; 2 hrs. lecture; 3 hrs. lab. Planning and preparing environments and learning materials; and support optimal physical, social, emotional, and cognitive development of young children.

2088 Family Finance (3) Prereq.: ECON 2303 or AGEC 2075 or equivalent. Development of bases for decision making related to family income, saving, and spending.

2089 Adult-Child Relationships (3) Prereq.: HUEC 2050. Parent-child and other adult-child interactions and relationships; emphasis on the development and interactive nature of adult-child relationships including the influence of adult-child relationships on child outcomes and adult behavior.

2091 Field Experience in Family, Child, & Consumer Science (1-4) Prereq.: HUEC 2065 or SOCL 2011 or ANTH 1005. Housing issues and problems; solutions to the housing problems including government policies and government, nonprofit, and collaborative programs.

2092 Professional Seminar in Family, Child, and Consumer Sciences (2) Prereq.: at least 2 yrs. credit. Supervised professional experiences designed to integrate academic learning with practice.

2097 Contemporary Housing Issues (3) F Prereq.: HUEC 2065 and SOCL 2011 or ANTH 1005. Housing issues and problems; solutions to the housing problems including government policies and government, nonprofit, and collaborative programs.

2092 Professional Seminar in Family, Child, and Consumer Sciences (2) Prereq.: at least 2 yrs. credit. Supervised professional experiences designed to integrate academic learning with practice.

2097 Contemporary Housing Issues (3) F Prereq.: HUEC 2065 and SOCL 2011 or ANTH 1005. Housing issues and problems; solutions to the housing problems including government policies and government, nonprofit, and collaborative programs.
TEXTILES, APPAREL, AND MERCHANDISING

2032 Introductory Apparel Design (4) Prereq.: majors only or permission of instructor. 2 hrs. lecture; 4 hrs. lab. The design process; art, elements and principles applied to aesthetic, functional, and structural design of textile and apparel products from fashion illustration and computer-aided design.

2037 Apparel Structure and Fit (4) Prereq.: for students in the Apparel Design concentration only or consent of instructor. 1 hr. lecture; 4 hrs. lab. Fundamental principles of garment assembly and relationships between garment design, fabric characteristics, and production processes; analysis of fit; alterations.

2400 Textile Science (3) F,S, Basic physical, biological, and chemical characteristics of fibers, yarns, and fabrics; selection, maintenance, and performance of textiles.

2401 Textile Science Laboratory (1) F,S, Prereq.: credit or registration in HUEC 2404. 3 hrs. lab. Introduction to basic physical and chemical testing of textiles.

2404 Early Experience in the Textile/Apparel Industry (1) 4 hrs. practicum; 32 hrs. of supervised experience. Pass-fail grading. May be taken for a max. of 4 hrs. credit when field site varies. 2 hrs. lecture through Continuing Education. 26 hrs. of on-campus seminars. Fee to cover expenses. Structured educational experience designed to provide students with a comprehensive understanding of contemporary industries in major import and export apparel and fabric businesses.

3002 Textile and Apparel Product Development (3) Prereq.: HUEC 2040, 2045. Processes and issues related to development of textiles and apparel products for consumers.

3037 Intermediate Apparel Product Design (4) Prereq.: HUEC 2037, 2 hrs. lecture; 4 hrs. lab. Principles and application of two-dimensional or flat pattern design; development of creative patterns and design for use in designing various garment styles and details; conceptualization and execution of original garment designs. May be taken for a max. of 8 hrs. credit. Pass-fail grading.

4037 Consistent Apparel Product Design (4) Prereq.: majors only; HUEC 2404 and MATH 1022; MATH 1431 or EXST 2201. Emphasis on theories and principles in apparel design, and the relationship of consumer behavior to design decisions and responsibilities of merchandise buyers, domestic and foreign merchandise resources and negotiation.

4304 Apparel Merchandising Strategies and Assortment Planning (3) Prereq.: HUEC 2032 and computer literacy; 2 hrs. lecture; 2 hrs. lab. Assortment planning and sales strategies; advanced quantitative concepts and procedures used in apparel buying; management and interpretation of data related to merchandising and sales.

4536 Visual Merchandising and Promotion Strategies (3) Prereq.: HUEC 2404. Displays, elements and techniques; visual merchandising; special events strategies; public relations; Internet promotions.

3230 Pattern Design with Computer Application (4) S Prereq.: HUEC 2037, 2 hrs. lecture; 4 hrs. lab. Application of two-dimensional pattern making techniques to various garment styles and details. Design, development, and manufacturing of original garment design; introduction to proprietary computer software.

3232 Apparel Design Studio (3) Prereq.: HUEC 2032, 2037, ART 1471 or 1472, or consent of instructor. Fashion illustration techniques; introduction to major topics for diversified apparel markets; portfolio development; use of an industry-specific CAD system for pattern making and visual merchandising.


4037 Advanced Apparel Product Design (4) Prereq.: HUEC 2302, 2 hrs. lecture; 2 hrs. lab. Principles and application of three-dimensional pattern design.

4401 History of Textiles (3) S-O,C, Cultural, functional, and technological developments of textiles by selected periods and countries.

4403 Advanced Textiles (3) F Prereq.: HUEC 2401, 2 hrs. lecture; 2 hrs. lab. Characteristics of natural and manufactured textile fibers; physical and chemical modifications to meet consumer needs; textile dyes and finishes; methods of fiber identification and chemical testing of textiles.

4404 Global Textile and Apparel Economics (3) F Prereq.: HUEC 2032, ECON 2300. Analysis and application of economic concepts and principles associated with the textiles and apparel industry; overview of global economic and competitive environments.

4535 Synthesis: Textiles and Apparel Process Products (3) S Prereq.: HUEC 4037, 1 hr. lecture; 4 hrs. lab. Multi-functional team approach to creative problem solving; apparel product design, development, evaluation, and presentation using advanced pattern making techniques and technology.

4406 Advanced Topics in Apparel Merchandising (3) F Prereq.: HUEC 3082 and 4048. Application of principles of product development, buying and management of apparel merchandise; current industry issues and trends; emphasis on theoretical and practical applications.

4707 Internship in Textiles, Apparel, and Merchandising (3 or 6)Su Prereq.: senior standing; a grade of at least 2.30 on all HUEC classes taken at LSU and permission of departmental advisor. 80 hrs. internship. May be taken for a max. of 6 hrs. of credit when topics vary. Analysis and discussion of selected research and creative topics.

4708 Thermal Characterization of Fibers and Polymers (3) 2 hrs. lecture; 2 hrs. lab. Analysis and characterization of fibers and polymers using microstructural techniques; examination of textile fibers and fabrics, including modern, historic, and archaeological specimens.

4709 History of Dress and Adornment Prior to 1700 (3) Emphasis on styles of western civilization; how dress functions for individuals within culture and society; relationships of gender, class, and function in design; history of androgyny; economics, religion, and aesthetics to dress.

4702 History of Dress and Adornment After 1700 (3) Emphasis on styles of western civilization; history of dress functions for individuals within culture and society; relationships of gender, environment, technology, economics, religion, and aesthetics to dress.

4708 Consumer Behavior in Fashion (3) Study of dress and appearance with emphasis on cultural, aesthetic, psychological, and marketing aspects. Means of dress and appearance, creation and diffusion of fashion and consumer culture, consumer characteristics, and fashion implications.

4761 Comparative Studies in Dress and Culture (3) F Also offered as ANTH 3702. Comparison of dress and culture in different cultural settings, e.g., environment, religion, ethnicity, gender, age, and social class. The role of cultural change and western culture on world dress, ethnic, and folk traditions in dress.

4705 Textile Manufacturing (3) Prereq.: HUEC 4045; and one 7000-level statistics course. Study of mass production of textiles, with a detailed analysis of manufacturing technology, quality control methods, and end-use performance evaluation and application.

4706 Apparel Merchandising and Global Expansion (3) Internationalization of apparel merchandising; examination of international foundations, principles, and applications within selected international settings; development of international apparel merchandising strategies; assessment of global issues that affect apparel merchandising.

4707 Consumer Behavior in the Apparel Merchandising Environment (3) Examination of consumer behavior theories and their applications to apparel purchase and patronage decisions and merchandising research.

4709 Bio-based Composites: Production and Evaluation (3) Bio-based material products and applications, with case studies to illustrate end-use evaluation of related agricultural materials.

4704 Introduction to Research in Textiles, Apparel Design, and Merchandising (3) F Introduction to research and literature in textiles, apparel design, and merchandising.

4702 Research in Textiles (3) 1 hr. lecture; 4 hrs. lab. Research methods applied to fabric analysis and testing; trends and recent developments.

4708 Seminar: Textiles, Apparel Design, and Merchandising (1) Only taken for a max. of 2 hrs. of credit if topics vary. Reports and discussion of recent literature and research.

4704 Selected Topics in Textiles, Apparel Design, and Merchandising (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. Analysis and discussion of selected research and creative topics.

4709 Microscopy of Fibers and Polymers (3) Analysis and characterization of fibers and polymers using microscopic techniques; emphasis on textile fibers and fabrics, including modern, historic, and archaeological specimens.

4707 Modern Fiber Science and Technology (3) 2 hrs. lecture; 2 hrs. lab. New techniques for obtaining fiber images, derived from new technology; examination of polymeric materials used for the development of high performance fibers for space and other demanding applications.

4707 Modern Fiber Science and Technology (3) 2 hrs. lecture; 2 hrs. lab. Analysis and characterization of fibers and polymers using the new advanced techniques, such as X-ray and neutron diffractometry; examination of polymeric materials used for the development of high performance fibers for space and other demanding applications.
4068 Regulatory Considerations in Occupational Safety (3) V Major emphasis on recognizing the occupational safety and health field; Occupational Safety and Health Act (OSHA), Worker Compensation laws, Consumer Product Safety Act (CPSA), and Mine Safety and Health Act (MSHA).

4069 Principles of Industrial Hygiene (3) V Prereq.: HRE 2563 and BIOL 2180, or equivalent. Industrial hygiene relates to environmental factors that produce adverse employee health.

4070 Teaching: Construction Industries (3) V An activity-oriented, conceptually based teacher education curriculum, incorporating methods and materials of The World of Construction as developed by the Industrial Arts Curriculum Project.

4077 Development of Agriculture in America (3) V Organization and development of agriculture in America from colonial times to the present.


4080 Teaching: Manufacturing Industries (3) V An activity-oriented, conceptually based teacher education curriculum, incorporating methods and materials of The World of Manufacturing as developed by the Industrial Arts Curriculum Project.

4150 Teaching Cooperative Education (3) V Organization and administration of cooperative education programs in public secondary education; historical foundations; relevant federal legislation.

4200 Teaching in Human Resource Education Content Areas (3) V Prereq.: HRE 2001, 3101, and 3201. Teaching human resource development in the formal classroom; emphasis on content area, selection of materials, and planning instruction.


4252 Instruction and Information Technology (3) V 2 hrs. lecture; 2 hrs. lab. Broad introduction to the vast array of information technologies as well as a survey of the global, ethical, political, cultural, social, and environmental issues raised by information technology; building skills in integrating information technologies into a workforce curriculum.

4281 Foundations of Distance Learning (3) V Prereq.: HRE 1101 or 3117. Overview of the theories, models, and systems of distance learning; focus on understanding the foundations of distance learning, the design and delivery methodologies, and the role of the instructor and learner.

4283 Advanced Distance Learning Strategies (3) V Prereq.: HRE 2911. Overview of the theories and practices surrounding online interaction environments; focus on understanding the community development and sustainability required for success online learning.

4464 Adult and Nonformal Home Economics Education (3) 2 hrs. lecture; 2 hrs. lab. Working with adults and youth in community agencies and other programs with clientele outside the formal school system.

4504 Youth Leadership Development (3) V Principles and practices in planning, organizing, and conducting youth organization activities.

4571 Technology in Human Resource Development (3) V Survey of the use of computer, information and telecommunication technology in human resource development; emphasis on the analysis, design, development, implementation, evaluation, and management of human resource development technology intervention in the workplace.

4573 Managing the Human Resource Development Function (3) V Study of human resource development (HRD) in organizations with employees on practical applications of leadership, human resource management, and administration of the HRD function.

4575 Ethical and Legal Issues in Human Resource Education (3) V Ethical and legal issues and problems faced by human resource development professionals practicing in public and private sector organizations.

4579 Training in Global Organizations (3) V Introduction to global organizations and models of cross-cultural competence and cross-cultural training; focus on the nature, content, and function of cross-cultural training in organizations.

4585 Consulting in Organizations (3) V Practical look at the skills to be an effective internal or external consultant in organizations; emphasis on consulting process rather than any specific consulting expertise.

4601 Workforce Education Learner Assessment (3) V Assessment of progress of workforce education students in psychomotor, organizational, and group study skills.


4604 Field Experiences in Human Resource Classroom Management (1) V Prereq.: concurrent registration in or credit for HRE 3602 and 3603. Observation and evaluation of classroom management techniques.

4704 Tools and Techniques in Home Resource Education (3) V Methods of planning and procedures for using time efficiently in conducting the human resource education process.

4705 Education, Business, and Entrepreneurship (3) V Principles and strategies involved in establishing and operating small businesses; emphasis on resources available to the educator in bridging the gap between business and entrepreneurship.

4723 Advanced Leadership Development (3) V Prereq.: HRE 2723 and 3723. An honors course, HRE 4724, is also available. Faculty are responsible to the student of skills and strategies which faculty are responsible to the student to develop leadership skills.

4724 Honors Teachership Development (3) V Prereq.: HRE 2724 and 3724; Honors College students only. Same as HRE 4724 with special honors emphasis.

4801 Teaching Internship: Professional (3) V Prereq.: concurrent registration in HRE 4802 and 4803. Permission of instructor. Not for graduate credit.

4802 Internship: Preparation (3) V Prereq.: concurrent enrollment in HRE 4801 and 4802. Permission of instructor. Not for graduate credit. Evaluation of student's ability to function in instructional laboratory; development of curriculum materials for organizing and evaluating the teaching environment.

4803 Internship: Delivery (3) V Prereq.: concurrent enrollment in HRE 4801 and 4802. Permission of instructor. Not for graduate credit. Evaluation of the student's lesson preparation, demonstration ability, laboratory supervision, participation in class activities, and evaluating teaching environment.

4804 Professional Development Internship (3-12) F,S,Su May be taken for a max. of 12 sem. hrs. of credit for graduate credit. Permission of instructor. Students are mentored in the business community as they learn various skills that would make them highly employable.

4805 Making the Transition to Work (1) Course is taken in conjunction with an internship, practicum, or other work experience. Introduction to the skills needed to successfully make the transition from college to career life; emphasis on the skills needed to quickly learn how to be a top performing new employee and avoid typical mistakes college graduates make as new employees.

4809 Advanced Problems in Human Resource Education (1-3) F,S,Su May be taken for a max. of 6 sem. hrs. of credit. Permission of instructor. Individual and group problems.

4819 Special Topics in Agricultural Education (1-3) V May be taken for a max. of 6 sem. hrs. of credit when topics vary. Individual and group study of selected topics under the direction of a faculty member.

4849 Special Topics in Industrial Education (1-3) V May be taken for a max. of 6 sem. hrs. of credit when topics vary. Permission of instructor. Individual and group study of selected topics under the direction of a faculty member.

4869 Special Topics in Home Economics Education (1-3) V Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Current practices and technological advances in vocational home economics.

7001 Principles of Human Resource Education (3) V Principles of workforce education and development programs conducted by business, industry, government, and educational institutions in relation to adult education, career/technical education, human resource development, career development, general education, and social equity.

7003 Philosophy of Human Resource Education (3) V Major philosophies that have influenced human resource education; philosophical approaches to problems in human resource education.

7016 Foundations of Agricultural Education (3) V Events and organizations that contributed to the development of agriculture.

7024 Comparative Extension Education (3) V Prereq.: HRE 7222 or equivalent. Comparative analysis of systems of extension education on a world-wide basis.

7025 Advanced Adult Learning Theory and Practice (3) V Advanced study of adult learning theory and research; emphasis on learning theory and research in adult learning with implications for adult learning practice.

7041 Foundations of Industrial Education (3) V History and philosophy of industrial arts/technology education and vocational trade and industrial education.

7056 Foundations of Business Education (3) V Historical foundations of relevant state and local legislation; organization and administration of business education in public secondary education.

7100 Advanced Instructional/Curricular Design in Human Resource Education (3) V Introduction to the theory, principles, research, and practices that contribute to the body of knowledge of instructional design and instructional design for human resource development.

7112 Program Development in Agricultural Education (3) V Development of curriculum; organization and use of committees; organization of facilities; utilization of the FFA in instruction.

7122 Program Development (3) V Concepts relating educational planning, planned change, and social change to development of effective extension education programs.

7142 Program Development in Industrial Education (3) V Program research, development, evaluation, and implementation.

7171 Instructional Design for Human Resource Development (3) V Comprehensive introduction to the theory, principles, research, and practices of instructional systems design (ISD) in human resource education (HRD) and training.

7242 Programmed Instruction (3) V Prerequisites: instruction. emphasis on methods and application of instruction and development of effective instruction.

7162 Program Development in Home Economics Education (3) V Principles and applied practices in developing programs in home and family life education for multicultural groups.

7201 Advanced Teaching Techniques in Human Resource Education (3) F,S,Su Principles underlying the human resource teaching/learning process; use of effective human resource teaching methods and strategies.

7202 Systems of Teaching and Learning Styles (3) V Analyzing how individuals perceive and process information; interrelationships with personality, leadership, management, supervision, administration; applications in education, business, industry, formal and nonformal settings.

7233 Discipline in Human Resource Education (3) V Prevention, recognition, and handling of classroom discipline problems; emphasis on models of discipline and implications for classroom discipline.

7275 Teaching in Higher Education (3) F,S,Su Methodology for effective college teaching; student motivation; planning for instruction, delivery, and evaluation.

7213 Pedagogical Advances in Agricultural Education (3) V Development in education; impact on agricultural education.

7218 Teacher Education (3) V Development and function of the comprehensive agricultural teacher education program.

7222 Principles and Practices of Extension Education (3) V Prereq.: HRE 7122 or equivalent. Learning and teaching concepts applied in the execution of an extension educational program.
2725 Improvement of Instruction in Keyboarding, Word Processing, Shorthand, and Clerical Problems (3) V Techniques and strategies related to the teaching of clerical skills.

2756 Improvement of Instruction in General Business Accounting, and Bookkeeping (3) V Techniques and strategies related to the teaching of accounting and general business.

2757 Reading Learning in Human Resource Development (3) S Principles, research, and practices of facilitating learning in human resource development (HRD) including facilitation skills for traditional classroom training, as well as informal work-based learning strategies.

2761 Orientation to the World of Work (3) V See ELRC 7630.

2784 Human Resource Education for Special-Needs Students (3) Su Regulations, issues, assessment, instruction, and special problems in human resource education for learners with special needs.

3322 Educational and Occupational Information (3) V Also offered as ELRC 7332. Classification and analysis of educational and occupational information; occupational trends and surveys; use of occupational information by teachers, guidance counselors, and others.

3734 Vocational Counseling (3) V See ELRC 7334.

3792 Advanced Vocational Counseling (3) V See ELRC 7392.

3798 Field Experiences in Vocational Counseling (3) V See ELRC 7398.

7041 Administration of Adult Human Resource Education (3) F, Su Role of adult education as a component of vocational education in contemporary society; program conceptualization, needs assessment, program initiation, development, financing, administration, and evaluation.

7414 Andropogy in Agricultural Education (3) V Principles and practices in conducting the adult agricultural education program.

7511 Performance and Needs Analysis in Human Resources Development (3) F Theory and principles used in the analysis of needs of groups and individuals; emphasis on the application of performance theory and use of tools and techniques for analyzing organizational, process, and individual level performance problems.

7533 Strategic Human Resource Development for Global Organizations (3) V The phenomenon of globalization and its impact on the problems, practices, programs, theories, and methodologies used by human resource development to improve performance in work systems.

7575 Managing Change in Organizational Systems (3) S Introduction to the theory, methods, and practice of organizational change and development; emphasis on the role of the HRD practitioner as change agent and the interventions used to lead and manage organization change.

7602 Program Evaluation Design (3) S Systematic application of program evaluation procedures for evaluating the conceptualization, design, implementation, and utility of vocational educational programs.

7622 Evaluation Methods (3) F Concepts and principles of evaluation applied to programs in extension education.

7662 Program Improvement in Home Economics Education (3) Principles and procedures for evaluating and improving home economics programs for diverse groups.

7701 Organization and Administration of Workforce Education (3) V Principles of organization, leadership, and administration; development of skills needed for effective workforce education leadership.

7702 Supervision in Human Resource Education (3) Su Principles of supervisory behavior; development of skills needed for effective workforce education leadership.

7783 Supervision of Professional Field Experiences in Human Resource Education (3) V Philosophy, principles, and procedures in supervision of student teaching in human resource education.

7786 Organization, Administration, and Supervision of Agricultural Education (3) V Theory, principles, and practices of organization and supervision of vocational teaching.

7723 Leadership and Organization (3) S Application of relevant leadership theory, group dynamics, social organization, and organizational administration to problems of organizing extension education programs.

7725 Leadership Development Strategies in Organizations (3) V Introduction to the major strategies used for developing leaders in organizations; emphasis on learning theories for leadership development, formal training, situational job experience, feedback intensive programs, and skill-building programs.

7741 Administration and Supervision of Vocational Technical and Industrial Education (3) F Theoretical, theoretical, and operational considerations in administering and supervising secondary and post-secondary vocational technical and industrial education and staff.

7766 Home Economists in Higher Education (3) Goals and objectives of home economics; program development; roles and responsibilities of faculty.


7803 Independent Study in Human Resource Education (1-3) F, Su Permission of instructor. May be taken for a max. of 3 sem. hrs. credit when topics vary. Faculty directed study of relevant topics in workforce education.

7805 Seminar in Human Resource Education (1-6) F, Su May be taken for a max. of 6 sem. hrs. credit when topics vary. Selected topics of interest to human resource education.

7809 Practicum for the Human Resource Educator (3-9) S, F, Su PreReq.: permission of instructor. Practical experience under the guidance of practicing vocational educators in various settings.

7812 Technological Advances in Agricultural Education (3) V Scientific developments in agriculture; their impact on program direction.

7816 Advanced Agricultural Education Seminar (1) V May be taken for a max. of 3 hrs. of credit. A minimum of 1 sem. hr. required at master's level; minimum of 2 sem. hrs. required at the doctoral level. Current professional educational problems in vocational agriculture.

7822 Advanced Extension Education (3) S Integration of relevant concepts, principles, and research findings in program development and organization, learning and teaching, and evaluation.

7824 Independent Study in Extension Education (3) V May be taken for a maximum of 6 hrs. of credit. Permission of instructor. Independent study under the guidance of the graduate faculty.

7826 Seminar in Extension Education (1) V May be taken for a maximum of 2 hrs. of credit. The academic credit and student-faculty exchange of ideas on research and issues.

7848 Special Topics in Industrial Education (1-3) V May be taken for a max. of 6 sem. hrs. Permission of instructor. Independent or group study under the direction of the graduate faculty.

7862 Current Problems in Home Economics Education (3) V Study of social, legislative, and educational problems.

7866 Seminar in Home Economics Education (1) May be taken for a max. of 6 sem. hrs. of credit. A minimum of 1 sem. hr. required at master's level; minimum of 2 sem. hrs. required at the doctoral level. Current professional educational problems in vocational agriculture.


7873 Advanced Theory in Human Resource Development (3) S Doctoral seminar. Contemporary theory, research, and leading issues in the field of human resource development.

7901 Scientific Methods in Human Resource Education (3) V Principles involved in formulating educational problems, hypotheses, research strategies; historical, descriptive, experimental, and research methodologies.

7903 Survey Research Design and Implementation (3) Su Prerequisites: HRE 7901 or equivalent. Survey and correlational research in vocational education; emphasis on selection and/or development of appropriate measuring devices.

7905 Advanced Research Design (3) V Prerequisite: HRE 7901 or equivalent. Research design; emphasis on research concepts and procedures and their application to extension education.

7909 Application, Interpretation, and Reporting of Research Results (3) V Prerequisites: HRE 7901, 7905 or equivalent. Selection of appropriate statistical techniques and interpretation of results.

7973 Data Collection and Analysis in Organizations (3) S Introduction to the principal methods of collecting, analyzing, and interpreting data in organizations for the purpose of informing actions and decisions related to human resource management.

8000 Thesis Research (1-12 per sem.) S, U, U+ grading. Permission of instructor.

8009 Research Problems (1-6) Prerequisites: HRE 7902 and a basic graduate-level statistics course. May be taken for a max. of 6 sem. hrs. of credit. Permission of instructor. Research problems in programming, teaching, leadership, organization, and administration.

9000 Dissertation Research (1-12 per sem.) S, U, U+ grading. Permission of instructor.

INDUSTRIAL ENGINEERING • IE

1002 Industrial Engineering Fundamentals (3) S; Design: introduction to computer science; introduction to the profession.

1060 Introduction to the Use of Computers (3) Prereq.: eligibility to take MATH 1300 or equivalent; or credit in MATH 1300. Programming languages and computer hardware; Principles of digital programming; application of subroutines; application of electronic computers to engineering problems; OS operation, Microsoft Office, and Groupware.

1201 Principles of Engineering Economy (3) Planning economy studies for decision making, including considerations of life and cost, cost and yield studies, depreciation, and tax relationships, increment costs, replacement, and introduction to multivariate alternative studies.

1302 Engineering Statistics (3) Prereq.: grade of C or better in MATH 1322 and PHYS 2101. Probability, discrete and continuous distributions, functions of random variables, estimation theory, tests of hypotheses including goodness-of-fit and independence.

1520 Supply Chain Logistics 1 (3) Prereq.: IE 1002, MATH 2090, and grade of C or better in IE 3302. Introduction to Supply Chain and Production Systems. Optimization and modeling in logistics control; Fundamentals of production control in supply chains, forecasting, capacity planning, and inventory control.

1562 Advanced Engineering Statistics (3) Prereq.: grade of C or better in IE 3302. Linear regression and correlation, curvilinear regression, analysis of variance, and factorial experiments.

4425 Information Systems Engineering (3) Prereq.: IE 2960, 2 hrs. lecture; 3 hrs. lab. Analysis and design of information systems; projects relating comprehensive computer systems to typical industrial and service applications; ethics and professional responsibilities.

4426 Distributed Information Systems Engineering (3) Prereq.: IE 4425 or equivalent. 2 hrs. lecture; 3 hrs. lab. Interfacing programs to databases; analysis and development of computer-based decision support systems for industrial and business settings; interfacing databases and industrial applications to the Internet; analysis, design, and implementation of industrial and business networks.

4453 Quality Control & Six Sigma (3) Prereq.: grade of C or better in IE 3302. Principles and practice of quality assurance and control; theory of statistical sampling and control and related economic analysis; Quality Systems; Six Sigma principles and practice.

4461 Human Factors Engineering (3) Prereq.: senior standing. 2 hrs. lecture; 3 hrs. lab. Human performance in human-machine systems, including information processing, display and control design, workplace design, and environmental effects on worker performance.

4462 Safety Engineering (3) Occupational safety and health and accident prevention management; design and implementation of safety programs; cost analysis; control of hazardous physical and environmental conditions.

4463 Fundamentals of Industrial Hygiene Engineering (3) Prereq.: senior standing. Basic principles of chemical hazards, air contamination, ionizing and nonionizing radiation, sound and vibration, and thermal stresses; theoretical foundation and application of theory in the control of occupational health hazards.

4465 Biomechanics for Engineers (3) See IE 4423.
4470 Knowledge-Based Systems in Engineering (3) Prereq.: IE 4425 or equivalent; computer experience; 2 hrs. lecture; 3 hrs. lab. Tools and techniques of knowledge-based expert systems as applied to engineering problems; includes systems building tools; state-of-the-art engineering expert systems.

4480 Manufacturing Automation (3) Prereq.: IE 3201 and ME 3633; 2 hrs. lecture; 3 hrs. lab. Application of computer-based control and software technology to manufacturing automation; programming of numerically controlled machine tools using Compact II and APT; robotics with teach pendant and simulation linkages; NC programming using CAD/CAM; computer-automated part programming.

4485 Systems Integration in Manufacturing (3) Prereq.: IE 4606; ME 3959; 3 hrs. lab. Principles and application of information technologies to monitoring, control, and integration of manufacturing operations; I/O and process control.

4490 Engineering Maintenance Management (3) Prereq.: IE 1002, 3302, and credit or registration in IE 4532. Design, operation, and monitoring of a system to efficiently control maintenance costs; maintenance organization and systems, preventive maintenance, maintenance planning and scheduling, maintenance work measurement, labor performance measures, and spare parts.

4516 Plant and Systems Design (3) Prereq.: IE 3201, 3520; grade of C or better in IE 3520; CM 2141; and senior standing in engineering. Machine loading, assembly balancing techniques, design of physical-manufacturing systems, integrating materials-handling systems with design of plant service systems, site and plant location, and projects involving plant design using optimization techniques; ethics and professionalism.

4520 Supply Chain Logistics II (3) Prereq.: grade of C or better in IE 3520. Supply chain management; supply chain modeling and design; distribution systems; transportation systems; supply chain information technologies.


4540 Reliability Engineering (3) Prereq.: IE 3302. Reliability in design, reliability models; reliability assessment during pre-production development and testing; and special problems in maintenance, spare parts, and Markov processes.

4599 Industrial Engineering Senior Design Project (3) Prereq.: IE 4425, 4435, 4436, 4520, 4530 and ME 3633; consent of department. Must be taken during the last semester of undergraduate study. For December graduates, must be taken in fall semester immediately prior to graduation; for spring or summer graduates, must be taken in the spring semester immediately prior to graduation. Students not meeting this requirement will be dropped from the course. Application of previous industrial engineering courses in a comprehensive design project; preparation for the FE exam in industrial engineering.

4705 Special Topics in Industrial Engineering (3) Prereq.: senior standing and consent of department. May be taken for a max. of 6 hrs. of credit when topics vary. Two sections may be taken concurrently if topics vary. Topics in industrial engineering not sufficiently covered in other undergraduate courses.

7201 Advanced Engineering Economy (3) Prereq.: IE 3200 or equivalent; economic analysis, multiple project constraints and computer use of linear programming to determine optimal order of projects. Value of intangible factors, social costs, and environmental impacts.

7211 Project Engineering (3) Prereq.: IE 3200 or equivalent. Large-scale engineering construction or development projects from schematic to executive design.

7382 Probability Theory in Engineering (3) Prereq.: IE 4182 or equivalent. Random variables and their functions; transformation of random variables; sets of random variables and random sequences; expectation, special distributions, recursive and continuous Markov processes, birth and death processes, and waiting line theory.

7408 Industrial Systems Simulation (3) Prereq.: IE 4303 or equivalent. Development and application of simulation models for industrial systems including advanced techniques for random number generation, random variate generation, design and analysis of experiments, and variance reduction techniques.

7425 Advanced Information Systems Engineering (3) Prereq.: IE 4425 or equivalent; 2 hrs. lecture; 3 hrs. lab. Advanced concepts of information systems engineering with emphasis on middleware architectures/technologies for integrating databases; design issues and methodology for developing and implementing distributed information systems; and design and implementation of data-warehouse systems and on-line analytical processing (OLAP) systems.

7453 Advanced Quality Control (3) Prereq.: IE 4435 or equivalent. Advanced procedures of statistical quality control, statistical analysis of quality control data, economic aspects of quality assurance, human element in quality control, and relationship of quality control to productivity and to ability of American product to compete in world markets.

7461 Ergonomics in Work Design (3) Prereq.: IE 4461 or equivalent; 2 hrs. lecture; 3 hrs. lab. Introduction to anthropometry, functional anatomy and physiology, and their application in work design and task assessment.

7463 Industrial Hygiene Engineering (3) Prereq.: IE 4483 or consent of instructor. Evaluation and control of industrial environments; noise and vibration, industrial illumination, radiation, thermal stresses, air quality and contamination; design of ventilation systems.

7464 Work Physiology (3) Prereq.: IE 4461 or equivalent. Study of worker's physiological responses (cardiovascular, pulmonary, muscular) to work applicable to task design and evaluation, employee selection and placement, and work design.

7465 Occupational Biomechanics (3) Prereq.: IE 4461 or equivalent; 2 hrs. lecture; 3 hrs. lab. Principles of biomechanics applied to human movement; applications to work systems such as manual materials handling and tool design.

7466 Human Interaction with Computers (3) Prereq.: IE 4461 or IE 4466 or equivalent. Ergonomics of the use of interactive computer systems; general characteristics and requirements of people-oriented computer systems from the perspective of different disciplines and tasks, e.g., text editing.

7470 Artificial Intelligence Manufacturing Systems (3) Prereq.: IE 4425 or equivalent. Application of artificial intelligence tools and techniques to computer integrated manufacturing systems including maintenance, product design, process planning, factory scheduling and control, robotics, and intelligent system control.

7480 Automation and Computer-Aided Manufacturing (3) Prereq.: IE 3201 and MATH 1552, or equivalent. Automated flow-line control, industrial robots, computer-aided manufacturing, process monitoring and control, group technology, flexible manufacturing systems, cell and line design, and system control.

7485 Advanced Microcomputer Applications (3) Prereq.: IE 4485 or equivalent; 2 hrs. lecture; 3 hrs. lab. Advanced topics in microprocessors/microcomputer control in manufacturing; input/output design; interfacing; hardware and software considerations.

7490 Advanced Maintenance Management (3) Prereq.: IE 3520 and 4990 or equivalent. Statistical and operations research applied to maintenance management.

7540 Advanced Reliability Engineering (3) Prereq.: IE 4540 or equivalent. Analysis of reliability, maintainability, and availability of large production facilities, applications to a variety of manufacturing environments.

7541 Linear Programming Algorithms (3) Prereq.: IE 3520 or equivalent. Optimization of linear objective functions subject to linear constraints; vector spaces, convex analysis, polyhedral sets; matrix versions of simplex, revised simplex, bounded variables; duality theory and primal-dual simplex algorithms; postoptimal and parametric analysis; decomposition, and cutting plane algorithms.

7551 Queuing Theory (3) Prereq.: IE 3520 or equivalent. Fundamentals of queuing theory. Application of queuing and limiting behavior, measures of effectiveness, birth and death processes, single and multi-queue systems, priorities, batching, batch arrivals, and services; matrix representation of certain queuing systems; applications, stochastic inference, design and control of queues.

7651 Programming Methods in Operations Research (3) Prereq.: IE 3520 or equivalent. Development and application of advanced programming methods for unconstrained and constrained problems; development of goal, zero-one, gert, and multi-objective programming with application to industrial processes and planning.

7652 Network Modeling and Optimization (3) Prereq.: IE 3520 or equivalent. Network analysis; shortest path algorithms, minimal network flows, transportation and assignment problems, transhipment problems, optimal network flows, out-of-kilter algorithm, maximal flow algorithms, single and multiple commodity flows; applications to manufacturing and service industries.

7640 Equipment Failure Analysis and Prevention (3) Prereq.: credit or registration in IE 4540 or equivalent. Analysis, monitoring, and prevention of failures in industrial equipment; failure mechanisms; failure analysis techniques; Weibull failure analysis techniques; and failure management.

7642 Administration of Engineering and Technical Personnel (3) Prereq.: content of instructor. Also offered as CHE 5302. Problems encountered by engineering personnel and supervisors of engineers and technical personnel; human relations; engineer as leader, supervisor, and administrator; wage and salary administration.

7645 Management of Technology (3) Cross-listed with MGT 7001. Importance of technology management to state, region, nation, company, industry; management of R&D and product development processes; impact of technology on business plans; differences between invention, innovation, and role of entrepreneur.

7726, 7721 Industrial Engineering Problems (1-3, 1-3) Prereq.: consent of department. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Special topics courses or independent study based on student interest in specialized industrial engineering areas such as design and analysis of complex production and supply-chain control, maintenance, quality control, and reliability; ergonomics and human/computer interaction.

7761 Production Planning and Control (3) Prereq.: IE 4520 or 4530 or equivalent. Deterministic and probabilistic inventory models, static and dynamic models for production planning; multi-echelon systems; sequencing and scheduling; line balancing and workforce scheduling.

7762 Supply Chain Systems (3) Prereq.: IE 3520 or 4520, or equivalent. Components in supply chain systems; product life-cycle modeling, rotational production and supply, integrated component supply systems, multi-source supplier systems, just-in-time and supply chain systems, warehousing and distribution systems, supply transportation system, and information technology for supply chain systems.

7765 Lean Production Systems (3) Prereq.: IE 3520 or 4520, or equivalent. Principles and components of lean production systems; manufacturing, design, and operations research; assembly line design; process flow analysis; resource reduction; market characterization, logistics information and error propagation; reduction of work-in-process, waste reduction, zero inventory and just-in-time production systems; material flow control; process and operational variability reduction; role of buffers and process stabilization.

7768 Sequencing and Scheduling (3) Prereq.: IE 3520 or 4520 or equivalent. Measures of scheduling; deterministic models for single and parallel machines; job shops, flow shops, and open shops; stochastic scheduling models for machines, job shops, flow shops, and open shops; computational complexity and industrial applications.

7775 Design of Manufacturing Systems (3) Prereq.: IE 3520 or 4520, or equivalent. Principles in modeling, analysis, design, and operations; mass production, cellular manufacturing, machine location and layout; job routing and load balancing strategy; material handling and storage/retrieval systems.

7899 Seminar (1) All industrial engineering graduate students are expected to take at least one 1 hr. seminar. Study of 1 sem. hr. of credit allowed toward degree. Pass-fail grading. 8000 Thesis Research (1-12 per sem.) "S"/"U" grading.
INFORMATION SYSTEMS AND DECISION SCIENCES • ISDS

1100 Introduction to Management Information Systems (3) Prereq.: 1 hr. lecture; 4 hrs. lab. An honors course, ISDS 1101, is also offered but will not be given for both this course and ISDS 1100. Examines the expanding role of information technology in organizations including the development and use of information systems, hardware, and software; the strategic impact of IT, and the nature of the IT career; utilization of management information systems to improve managerial decision making.

1101 HONORS: Introduction to Management Information Systems (3) Same as ISDS 1100, with special honors emphasis for qualified students. Credit will not be given for both this course and ISDS 1100.

1102 Introduction to Management Information Systems for Business Majors (3) Role of information technology in the management of organizations with an emphasis on hardware, software, and the strategic impact of IT for businesses, and the nature of the IT career; utilization of management information systems to improve managerial decision making.

2000 Introduction to Business Statistics (3) Prereq.: MATH 1431 or equivalent. An honors course, ISDS 2010, is also available but will not be given for both this course and ISDS 2010. Statistical description and inference; descriptive statistics, sampling, basic probability theory; probability distributions, including normal and binomial; sampling distributions; inferential statistics including estimation, one- and two-sample hypothesis tests for means and proportions; contingency tables; introduction to hypothesis testing; simple correlation; analysis of variance; nonparametric tests.

2011 Statistical Methods and Models (3) Prereq.: ISDS 2000 or equivalent. Continuation of ISDS 2000. An honors course, ISDS 2111, is also available. Credit will not be given for both this course and ISDS 2011. Advanced statistical methods and decision models including ANOVA and linear regression analysis; management science models such as utility functions, decision analysis, mathematical programming, waiting line models and simulation.

2010 HONORS: Introduction to Business Statistics (3) Same as ISDS 2000, with special honors emphasis for qualified students. Credit will not be given for this course and ISDS 2000.

2011 HONORS: Statistical Methods and Models (3) Same as ISDS 2011, with special honors emphasis for qualified students. Credit will not be given for this course and ISDS 2011.

3000 Statistical Methods and Models III (3) Prereq.: ISDS 2001. Continuation of ISDS 2001. Statistical inference; additional applications of sampling distribution; the chi-square, student's t, and F distributions; estimation; hypothesis testing; linear regression; simple correlation; analysis of variance; nonparametric tests.

3070 Independent Reading and Research in Information Systems and Decision Sciences (1-6) Prereq.: ISDS 3100 and consent of instructor. May be taken for a max. of 6 cr. Honors student is responsible for registering with a faculty member and selecting an area of reading and/or research.

3075 Internship in Information Systems and Decision Sciences (3) Prereq.: permission of instructor and department chair required. Pass/fail grading. At least the equivalent of 144 hours per semester (3 credits) of learning experience in information systems under the general supervision of an ISDS faculty member and direct supervision of an information systems or decision sciences professional. Grading based on the faculty member's evaluation, a written report by the professional supervisor, and a written report by the student.

3100 Management of Information Resources (3) Prereq.: ISDS 2100 or equivalent. Information resources as a resource; issues in information resource management; elements of information systems; development and maintenance of information systems; controlling information resources.

3105 Internet Development Tools (3) Prereq.: ISDS 1100 or equivalent. Understanding of the Internet and its structure for use in business; technologies employed to develop Internet applications; development of business applications for the Internet.

3107 Beginning Programming (3) Prereq.: ISDS 1100. Fundamentals of programming, program design, application development interfaces, debugging, testing, and implementation.

3110 Database Processing for Management (3) Prereq.: ISDS 4115 or equivalent. Structure and function of relational database management systems; database design and implementation of database management systems in the firm; laboratory practice includes use of a particular software system.

3115 Introduction to Operations Management (3) Prereq.: ISDS 2001 or equivalent. An honors course, ISDS 3117, is also offered but will not be given for both this course and ISDS 3117. Principles and methodologies concerning productivity and quality of manufacturing and service organizations; production and service systems design; process and capacity design; total quality management; systems for just-in-time and purchasing management; inventory and materials management.

3117 HONORS: Introduction to Operations Management (3) Same as ISDS 3115, with special honors emphasis for qualified students. Credit will not be given for this course and ISDS 3115.

3120 Management of the IT Function (3) Issues in managing the Information Technology (IT) function, including the discussion of how technology has underpinned the “new Economy,” formulating an IT strategy, structuring and managing the IT function, and emerging trends in IT.

3200 Advanced Business Programming (3) Prereq.: ISDS 3107 and ISDS 3110. Computer programming methods for building contemporary programming environments and applications development interfaces.

4000 Introduction to Statistical Theory (3) Prereq.: proficiency in calculus and one of MATH 1552, or consent of instructor. Concepts of probability distribution and statistical inference; theoretical foundations for estimating and testing hypotheses about means, proportions, and variances; chi-square and F tests.

4010 Basic Forecasting Models (3) Prereq.: ISDS 3000 or equivalent. Single-equation multiple regression and time series modeling; procedures for business and economic forecasting; using time series data in regression models; time series modeling, including classical decomposition procedures and exponential smoothing; use of computer programs for regression and time series modeling and forecasting.

4011 Sample Survey Methods (3) Prereq.: ISDS 3000 or equivalent. Designing sampling systems; alternative sample designs; problems of bias; techniques of inference from alternative designs; criteria for selecting optimal sampling plans; methods and applications of sample surveys.

4012 Applied Nonparametric Statistics (3) Prereq.: ISDS 3000 or equivalent. Applied nonparametric statistics including nonparametric tests, comparison of two treatments, paired comparisons, randomized complete blocks, comparison of more than two treatments, tests of randomness and independence, and measures of correlation.

4013 Bayesian Probability and Statistical Methods (3) Prereq.: ISDS 3100 or equivalent. Concept of subjective probability distributions; Bayesian estimation and inference; application of Bayesian techniques to business problems.

4020 Operations Research for Managerial Decisions (3) Prereq.: ISDS 2001 or equivalent. Managerial decision making, including decision analysis, linear programming, transportation models, integer programming, project scheduling, and waiting line models; basic understanding and evaluation of operations research techniques.

4021 Foundations of Mathematical Programming (3) Prereq.: credit or registration in ISDS 4010. Theoretical foundations of linear programming in single and multiple objectives; classical nonlinear optimization of unconstrained problems; convex programming; Karush-Kuhn-Tucker conditions and quadratic programming.

4031 Applied Linear Models (3) Prereq.: ISDS 3000 or equivalent. Development of a unified approach to estimation and hypothesis testing in linear statistical models: emphasis on appropriate specification and interpretation of models and statistical hypothesis; use of available computer routines and interpretation of results; unbalanced analysis of variance models, linear regression models, and analysis of covariance models.

4110 Business Development and Expert Systems (3) Prereq.: ISDS 3110 or equivalent. Laboratory practice includes use of a particular software system. Business decision modeling; constructing a decision support system (DSS); DSS development tools; executive information systems; expert systems (ES) in business; building ES; process, tools, and strategy integration of DSS and ES.

4111 Enterprise Systems (3) Prereq.: ISDS 3100. Overview of key enterprise systems concepts from functional, technical, and implementation perspective; emphasis on the process considered and how integrated systems are designed to support cross-functional business; hands-on computer based exercises involving a hypothesis testing application.

4122 Data Warehousing (3) Prereq.: ISDS 3100. Data Warehouses for business; topics include: top-down design, bottom-up design, data charts, multidimensional data, data mining; Web-enabled data warehouse, knowledge management.

4113 Information Technology Project Management (3) Prereq.: ISDS 3000 or equivalent. Managing effectively managing information technology projects including: setting goals and objectives; work breakdown structures; controls, project and risk management; project life cycle; project planning and control; waterfall and spiral; project status meetings; project risk; quality management; earned value management; project management software packages.

4114 Software Quality Assurance (3) Prereq.: ISDS 3100. Modern practices of software quality management; topics include: software quality metrics, basic quality tools, software reliability models, customer satisfaction measures, and the ISO 9000 quality standard.


4120 Business Data Communications (3) Prereq.: ISDS 3100 or CSC 1350. Telecommunications in business, including hardware and software, types of encryption, cryptographic systems, application security issues, and laws governing security and privacy.

4125 Analysis and Design of Management Information Systems (3) Prereq.: ISDS 3110, 2900. Design philosophies and techniques for the creation of information systems for management decision making; conceptual design of actual information systems.

4141 Introduction to Data Mining (3) Prereq.: ISDS 3100. Fundamental methodology and techniques used in data mining, with particular emphasis on data mining applications; topics include market basket analysis, memory-based reasoning, cluster detection, link analysis, decision trees and rule induction, neural networks, and genetic algorithms.

4160 Sourcing in China (3) Network clusters; cost reduction; negotiation strategy; brand, design, and manufacturing; factory and supply chain audits; protecting intellectual property; vulnerability assessments; global sourcing repositioning; sourcing practices and cases in industries.

4165 Operation of Service and Distribution Systems (3) Prereq.: ISDS 3115. Application of operations management concepts and techniques in service delivery and distribution organizations; service system design and control, including location, layout, capacity expansion, staffing and scheduling; special attention to structure design and operational control of distribution systems and interfaces with other functional areas.

4167 Operations Planning and Control (3) Prereq.: ISDS 3115 or equivalent. Planning and control of operations in manufacturing and service organizations; aggregate planning, master scheduling, requirements planning, and activity control; emphasis on developing planning skills through case studies and computer models.
7543 Electronic Commerce II (1.5) Prereq.: E 3440. Introduction to advanced management issues, organizing principles and technologies; working in electronic communities; newsrooms, virtual communities, extranets and intranets.

7545 Collaborative Computing (1.5) Prereq.: BADM 7050. Foundation of collaborative computing; issues of motivation, synchronicity, anonymity, group size, group productivity, and group tasks.

7560 Enterprise Systems (3) Prereq.: BADM 7050. Study of the broad area of Integrated Enterprise-wide Systems; emphasis on features and capabilities of enterprise systems and their related technologies. Methodologies used to implement these systems in organizations, and the implications of their deployment in organizations.

7583 Business and Systems Change (3) Prereq.: ISDS 7550. Foundation of critical issues in the design and implementation of business and information systems change including business process re-engineering, project and change management, and information systems design and management; emphasis on the systems perspective of business, and the change that these enabling emerging and disruptive technologies and systems permit that have the greatest impact on business and industries.

7555 Auditing Enterprise Systems (1.5) Prereq.: ISDS 7550 and ACCT 7233. Principles of auditing enterprise-wide information systems in business; audit plans; controls and entity issues.

7560 Social and Organizational Issues in MIS (3) Prereq.: BADM 7050. Impact of electronic communities on organizations; implications of design choices on business and technical considerations.

7565 Global Information Technology Management (3) Prereq.: BADM 7050. National IT policies; IT and national culture; IT management in multinational companies; IT diffusion in developed versus developing countries; IT and national development; global electronic commerce; global telecommunications infrastructure; and competitive advantage through global IT management.

7900 Contemporary Issues in Statistics and Management Science (3) Prereq.: advanced PhD study and consent of instructor. Philosophical foundations of science and their implications for contemporary management science.

7910 Contemporary Issues in Production/Operations Management (3) Prereq.: advanced PhD standing or consent of instructor. May be taken for a max. of 9 hrs. of credit when topics vary. Philosophical foundations and contemporary issues in production/operations management.

7920 Contemporary Issues in Management Information Systems (3) Prereq.: advanced PhD standing or consent of instructor. May be taken for a max. of 9 hrs. of credit when topics vary. Philosophical foundations and contemporary issues in management information systems.

7950 Research Seminar in Information Systems Topics (3) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Research and contemporary critical issues in information systems.

7990 Project (3-6) Prereq.: permission of instructor. May be taken for a max. of 6 hrs. of credit. Pass-fail grading.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

8900 Pre-dissertation Research (1-9) May be repeated for credit.

8900 Dissertation Research (1-12 per sem.) "S"/"U" grading.

INTERIOR DESIGN • ID

General education courses are marked with stars (*).

★ 1051 Introduction to Interior Design (3) Contemporary practice of interior design as a profession; responsibilities of the interior designer.

1711 Basic Design Foundation (3) V Prereq.: controlled admission to program in interior design at first year entry level or permission of department. 6 hrs. studio. Credit will not be given for BADM 1051 and ART 1011. Basic design problems with an emphasis on two-dimensional principles and elements; foundation for the graphic exploration and the design process.

1783 Interior Design Technical Drawing (3) F,S,Su-V Prereq.: controlled admission to program in interior design at first year entry level or permission of department. 1 hr. lecture; 4 hrs. studio. Introduction to the graphic tools, techniques and conventions designers use to communicate architectural ideas; an immersion in the graphic language of drawing.

2722 Interior Design Awareness I (3) V Not open to interior design majors. 2 hrs. studio. Expression and analysis of design decisions related to interior space.

2750 Interior Design Studio I (4) F Prereq.: admission to professional program or consent of instructor. Concurrent enrollment in ID 2781. 8 hrs. studio. Basic design problems in the built environment: emphasis on design process, form and principles of spatial organization.

2751 Interior Design Studio II (4) S Prereq.: ID 2750 or equivalent. 8 hrs. studio. Exploration and analysis of design decisions related to interior space.

2770 Color and Illumination I (3) S Prereq.: sophomore standing in the major; nonmajors by consent of instructor only; 1 hr. lecture; 4 hrs. studio. Nature, theory, and art of color and light applied to two- and three-dimensional basic design projects.

2774 Interior Construction and Systems (3) F Prereq.: admission to professional program. Building systems and construction methods; code requirements for interiors.

2775 Interior Materials, Finishes, and Furnishings (3) S Prereq.: ID 2744 or equivalent. Types and sources of materials; finishes and furnishings used in interior spaces.

2781 Interior Design Graphics (3) F Prereq.: admission to professional program. Concurrent enrollment in ID 2750. 6 hrs. studio. Graduate-level methods used to illustrate and investigate form, spatial order, and the design process.

2745 Computer Visualization (3) F,S,Su-V Prereq.: admission to professional program or consent of instructor. Credit will not be given for this course and ARCH 2173, JE 2183, or LA 2183. 3 hrs. lecture; 4 hrs. lab. Computer drafting and three-dimensional modeling for spatial designers.

★ 3741 History of Interior Design and Decoration I (3) F Development of interior design, decoration and furnishings through the early 19th century, design as an expression of cultural values.

★ 3742 History of Interior Design and Decoration II (3) S Design, decoration, and furnishings through the 19th and 20th centuries; social, industrial, and technological influences on modern design.

3751 Interior Component Design (3) F,S,V Prereq.: ID 2751 or equivalent. 1 hr. lecture; 4 hrs. studio. Design, materials, and construction techniques of interior components; scale model and computer simulated design prototypes.

3752 Interior Design Studio III (4) F Prereq.: ID 2751 and ID 2775 or equivalent. 8 hrs. studio. Formulation of design concept/image; design implications of function, space, and scale.

3753 Interior Design Studio IV (4) F,S,V Prereq.: ID 3752 or equivalent. 8 hrs. studio. Design development of interior environments.

3759 Special Studies in Interior Design I (4) F,S,Su-V Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Advanced studio work in predetermined areas of specialization.

3761 Interior Design Internship (3) F,S,Su Prereq.: completion of all 2000-level interior design courses and consent of instructor. Pass-fail grading. At least 20 hours of work per week (33 hours per week in summer session) supervised by an interior design faculty member and a professional designer in an approved firm.

3765 Field Studies in Interior Design I (4) F,S,Su-V Prereq.: selective admission into the professional program in interior design at the sophomore year or permission of the instructor. Intensive travel experiences in a variety of locales; participation in local, national, and/or international journeys with an emphasis on the built environment.

3770 Color and Illumination II (3) F,S,Su-V Prereq.: junior standing in major; nonmajors by consent of instructor only; 1 hr. lecture; 4 hrs. studio. Quantitative and qualitative aspects of color light; application to interior design.

3782 Interior Design Construction Documents (3) Prereq.: ID 2751 or equivalent. 1 hr. lecture; 4 hrs. studio. Development of construction documents for interior projects; design and documentation of interior architectural details.

3786 Advanced Computer Visualization (3) F,S,Su-V Prereq.: admission to professional program or permission of instructor. 1 hr. lecture; 4 hrs. lab. Advanced topics in computing, drafting and three-dimensional modeling for spatial designers.

4720 Seminar in Interior Design (3) F Prereq.: ID 3752 or equivalent. Research, discussions, and presentations related to contemporary issues in interior design. Preparation: principles presented in historical and philosophical contexts; analysis of the use of spatial elements.

4754 Interior Design Studio V (4) F Prereq.: ID 3753 or equivalent. 8 hrs. studio. Advanced application of the design process; development of comprehensive solutions to complex interior design problems.

4755 Interior Design Studio VI (4) S Prereq.: ID 3745 or equivalent. 8 hrs. studio. Concurrent enrollment in ID 4756. Design synthesis in a comprehensive capstone project.

4756 Independent Study Project (3) S Prereq.: ID 4720. Concurrent enrollment in ID 4755. 5 hrs. studio. Execution of a project selected by the advanced student with guidance from an advisory committee.

4758 Advanced Studies in Interior Design I (4) F,S,Su-V Prereq.: consent of instructor. Advanced studio work in a predetermined area of specialization at upper level status.

4761 Professional Practice (3) S Prereq.: senior standing in the major or consent of instructor. Entering the profession; interior design business practices, ethics and project management.

INTERNATIONAL STUDIES • INTL

2000 Contemporary Global Issues (3) Survey of current world issues from an interdisciplinary perspective.

3001 Gateway to International Studies (3) Prereq.: ANTH 1053 or ARTH 1103, HIST 1507, POLI 2097. Required for all international studies majors. Modernity, colonialism, and globalization in regional perspectives.

3002 Independent Study in International Studies (3) May be taken for a max. of 6 hrs. of credit when topics vary. Independent study relevant to the field of international studies.

3992 Fundamentalisms and Religious Nationalism (3) See REL 3992.

3999 Undergraduate Internship in International Studies (3) F,S,Su. Open to undergraduate students approved by the International Studies Program. May be counted toward the total number of hours required for a major in International Studies but not toward fulfilling field requirements. May be taken for a max. of 6 hrs. of credit when topics vary. Program of study, research, and work in governmental or private agencies concerned with international policy.

3786 Religion of Islam (3) See REL 3786.

3991 Study Abroad in Africa (1-6) May be repeated for up to 12 hours credit when topics vary. Studies in the history, culture, economics, politics, or geography of Africa.

3992 Study Abroad in the Middle East (1-6) May be repeated for up to 12 hours credit when topics vary. Studies in the history, culture, economics, politics, or geography of the Middle East.

3993 Study Abroad in Asia (1-6) May be repeated for up to 12 hours credit when topics vary. Studies in the history, culture, economics, politics, or geography of Asia.

3994 Study Abroad in Europe (1-6) May be repeated for up to 12 hours credit when topics vary. Studies in the history, culture, economics, politics, or geography of Europe.

3995 Study Abroad in Latin America (1-6) May be repeated for up to 12 hours credit when topics vary. Studies in the history, culture, economics, politics, or geography of Latin America.

3996 Study Abroad in Russia and Central Asia (1-6) May be repeated for up to 12 hours credit when topics vary. Studies in the history, culture, economics, politics, or geography of Russia and/or Central Asia.

4000 International Studies Workshop (3) F For international studies majors in junior or senior year. Prereq.: consent of instructor. Development of research project in international studies—prospectus, annotated bibliography, and research proposal.
2102 Advanced Oral Communication (3)
3058 A History of Geopolitics (3)
4010 A History of Geopolitics (3)
4051 North Africa and the Middle East (3)
5095 The Middle East to 1800 (3)

ITALIAN • ITAL

Native speakers of Italian will not receive credit for courses marked with an asterisk (*).

General education courses are marked with stars (★).

*1001 Elementary Italian (4) F,S Supplementary work in language laboratory. Basic lexicon and structure of Italian; emphasis on communicative language use.
★ 1002 Elementary Italian (4) F,S Prereq.: ITAL 1001. Supplementary work in language laboratory. Basic lexicon and structure of Italian; emphasis on communicative language use.
2002 Italian for Travelers (3) F,S Does not count toward satisfying the foreign language requirement for undergraduate, graduate, or professional students.

JAPANESE • JAPN

Native speakers of Japanese will not receive credit for courses marked with an asterisk (*).

General education courses are marked with stars (★).

*1001 Beginning Japanese (5) Students with prior knowledge of Japanese may not take this course for credit.
★ 1002 Beginning Japanese (5) JAPN 1001 or equivalent; Language laboratory work required. Basic lexicon and structure; emphasis on communicative language use.
3001 Traditional East Asian Literature (3) See CHIN 3801.
3002 Modern East Asian Literature (3) See CHIN 3802.
4015 Independent Work (1-3) F,S,Su May be taken for a max. of 6 hrs. credit. Permission of department. Study of various aspects of the Japanese language and literature.

KINESIOLOGY • KIN

Courses offered are of two types: (1) basic activity courses such as tennis, golf, etc. open to all students of the University; and (2) professional courses in kinesiology. All basic activity courses are offered on a pass/fail grade basis.

BASIC ACTIVITY COURSES

Students in these classes must furnish and wear clothing suitable to the activity.
1123 to 1160 Beginning Courses (1 sem. hr. each) Pass/fail grading.
1123 Archery
1124 Tennis
1125 Golf
1126 Gymnastics
1128 Rifery
1129 Badminton
1130 Bowling
1132 Ballroom Dance
1133 Children's Rhythms For elementary grades, physical education, or special education majors.
1134 International Folk Dance
1135 Golf for Business and Life
1136 Swimming
1140 Scuba Diving Prereq.: KIN 1236 or consent of instructor.
1142 Conditioning Exercises
1144 Aerobics
1146 Weight Training
1147 Chinese Kung Fu
1148 Chinese Self Defense
1150 Recreational Dance

1151 Racquetball
1152 Tai Chi I
1154 Martial Arts
1155 Jogging
1156 Outdoor Living Skills American Red Cross Standard First Aid Certificate recommended.
1157 Aerobic Swimming Prereq.: KIN 1236 or intermediate swimming skills.
1158 Canoeing Prereq.: must be able to swim 50 yards with a personal flotation device; tread water for one minute and swim 50 yards without a personal flotation device.
1160 Adapted Physical Education For students who cannot participate in vigorous physical exercise due to physical disability or other handicapping condition.
1224 to 1257 Intermediate Courses (1 sem. hr. each) Pass/fail grading.
1224 Tennis
1236 Swimming
1248 Aerobic Dance
1246 Weightlifting
1251 Racquetball
1252 Intermediate Tennis
1254 Martial Arts
1255 Jogging
1257 Aqua Swimming
1336 to 1338 Advanced Courses (1 sem. hr. each) Pass/fail grading.
1336 Swimming
1337 Advanced Lifesaving Prereq.: KIN 1236 and 1336 or Advanced Swimming Certificate.
1338 Water Safety Instructor's Course Prereq.: valid Advanced Lifesaving Certificate.

PROFESSIONAL COURSES

In the Department of Kinesiology, the second digit of the course number denotes the area of interest for professional courses; as follows: 4—kinesiology activity for majors; 5—kinesiology theory; 6—health.

1405 Track and Field (1) 1 hrs. lab. For kinesiology majors or minors.
1406 Basketball (1) 3 hrs. lab. For kinesiology majors or minors.
1407 Softball (1) 3 hrs. lab. For kinesiology majors or minors.
1408 Volleyball (1) 3 hrs. lab. For kinesiology majors or minors.
1409 Flag Football (1) 3 hrs. lab. For kinesiology majors or minors.
1410 Field Sports (1) 1 hrs. lab. For kinesiology majors or minors.
1412 Tennis (1) 3 hrs. lab. For kinesiology majors or minors.
1413 Badminton (1) 3 hrs. lab. For kinesiology majors or minors.
1427 Physical Activity I: Volleyball and Basketball (1) For kinesiology majors or minors. 3 hrs. lab. Identification, analysis, and practice of skills and techniques fundamental to volleyball and basketball; rules, strategies, safety.
1460 Personal and Community Health Problems (3) Content and theory related to basic health information; critical health issues; improving and maintaining optimal health and wellness.
1801 Movement Fundamentals for Physical Activity (2)
1 hr. lecture; 2 hrs. lab. For kinesiology majors. Movement concepts associated with space and time and how these concepts can be organized into a learning environment.
1802 Individual/Lifetime Activities (2) 1 hr. lecture; 2 hrs. lab. For kinesiology majors. Identification, analysis and practice of skills, techniques and fundamental concepts associated with lifetime activities.
1803 Team Activities (2) 1 hr. lecture; 2 hrs. lab. For kinesiology majors. Identification, analysis and practice of skills, techniques and fundamental concepts associated with team activities.
1804 Aerobic and Strength Activities (2) 1 hr. lecture; 2 hrs. lab. For kinesiology majors. Major concepts of aerobic and strength training including safety, technique, appropriate activities, and training principles.
1899 Special Topics (1) May be taken for a max. of 4 sem. hrs. credit when topics vary. 3 hrs. lab. Identification, analysis, and practice of skills and techniques fundamental to sports; rules, strategies, and appropriate safety procedures.
2500 Human Anatomy (3) Micro and macroscopic study of the human body.
Amer ican s.  phy si o l og i cal as pe cts of spor t uniqu e to A fric a n A fric a n A mer ican s in spor t an d its l arger ef fect on A fric a n pr omot e h eal th beh av i or ch ange.

PSY C 2000, juni or s tandi ng.  Recom mended: PSY C 3083 that af fect phy si o log i cal w ell-bei ng an d beh av i or or mood;

Harmless , harmful, usef ul, an d u sel ess ch emi cal su bstan ces or gan i za tion an d ad mi n i stra tion of these pr og rams.

as pe cts an d i mpl icat i ons of to bacco, al co hol, dr ugs, 4601 C om m un i ty H e al th I ssues (3)

pro te c ti on ag ainst infect ious di sea ses; phy sical inspec tion of kine matic, kine tic, an d e lectro myo gra phic data man ag emen t, mar ket ing, finan ce an d per son nel admi nistration.

4512 Life span Mo tor Devel opment (3) Analysis of changes in motor behavior from infancy to older adulthood; current the or etical per spects; current i ssues; correlates of motor develop ment.

306 Kinesiology
2201 Landscape History I (3)
Prereq.: Physical education cohort membership or consent of instructor.
Critical theory and research practices in health and physical education.

2202 Research in Health and Physical Education (3)
Prereq.: physical education cohort membership or consent of instructor. Analysis of teacher-researcher literature; its application to teaching health and physical education.

2500 Research Project in Health and Physical Education (3)
Prereq.: physical education cohort membership or completion of KIN 7560 and 7561 or consent of instructor. 2 hrs. lecture; 2 hrs. lab. Development, completion, and presentation of a research problem in teaching health and physical education that grows out of fifth-year clinical experiences and course work.

7601 Changing Health Behavior (3)
Motivation and determinants of health behavior; behavior change strategies designed for utilization in individual and group health education programs; promoting innovative health education programs in schools and the community.

7620 Epidemiological Approach to Community Health (3)
Prereq.: EXST 4091 or equivalent. Vital health statistics via the disease model and its determinants; community organization and program development related to community health education, both qualitatively and quantitatively.

7900 Introduction to Research Methods (3)
3001 Topics in Kinesiology (1-3)
May be taken for a max. of 6 sem. hrs. credits. Topics vary.

8000 Thesis Research (1-12 per sem.) “S”/”U” grading.

8900 Dissertation Research (1-12 per sem.) “S”/”U” grading.

LANDSCAPE ARCHITECTURE • LA

General education courses are marked with stars (∗).

1101 Landscape Representation I (3) 6 hrs. studio.
Freehand and mechanical representation and observational skills utilized for the development of a vocabulary, basic skills, and techniques of landscape architecture representation.

1102 Landscape Representation II (3) Prereq.: LA 1101. 5 hrs. studio. Developing skills in computer-aided visualization and illustrative documentation of landscapes; introduction to digital imaging, drafting, and photo manipulation.

∗1201 Introduction to Landscape Architecture (3)
Introduction to the profession of landscape architecture for non-landscape architecture majors. Overview of professional concerns and responsibilities; awareness of natural and planned landscapes, as well as the importance of using land in an effective and responsible manner.

1202 World Landscape Architecture (3)
Exploration of contemporary landscape design from around the world, including the impacts of local cultures, urban planning, and the relationship between landscape architecture and architecture.

∗1203 Views of the American Landscape (3)
Concepts, patterns, and themes that shape human attitudes and activities concerning the American landscape; natural systems as links between managed landscapes and built environments; environmental factors which contribute to the development of cities from historical to contemporary perspective.

1205 Landscapes for Recreation and Tourism (3)
Development and use of landscapes for recreation and tourism; interrelationships of cultural and natural influences.

2001 Landscape Design I (6) Prereq.: LA 1102. Consent of school director. 12 hrs. studio. Introduction to two- and three-dimensional design; spatial sequence, meaning, and dynamic change; application to a simple design.

2002 Landscape Design II: Site Design (6) Prereq.: LA 2001 or equivalent. 12 hrs. studio. Development of landscape design process as applied to small-scale projects; introduction of earth structures, construction materials, and plants.

∗2003 Landscape Representation III (3) Prereq.: LA 2101 and 1102. 6 hrs. studio. Advanced representation techniques developing skills of visualization and representation using freehand, mechanical, and digital imaging in design projects.

2004 Landscape History I (3) Development of earliest landscape traditions, relationships of humans to landscape in major cultural areas of the ancient world; development of landscape traditions in western Europe and America from the 15th to 19th centuries.

3201 Landscape Technology I: Land Design (3) Prereq.: Minimum of 3202 or equivalent; consent of instructor. 2 hrs. lecture; 2 hrs. studio. Introduction to principles for designing landscapes; surveying systems and legal land description; introduction to landscape architectural construction systems and the relationship among landform/earth, plants, and structures, topographic mapping conventions, grading design, drainage, and water management, roadway design and alignment.

3201 Landscape Ecology (3) Prereq.: GEOG 2051 and RNR 1001 or equivalent. Class includes field trips. Application of ecological principles and relationships to resource management; critical attention to conservation ethics and legal regulations leading to sustainability of the landscape.

3301 Landscape Design III: Site Planning and Design (6) Prereq.: LA 2001 and 2101 and 2201 or equivalent. 12 hrs. studio. Required field trip. Students are responsible for paying travel expenses associated with the course. Arrangement of buildings, circulation, and other landscape design elements; emphasis on earthwork and drainage.

3302 Landscape Design IV: Community Design (6) Prereq.: LA 2101 and 3001. 12 hrs. studio. Landscape planning and design at the community and neighborhood scale; emphasis on transportation systems, infrastructure, green infrastructure, public services, and a mix of housing and commercial types.

3301 Landscape Design I: Planning, Grading, and Roads (3) Prereq.: LA 2201 or equivalent; consent of instructor. 2 hrs. lecture; 2 hrs. studio. Advanced grading, drainage and drainage with emphasis on aesthetic aspects of grading and best management practices and sustainability, landscape architectural systems and infrastructures including advanced roadway design and alignment.

3302 Landscape Design III: Design Detailing (3) Prereq.: LA 3301 or consent of instructor. 2 hrs. lecture; 2 hrs. studio. Relationship between design and implementation through construction processes, detailing as it relates to landscape architectural materials, basic structural theory, detailing and structures, technical specifications as a means of enuring design intent.

3401 Plant Materials I (3) Prereq.: LA 2401 for undergraduate students. 1 hr. lecture; 4 hrs. lab. Identification and study of plant materials with specific recognition of the visual and ecological characteristics of plants used in landscape design.

3402 Plant Materials II (3) Prereq.: LA 3401. 1 hr. lecture; 4 hrs. lab. Identification and study of plant materials LA 3401 with the inclusion of basic principles of planting design.

4001 Landscape Design: Landscape Planning and Development (3) 12 hrs. studio. Landscape planning and development from the regional to the site scale development; emphasis on generating planning and design ideas, urban and green development that are informed by an understanding of the ecology and culture of the region , and based on principles of sustainability.

4002 Landscape Design VI: Specialization (6) Prereq.: LA 4001. 12 hrs. studio. Required field trip. Students are responsible for paying travel expenses associated with the course. Course projects addressing various aspects of landscape architecture.

4003 Advanced Digital Representation (3) Prereq.: LA 1102, 2101, or equivalent. Advanced techniques in digital representation, such as 3-D modeling, terrain modeling, animation, advanced imaging, and rendering.

4201 Theory and Methods of Landscape Planning (3) 2 hrs. lecture; 2 hrs. lab. Principal theoretical literature in landscape analysis and planning; application of theories and methods; basic skills in the use of GIS, global positioning systems (GPS), and remote sensing/image processing.

4203 Reading the Louisiana Landscape (3) Advanced seminar exploring the use of diverse sources to research and understand regional landscapes and apply these findings to project-based work.

4204 Planning Disaster Resilient Communities (3) Theory and design of disaster resilient communities considering hurricanes, earthquakes, cyclones, tsunamis, and landslides chiefly in regions located near low-lying coastal areas and countries bordering the Pacific Rim.

4301 Landscape Technology IV: Specialization (3) Prereq.: LA 4001. 2 hrs. studio. Specialty topics in landscape architecture construction and design implementation.

4501 Field Studies in Landscape Architecture (1-3)  May be taken for a max. of 6 hrs. of credit. Elective field studies and travel expenses associated with this course. Field trip to landscape architectural office, projects, historic sites, and schools throughout the U.S. and the world.

4502 Independent Study in Landscape Architecture (3) Prereq.: consent of School director. Independent study proposals must be pre-approved by the supervising faculty member. Program of individual study under faculty guidance, including auditing lectures, reading, and exercises as needed to develop skills in methods of inquiry related to the area of specialty.

4503 Advanced Projects in Landscape Architecture (3) Prereq.: consent of instructor. Faculty directed projects for small groups of students investigating specific areas of research and practice.

4504 Advanced Elective in Landscape Architecture (3) Prereq.: permission of instructor. Research practice and application in landscape architecture; small groups will use lectures, discussions, presentations, and other formats to explore advanced topics.

4505 Special Studies in Landscape Architecture (1-2) Prereq.: consent of School director. Program of study under faculty guidance. Independent study proposals must be pre-approved by supervising faculty member and the School director.

5001 Landscape Design VII: Urban Landscape Design (6) Prereq.: LA 4002, 4201, 4301. 12 hrs. studio. Required field trip. Students are responsible for paying travel expenses associated with the course. Investigation of urban structures and systems and design of urban landscapes and elements.

5002 Landscape Design VIII: Capstone Project (6) Prereq.: LA 5001, 5201. 12 hrs. studio. Intensive and critical examination of a comprehensive landscape design and/or independent design project.

5201 Research Seminar (3) Prereq.: LA 3201, 4201. Intensive and critical research of professional practice for landscape architects including issues associated with licensure, practice types, professional services, business development, contracts, and project management.

5202 Graduate Landscape Design I: Basic Design (6) Prereq.: consent of the school. 12 hrs. studio. Introduction to two- and three-dimensional design; spatial sequence, meaning and dynamic change; application to simple landscape designs.

5203 Graduate Landscape Design II: Site Design (6) Prereq.: LA 7001. 12 hrs. studio. Arrangement of buildings, circulation, and urban design elements; emphasis on earthwork and drainage.

5204 Graduate Landscape Design III: Community Design (6) Prereq.: LA 7003. 12 hrs. studio. Landscape planning and design at the community and neighborhood scale; emphasis on relationships of uses, transportation and green infrastructure, public services, and a mix of housing and commercial types.

5205 Graduate Landscape Design IV: Landscape Planning and Development (6) Prereq.: LA 7004. 12 hrs. studio. Investigation of urban structures and systems and design of urban landscapes and elements.

5206 Graduate Landscape Design V: Urban Landscape Design (6) Prereq.: LA 7004. 12 hrs. studio. Investigation of urban structures and systems and design of urban landscapes and elements.

7001 Graduate Landscape Design I: Basic Design (6) Prereq.: consent of the school. 12 hrs. studio. Introduction to two- and three-dimensional design; spatial sequence, meaning and dynamic change; application to simple landscape designs.

7002 Graduate Landscape Design II: Site Design (6) Prereq.: LA 7001. 12 hrs. studio. Arrangement of buildings, circulation, and urban design elements; emphasis on earthwork and drainage.

7003 Graduate Landscape Design III: Community Design (6) Prereq.: LA 7003. 12 hrs. studio. Landscape planning and design at the community and neighborhood scale; emphasis on relationships of uses, transportation and green infrastructure, public services, and a mix of housing and commercial types.

7004 Graduate Landscape Design IV: Landscape Planning and Development (6) Prereq.: LA 7004. 12 hrs. studio. Investigation of urban structures and systems and design of urban landscapes and elements.


LIBRARY AND INFORMATION SCIENCE • LIS

1001 Library Research Methods and Materials (1) Fundamentals of college-level research; location, evaluation, and use of information for research needs; introduction to the organization, use, and retrieval of information; hands-on experience in a variety of printed and electronic resources.

2000 Introduction to Information Technologies (3) Credit will not be given for LIS 1000 and CSC 1000. Introduction to hardware, software, networking, and telecommunications issues; use of application software, electronic databases, and search engines.

2002 Information Services (3) Prereq.: major or permission of department. Credit: may be taken for a max. of 6 sem. hrs. of credit. Directed individual readings by the graduate faculty.

2008 Thesis Research (1-12 per sem.) "S"/"U" grading.

3005 Intermediate Latin (4) Prereq.: LATN 1001 or equivalent. Reading comprehension approach to language continued in extensive passages of moderate difficulty; vocabulary building and basic Latin grammatical constructions.

3005 Intermediate Latin (3) Prereq.: LATN 2051 or equivalent. Nonlaboratory approach includes material of the difficulty of 1st century Latin poetry and prose.

3005 Golden Age Lyric Poetry (3) Prereq.: LATN 2051 or equivalent. Readings from the lyric poets, including selections from Vergil’s Aeneid and/or from Ovid’s Metamorphoses.

3006 Golden Age Narrative Poetry (3) Prereq.: LATN 2051 or equivalent. Readings from Roman prose writers (excluding the historians); the major speeches, letters, and philosophical works of Cicero.

2053 Roman Historians (3) Prereq.: LATN 2051 or equivalent. Readings from Roman historians; selections from Livy and Tacitus; prose style and philosophy of history of the author(s).

2054 Golden Age Lyric Poetry (3) Prereq.: LATN 2051 or equivalent. Readings from the lyric poets; selections from the Carmina of Catullus and/or the Odes of Horace, with attention to emotional content.

4001 Intensive Latin Language (3) A specialized course intended to provide a reading knowledge of Latin. For graduate students and advanced undergraduates for whom a familiarity with another foreign language is strongly recommended. Successful completion of this course will be regarded as sufficient preparation for LATN 4024. Does not count toward satisfying foreign language requirement for undergraduates, although hours may count toward baccalaureate. Credit will not be given for both this course and introductory Latin courses.

4002 Roman Satire (3) Readings from Petronius’ Satyricon. Reading in their human, with attention to evidence of the lives and language of ordinary Roman people.

4003 Readings in the History of Liby (3) Selections from the History of Libya; literary and historical significance.

4004 Roman Comedy (3) Reading of representative plays of Plautus and Terence, with attention to dramatic techniques and comic situations.

4006 Medieval and Renaissance Latin (3) Readings from the time of the medieval Latin writers to Milton.

4007 Latin Prose Composition (3) Practice in writing Latin prose; emphasis on grammar and syntax of classical Latin, using Ciceroan prose style as the model.

4010 Survey of Latin Literature (3) Readings in major Roman authors from the beginning to Amininus Marcellinus, using readings in English in the literary, political, and social history of Rome.

4023 Special Topics in Latin Poetry (3) May be taken for a max. of 6 sem. hrs. of credit. Readings and studies in the works of one or more major poets of the Roman Republic or Roman Empire.

4024 Special Topics in Latin Prose (3) May be taken for a max. of 6 sem. hrs. of credit. Readings and studies in the works of one or more of the major prose writers of the Roman Republic or Roman Empire.

4100 Roman Eloquence (3) Readings in the major Latin elegiac poets such as Ovid, Propertius, and Tibullus; attention to poetic technique and to Roman attitudes toward love and women.

415 Independent Work (1-3) May be taken for a max. of 6 sem. hrs. of credit. Permission of department required. Readings in Latin literature directed by a senior faculty member.

7003 Seminar in Latin Literature (3) May be taken for a max. of 15 hrs. of credit as topics vary.

LIBERAL ARTS • LIBA

7000 Latin Arts: Methods of Inquiry (3) Interdisciplinary study in the liberal arts; modes of inquiry in different disciplines, common themes in the humanities, and means of integrating the works of one or more of the major prose writers of the Roman Republic or Roman Empire.

7000 Roman Arts: Themes and Communities (3) Major ideas in the liberal arts as reflected in exemplary published studies and student research; the cultural function of the humanities.

7006 Special Topics in the Latin Arts (3) Prereq.: credit in LIBA 7000 or consent of instructor. May be taken for a max. of 9 hrs. of credit when topics vary. Interdisciplinary studies in the liberal arts, with attention to major periods, movements, themes, or problems in Western culture.

7990 Independent Study (1-3) Prereq.: credit or concurrent enrollment in LIBA 7890. May be taken for a max. of 6 sem. hrs. of credit. Directed individual readings by the graduate faculty.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

LIBRARY AND INFORMATION SCIENCE • LIS

1001 Library Research Methods and Materials (1) Fundamentals of college-level research; location, evaluation, and use of information for research needs; introduction to the organization, use, and retrieval of information; hands-on experience in a variety of printed and electronic resources.

2000 Introduction to Information Technologies (3) Credit will not be given for LIS 1000 and CSC 1000. Introduction to hardware, software, networking, and telecommunications issues; use of application software, electronic databases, and search engines.

2002 Information Services (3) Prereq.: major or permission of department. Credit: may be taken for a max. of 6 sem. hrs. of credit. Directed individual readings by the graduate faculty.

2008 Thesis Research (1-12 per sem.) "S"/"U" grading.

LIBRARY AND INFORMATION SCIENCE • LIS

1001 Library Research Methods and Materials (1) Fundamentals of college-level research; location, evaluation, and use of information for research needs; introduction to the organization, use, and retrieval of information; hands-on experience in a variety of printed and electronic resources.

2000 Introduction to Information Technologies (3) Credit will not be given for LIS 1000 and CSC 1000. Introduction to hardware, software, networking, and telecommunications issues; use of application software, electronic databases, and search engines.

2002 Information Services (3) Prereq.: major or permission of department. Credit: may be taken for a max. of 6 sem. hrs. of credit. Directed individual readings by the graduate faculty.

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LIBRARY AND INFORMATION SCIENCE • LIS

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LIBRARY AND INFORMATION SCIENCE • LIS

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2002 Information Services (3) Prereq.: major or permission of department. Credit: may be taken for a max. of 6 sem. hrs. of credit. Directed individual readings by the graduate faculty.

2008 Thesis Research (1-12 per sem.) "S"/"U" grading.

LIBRARY AND INFORMATION SCIENCE • LIS

1001 Library Research Methods and Materials (1) Fundamentals of college-level research; location, evaluation, and use of information for research needs; introduction to the organization, use, and retrieval of information; hands-on experience in a variety of printed and electronic resources.

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2002 Information Services (3) Prereq.: major or permission of department. Credit: may be taken for a max. of 6 sem. hrs. of credit. Directed individual readings by the graduate faculty.

2008 Thesis Research (1-12 per sem.) "S"/"U" grading.
MANAGEMENT • MGT

2000 Innovation and Creativity (3) Prereq.: Admitted into the College of Business and Entrepreneurship Concentration or permission of instructor. The course focuses on the roles of creativity and innovation in product, service, or process development; its role in entrepreneurship; and the ethical and environmental issues related to business formation and commercialization; barriers to creativity and innovation; alternative problem-solving approaches.

3000 Petroleum Land Management Practice (1) V Open only to petroleum land management majors. Required of all petroleum land management majors; waived only by consent of department. Pass-fail grading. A minimum of 6 weeks of full-time employment by a firm participating in the the Gulf South.

3001 Petroleum Land Management (3) V Practical and evidentiary aspects of petroleum land management; principles, and techniques derived from a synthesis of legal and geographical sciences; legal effects of various procedures of boundary locations for petroleum properties; petroleum land practices concerning utilization, a real association, and environmental impacts of drilling activity; use of topographic and historical maps, map compilations, historical cartography, air photos, archival records, and field techniques; some focus on coastal Louisiana and the Gulf South.

3010 Family Business Management (3) Prereq.: ACC 2001 and 2001L or ECON 2000; 2010; IDS 1100; MKT 3401. Family business culture; entrepreneurial influence; family business management; career planning; counseling and consulting; professional support relationships; survival skills as a son or daughter in a family business.

3111 Entrepreneurship (3) S Prereq.: ISDS 2000, FIN 3715, MKT 3401 (credit or concurrent enrollment) or permission of instructor. A multidisciplinary approach to entrepreneurship: feasibility studies; financial and location analysis; marketing; promotion; management; entrepreneurship; legal considerations.

3150 Financing and Legal Aspects of Entrepreneurship (3) S-F See FIN 3115. Principles of Entrepreneurship (3) Prereq.: MKT 3111 or permission of instructor. The course provides a broad theoretical perspective and practical framework for understanding and the social structures they create ranging from local social organizations to large international social ventures leading global change. The course introduces students to the possibilities of social entrepreneurship and an introduction to the entire social venture creation process and life cycle.

3200 Principles of Management (3) Management functions, including planning, organizing, staffing, human resource management, leading, interpersonal influence, and controlling in both domestic and international spheres. Independent Study: Advanced Management Topics (1-6) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Independent research under direction of instructor. \( S \) or \( U \).

3211 Business and Society (3) Prereq.: senior standing. Social roles of organizations whose primary function is the accomplishment of economic objectives on current issues in historical development of business-society relationships.

3200 Management Internship (3) Prereq.: junior standing; a max. of 6 sem. hrs. of credit. Students, supervised by a management faculty member and an approved business executive, will follow a predetermined schedule of activities while working for a business firm. Hands-on experience in the fields of management, human resource management, organizational behavior, small business management, entrepreneurship, and administrative practices.

3320 Human Resource Management (3) Prereq.: MGT 3200. Human resource functions, including planning, recruitment, selection, development, maintenance, and reward of employees; relationships with environment and employee groups. Independent Study: Advanced Management Topics (1-6) Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Independent research under direction of instructor. \( S \) or \( U \).

3500 Introduction to Labor Relations (3) F,S,Su Management's response to organized labor in the workplace: labor relations; history and evolution; government regulation of labor-management relations; union structure, political activity, collective bargaining, and contract administration.

3512 Public Sector Labor Relations (3) S Prereq.: MGT 3500. Labor-management relations in government employment: labor regulations in federal, state, and local government; role of third-party neutrals in public sector bargaining.

3531 Labor Relations Conflict and Cooperation (3) F In-depth examination of issues important to workplace conflict resolution; topics include, but are not limited to: negotiation strategies, alternative dispute resolution procedures, employer-employee cooperation, and/or collective bargaining.

3830 Strategically Managing Organizations (3) Prereq.: FIN 3715, MKT 3200; and MKT 3401 or 3402. An honors course; MKT 3401 will not be given for both this course and MKT 3831. May be taken only during the final semester of enrollment. Analyzing strategic situations and decision making based on these analyses to ensure the success of for-profit and non-profit organizations.

3831 HONORS: Strategically Managing Organizations (3) Same as MKT 3830, with special honors emphasis for qualified students. Credit will not be given for this course and MKT 3401. Special Topics in Entrepreneurship (3) Prereq.: MKT 3111 or permission of instructor. May be taken for a max. of 6 sem. hrs. when topics vary. In-depth coverage of special topics.

4020 Internship in Entrepreneurship (3) Prereq.: MKT 3111 or permission of instructor. May be repeated for a max. of 6 sem. hrs. Gaining first-hand knowledge of the business start-up process: practical hands-on experience in business-plan formation.

4030 Independent Study in Entrepreneurship (3) Prereq.: MKT 3111 or permission of instructor. May be repeated for a max. of 6 sem. hrs. credit when topics vary. Detailed study of a specific aspect of entrepreneurship.

4100 Consulting Field Project (3) Prereq.: MKT 3111; Senior standing required. Focus on extending and applying knowledge gained in courses to organizations with the goal of improving their performance. Emphasis on experiential approaches that provide a practical understanding of the field of business; the creation of learning about the crucial issues faced by organizations.

4113 Small Business Management (3) F Prereq.: senior standing. A multidisciplinary approach to small businesses: business start-ups, accounting, finance, marketing, management, promotion, layout, retail management, and management analysis and planning.

4114 Franchising Management (3) S Prereq.: senior standing. Understanding the franchising process; becoming a franchisee or franchisor; the franchisor-franchisee relationship; franchisee attractiveness; franchisee relationships; anti-trust laws, and international franchising.

4322 Employee Selection and Placement (3) S Prereq.: ISDS 2000; or equivalent and MGT 3220. Staffing requirements, recruitment strategies, development and validation of selection procedures, classification and placement of employees; problems associated with person-job matching; socialization of new employees.

4323 Compensation Administration (3) F Prereq.: MGT 3320. Quantitative and nonquantitative methods of job evaluation; wage level, wage structure, incentive plans, issues of employee compensation.

4420 Multinational Management (3) Prereq.: MGT 3200 or equivalent. Management of multinational businesses based on historical and theoretical bases for international management operations; environmental dynamics, multinational business organizations, cultural structural processes, and conceptual systems of international marketing.

4523 Legal Issues in Human Resource Management (3) S Prereq.: MGT 3320. An examination of the most significant laws and court rulings influencing companies' employment practices; topics include: anti-discrimination statutes, affirmative action, common committed workplace torts, occupational safety and health laws, workers' compensation, and wrongful termination.

4600 Crisis Management (3) See DSM 4600.

4620 Human Behavior in Organizations (3) Prereq.: MGT 3200. Human science and behavior applied to conceptualize human dynamics in organizations; focus on individual, interpersonal, group, and intergroup behavior; impact of human behavior on organizational effectiveness.

4701 Technological Entrepreneurship (3) See ISDS 4701.

4702 Managing Technology Transfer (3) V Models of technological transfer; mechanisms and barriers to technological transfer; technological transfer and industrial innovation; domestic and international aspects of technology transfer.

7001 Management of Technology (3) See SEU 7641.

7111 Entrepreneurship (3) V Research, investigation, and analysis of development of entrepreneurial feasibility studies and business plans.

7202 Business Ethics (3) In-depth examination of the role of business in a broad societal context; changes occurring in business and resulting modifications of the relationship of business to society, roles of business viewed by business and society.

7203 Development of Management Thought (3) F-O Origin and growth of managerial concepts; contributions of leaders associated with major schools of management thought; scientific management process, empirical, human behavior, social system, decision-making, and quantum management.

7212 Seminar in Contemporary Management Topics (3) V Prereq.: consent of instructor. May be taken for a max. of 6 sem. hrs. credit.

7301 Seminar in Human Resources (3) S Role of human resource managers; their relationships with employees, the external environment, and top management.

7302 Reward Systems in Organizations (3) Y Theories of motivation, reward, performance and behavior; their application to major issues regarding human resources allocation, development and utilization.

7401 International Business Management (3) F Theories and management of international operations; development of environmental, operational, strategic, and decision making perspectives.

7402 Comparative and Cross-Cultural Management (3) V Organizing, operating, and managing in other cultures and countries; multicultural and environmental cross-cultural issues concerning multinational corporations; technological, economic, political, and societal issues; their influence on multinational management.

7500 Labor-Management Relations (3) F Primarily for master's level students. An examination of union-employer interactions in all phases of the industrial relations process including union certification elections, contract negotiation, and grievance administration; emphasis on employment of course concepts through the completion of experiential learning exercises.

7600 Organizational Behavior (3) F-E Behavior of people within organizations; the environment within which organizations function; components of the behavioral unit; process of interactions, and outputs of organizational behavior.

7620 Strategic Management of Health Care Organizations (3) V PRAD A5, 7620.

7700 Organization Theory (3) S-O Macro aspects of organizations; processes by which organizations are formed, structures utilized in their operation; internal processes; environmental considerations; organizational viability and renewal.

7800 Current Issues in Strategic Management (3) S Contemporary issues in strategic management theory and practice; emphasis on field projects that provide top-management problem-solving experience.

7811 Research Issues in Strategic Management (3) F-E Prereq.: MKT 7890 or equivalent. Strategic planning; issues including environmental scanning, goal formulation, strategic implementation, control, and evaluation in successful organizations.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

9000 Dissertation Research (1-12 per sem.) "S"/"U" grading.

9201 Research Methods in Management (3) S-O Theory building; measurement; reliability and validity; significance testing and statistical power; sampling strategies and missing data; multi-level and cross-level issues; research ethics.

9202 Pre-dissertation Research (1-9) May be repeated for a max. of 9 sem. hrs. credit. Directed work in advanced topics.

MARKETING • MKT

2000 Marketing and Society (3) Not open to students in the E. Paulison College of Business. Marketing aspects of contemporary social issues; emphasis on methods for dealing with societal issues and their impact on marketing activities.

3401 Principles of Marketing (3) Prereq.: ACCT 2000 or 2001 (2002, and either ECON 2030 or ECON 2040 (2002), and either 2010 and 2011). An honors course, MKT 3402, is also available. Credit will not be given for both this course and MKT 3402. Lecture-discussion, case analysis, marketing-simulation games; the marketing process, (F) marketing environment, functions, and institutional structure at a macro level; marketing strategy and policies at a micro level; problems of productivity, view points of society, consumer, and marketing manager.
Undergraduates who qualify for entry into the University's communication graduate program without a degree or professional experience in mass communications may enroll in undergraduate or graduate degree credit by Mass Communication majors. An honors course, MC 4212, is also available. An intensive course provides an overview of the role of the media within society.

**Mass Media Theory and Practice (3)**
Preq.: MC 4211, with special honors for qualified students. Consult School before registering.

**1121 Mass Media Principles (3)**
Preq.: consent of the Mass Communication chair. Open to LSU undergraduates who qualify for entry into the University's Accelerated Master's Degree Program. Required of all students who enter the mass communication graduate program without a degree or professional experience in mass communications. May not be included as graduate degree credit by Mass Communication majors. An honors course, MC 4112, is also available. An intensive course in laboratory practice in the professional skills required of all media practitioners.

**11212 Seminar in Communication Policy (3)**
The influence of public affairs and policy issues on media performance; original research concerning communication policies implemented through legislative and administrative decision-making. Open to graduate students of mass communication and other fields of social sciences. Advanced study of research methods, research designs and analysis applicable to mass communication and public affairs.

**9791 Independent Research: Mass Communication (1-3) F, S, Su Preq.: consent of instructor and the appropriate dean for graduate studies. May be repeated for 6 sem. hrs. of credit. For advanced graduate students who wish to pursue research on special problems, exclusive of thesis or dissertation, for which there is no organized course.

**9990 Thesis Research (1-12 per sem.)**
May be repeated for up to 15 hrs. of credit when topics vary. Intensive advanced study and research leading to the development of a thesis.

**9990 Dissertations Research (1-12 per sem.)**
Permission of the graduate director is required. May be repeated for up to 15 hrs. of credit when topics vary. Intensive advanced study and research leading to the development of a dissertation.
4033 Direct Response Advertising and Promotion (3)
Types and roles of direct response advertising and tactics that advertising agencies and other organizations use to establish and maintain relationships with customers and others.

4034 Advertising Media Analysis and Planning (3)
Prereq.: MC 2525 or MKT 3401. Majors only. Major analytical plan on current marketing problem required. Quantitative study of techniques and procedures used in determining advertising media selection, budget allocation, and levels of message intensity.

4049 Advertising Problems (3) Prereq.: MC 3681 and 4935 only. Seminar in advertising problems and related readings.

4054 Advertising Campaigns (3) Prereq.: MC 2525, 3109, and 3111. Majors only. Team development of advertising campaigns on a competitive basis (simulated advertising agency operations); emphasis on research, marketing, and advertising problems; budgetary planning, media strategy, and creative design.

7025 Advertising Theory and Processes (3) Role of advertising in communication, marketing, and society; analysis of various advertising processes.

7026 Issues in Advertising (3) Exploration of socioeconomic, legal, ethical, and cultural issues related to advertising as an institution.

JOURNALISM

3001 Business Journalism (3) Writing for and editing house organs, newsletters, and miscellaneous industrial publications; business news reporting for the daily newspaper.

3002 Print Writing (3) Prereq: MC 2010 and 3101 or permission of department. 1 hr. lecture; 3 hrs. lab. Developing and writing feature stories, vignettes, and other humorous text.

3003 HONORS: Feature Writing (3) Sane as MC 3002, with special honors emphasis for qualified students.

3010 Print Newspaper and Editing (3) Prereq.: MC 2010. Majors only. 2 hrs. lecture; 2 hrs. lab. Basic skills of reporting and writing and primary editing process for a newspaper.

3102 Broadcast Newsgathering and Producing (3) Prereq.: MC 2010. Majors only. 2 hrs. lecture; 2 hrs. lab. Development of skills to report, write, and produce a weekly television newscast and public affairs shows.

3103 Advanced Print Newsgathering (3) Prereq.: MC 3010. Majors only. 2 hrs. lecture; 2 hrs. lab. Specific application of newsgathering techniques; covering courts, law enforcement agencies, government, business; using polls and other statistical methods; relational databases.

3104 Advanced Broadcast Newsgathering (3) Prereq.: MC 3102. Majors only. 1 hr. lecture; 3 hrs. lab. Development of advanced broadcast reporting and broadcasting skills covering newsgathering focus on depth, context, and presentation of information.

3151 Advanced Reporting (3) F S Prereq: "C" or better in MC 2010. Majors only. 3 hrs. lab. Individually arranged hours conducted at The Advocate. Reporting news for The Advocate.

4010 Magazine Editing and Production (3) Prereq.: MC 2015 and 3103. Majors only. 1 hr. lecture; 3 hrs. lab. Magazine project required. Techniques of magazine editing and production; analysis of magazine industry and specific magazines and their audiences; editorial objectives and formulas, issue planning, article selection, layout, illustration, typography, printing, and circulation.

4011 Scholastic Journalism (3) Basic communication techniques and instructional methods for scholastic journalism teachers; duties of counselors for newspapers and yearbooks.

4041 Sports Writing and Production (3) Prereq.: MC 2501 and 3101 or MC 3102 or 2700. Majors only. 2 hrs. lecture; 2 hrs. lab. Developing, writing, and producing sports stories for both print and electronic media.

4083 Communication Skills (3) Prereq.: MC 2015 and 3101. Analysis of various forms of journalistic writing that involve subjective expression: interpretative reporting, news analysis, news editorial, and columns, critical reviews, and interviews.

4250 Public Affairs Reporting (3) Prereq.: MC 3101 and 3110. Majors only. 2 hrs. lecture; 2 hrs. lab. Using public records to document fraud, abuse, or interesting and significant social change.

4251 Publishing, Editing, and Production (3) Prereq.: MC 2010. Majors only. 2 hrs. lecture; 2 hrs. lab. Using publishing, editing, and production techniques to develop and maintain public information, using converging media technology to create content for a news web site.

4500 Advanced Journalism (3) Prereq.: MC 3101, 3102, and either 3103 or 3104 or permission of instructor. Majors only. 1 hr. lecture; 3 hrs. lab. Techniques of newspaper editing and production; application of advanced reporting techniques; production of laboratory newspaper; techniques of producing all aspects of a television news program, including videography, nonlinear video editing, producing a newscast and on-set news performance.

4720 Television Creative Projects (3) Prereq.: Majors only. Graduate project research skills are required to take this course. Techniques of television production for non-journalism projects; includes field production, nonlinear video editing, graphics and studio production.

7011 News Workers and Their Organizations (3) The impact of individuals and organizations on the selection and processing of news; examination of the influence of public affairs research on communicators and their organizations.

POLITICAL COMMUNICATION

3504 Introduction to Political Communication (3) Prereq.: Majors only. Introduction to theory and practice of political communication; special emphasis on political campaigns, press-government relations, and policymaking; implications for media, politicians, and the public.

3505 Media and Policy Process (3) Prereq.: Majors only. Impact of the media on American politics through their interactions with political actors and involvement in the policy-making process; role of political communication in government, and the media's role in spotlighting policy problems and suggesting policy solutions.

3560 Media, Politics, and the Public (3) Prereq.: Majors only. Interaction among media, politics, and the public in American society; analysis of mass media representation and the influence of the audience on media content; media impact on political attitudes and behaviors, especially voting.

4515 Case Studies in Media and Political Campaigns (3) Prereq.: Majors only. Examination of political campaigns involving American media; the media client and message; developing media messages for political campaigns.

4520 Advanced Seminar in Political Communication (3) Prereq.: MC 3590 and MC 3505, or consent of instructor. Lectures, discussions and research on topics relevant to all aspects of political communication. Includes discussion of theoretical frameworks, facts, and sources; the persuasive and ethical implications of political communication processes in democratic government.

4900 Propaganda and Political Communication (3) Theory, development, and impact of propaganda as a controversial mass communication strategy for influencing public opinion.

7004 The News Media and Governance (3) News media influence on public actors, processes, and outcomes in American politics; public policy towards the news; strategic political communication, and influences of public officials and other public actors on the framing and structure of content.

7036 Seminar in Media and Public Affairs Theory (3) Advanced studies in the application of mass communication theory to public affairs and public policy cases, problems, and issues.

PUBLIC RELATIONS

3000 Principles of Public Relations (3) Mass communication and public information/public relations tactics and principles of the public relations function.


4001 Public Relations Writing (3) Y Prereq.: MC 2525, 3101, and 3102. Majors only. 2 hrs. lecture; 2 hrs. lab. Developing and writing news releases, speeches, audio-visual scripts, feature stories, and other public relations communications.

4004 Case Study in Public Relations (3) Prereq.: MC 3010. Majors only. Theoretical concepts of public relations practice applied to solution of strategic business, institutional, and organizational problems.

4055 Public Relations Campaigns (3) Y Prereq.: MC 3018, 4001, and 4004. Majors only. 2 hrs. lecture; 2 hrs. lab. Developing and implementing public relations communications campaigns; emphasis on designing and producing print and audio-visual materials for campaigns; emphasis on use of planning and evaluation techniques.

7006 Public Relations Strategies and Tactics (3) Formal and informal models, tasks, and techniques used to formulate and complete marketing and public relations objectives and activities of public relations and to function ethically in social systems.

7007 Public Relations Administration (3) Principles of public relations management, including project research techniques; strategies of campaign setting, planning, organizing, staffing, leading, and controlling.

7008 Public Relations Research and Production (3) Prereq.: MC 4111 or equivalent writing proficiency. 2 hrs. lecture; 2 hrs. lab. Writing public relations messages for print and broadcast; program proposals; practice in writing, graphic design, and layout of messages.

7813 Public Affairs Advertising Campaigns (3) The application of advertising theory and process to public affairs campaigns; emphasis on strategy development in the context of political or issues-oriented campaigns.

7829 Public Communication Practices (3) The role mediated communication plays in defining/ influencing/ altering relationships among various stakeholders and interest groups in the context of mass communication strategies used to formulate and execute public affairs programs.

PUBLIC RELATIONS

7810 Public Communication Administration (3) Principles of public affairs, issues management, and political communication; application of research techniques in communication campaigns; emphasis on planning, organizing, staffing, leading, and controlling communication campaigns in corporate and governmental settings.

MATHEMATICS - MATH

General education courses are marked with stars (★).

No student may receive more than nine semester hours of credit in mathematics courses numbered below 1550, with the exception of students who are pursuing the elementary education degree and following the 12-hour sequence specified in that curriculum. No student who has already received credit for a mathematics course numbered 1550 or above may be registered in a mathematics course numbered below 1550, unless given special permission by the Department of Mathematics.

0992 Preparation for College Mathematics II (3) Prereq.: MATH 0991 or placement by department. 3 hrs. lecture. For students not prepared to take MATH 1009, 1015, or 1021. Not for degree credit. Em. hrs. will be added to the degree program of any student taking this course. No student who has already received credit for a mathematics course numbered above 1550 may register for this course. Linear equations and inequalities, polynomials and factoring, algebraic fractions, operations on radicals, expressions, equations, graphing.

1010 Mathematics for Prospective Elementary School Teachers I (3) Prereq.: MATH 0992 or placement by department. Offered by correspondence only. Logic; counting numbers, integers, rational numbers, real numbers; emphasis on field properties; set non-numerical and some number theory; units of measurement.

1010 Mathematics for Prospective Elementary School Teachers II (3) Prereq.: MATH 1009. Offered by correspondence only. Continuation of MATH 1009. Measurement, informal geometry, systems of equations, introduction to probability and statistics.

1015 Basic Mathematics and Applications (3) V Prereq.: MATH 0992 or placement by department. This course does not serve as a prerequisite. 3 hrs. Credit will not be given for both this course and MATH 1021, 1022, or 1023. Offered by correspondence only. Basic mathematical skills, formulas for geometric measurement, systems of linear equations and inequalities, review of quadratic equations, logarithms and applications, exponential growth and decay, trigonometry and its application to geometry and measurements.

★ 1015 COL Algebra (3) F,S,Sa Prereq.: MATH 0992 or placement by department. Credit will not be given for both this course and MATH 1015 or 1023. Quadratic equations, systems of linear equations and inequalities, functions, graphs, exponential and logarithmic functions, complex numbers, theory of equations.
**1022 Plane Trigonometry (3) F,S,Su**  Prereq.: MATH 1021 or placement by department. Credit will not be given for both this course and MATH 1015 or 1023. 3 hrs. lecture; 1 hr. lab. Trigonometric functions and identities, inverse trigonometric functions, graphs, solving triangles and equations, complex numbers, polar coordinates.

**1023 College Algebra and Trigonometry (5) F,S,Su**  Prereq.: placement by department or grade of "A" in MATH 0092. Credit will not be given for both this course and MATH 1015, 1021, or 1022. For qualified students, a replacement for MATH 1021 and 1022 as preparation for calculus.

**1025 Mathematics of Commerce (3) F,S**  Prereq.: MATH 1015 or 1021. Interest, discount, annuities, depreciation, and insurance.

**1029 Introduction to Contemporary Mathematics (3) Prereq.: MATH 0092 or placement by department.** Primarily for students in liberal arts and social sciences. Mathematical approaches to contemporary problems, handling of data, and optimization using basic concepts from algebra, geometry, and discrete mathematics.

**1100 The Nature of Mathematics (3) F,S,Su**  Not for science, engineering, or mathematics majors. For students who desire an exposure to mathematics as part of a liberal education. An honors course, MATH 1101, is also available. Logic; the algebra of sets, logic, and networks; probability and statistics.

**1101 HONORS: The Nature of Mathematics (3) V**  Prereq.: a grade of "A" in MATH 1021 or consent of department. Same as MATH 1100, with special honors emphasis for qualified students. Logic; the algebra of sets, logic, and networks; probability and statistics; game theory; infinities; famous impossibilities and unsolved problems.

**1201 Number Sense and Open-Ended Problem Solving (3) F,S,Su**  Prereq.: MATH 1021. Primarily for students in the elementary education curriculum. Cardinality and integers; decimal representation and the number line; exploratory data analysis; number sense; open-ended problem solving strategies; written communication of mathematics.
1202 Geometry, Reasoning, and Measurement (3) F,S,Su Prereq.: MATH 1201. Primarily for students in the elementary education curriculum. Synthesis and coordinate geometry in two and three dimensions; spatial visualization and counting procedures; symmetries and tilings; history and written communication of mathematics.

1431 Calculus with Business and Economic Applications (3) F,S,Su Prereq.: MATH 1021 or equivalent. Credit will be given for only one of the following: MATH 1431, 1441, 1530. 3 hrs. lecture; 1 hr. lab. Functions, graphing, calculus of algebraic and logarithmic, and exponential functions; applications to business and economics, such as maximum-minimum problems, marginal analysis, and exponential growth models.

1453 Mathematics for Business Analysis (3) Prereq.: MATH 1431 or equivalent. Offered by correspondence only. Sets and counting; probability, including conditional probability, discrete and continuous random variables, variance, and normal distributions; matrices and echelon method for solving systems of equations; functions of several variables and partial derivatives.

1461 Calculus with Application to Technology (3) F,S Prereq.: MATH 1021 or 1022; or 1023; or consent of department. Credit will be given for only one of the following: MATH 1461, 1441, 1550. Differentiation and integration of algebraic and trigonometric functions; application to technology.

1462 Analytic Geometry and Calculus I (5) F,S Prereq.: MATH 1021 or 1022 or consent of department. An honors course, MATH 1551, is also available. Credit will be given for only one of the following: MATH 1462, 1442, 1441, 1550. Analytic geometry, limits, derivatives, integrals.

1550. 20 30  D iscrete Dyn am ica l Sys tem s (3) S Prereq.: MATH 1552. Introduction to graph theory; and higher dimensional systems.

1552 H ONORS: M ultid im ension a l C alculu s (3) F Derivatives, multiple integrals. 20 57, 2058, 2059. 2000. 20 58 H ONORS: M ultid im ension a l C alculu s (3) F,Su Prereq.: MATH 1552. Credit will be given for only one of the following: MATH 2058, 2070, 2090. Ordinary differential equations; emphasis on solving linear differential equations and Laplace transforms, linear algebra, and Fourier series; physical applications stressed.

20 55 Linear Algebra (3) F,S Prereq.: MATH 1552, 1635 or 2040, or equivalent. An honors course, MATH 2056, is also available. Credit will not be given for both this course and MATH 2090. Systems of linear equations, vector spaces, linear transformations, matrices, determinants.

20 65 E lementary Differential Equations (3) F Prereq.: MATH 1552. Credit will be given for only one of the following: MATH 2056, 2070, 2090. Ordinary differential equations; emphasis on solving linear differential equations and Laplace transforms, linear algebra, and Fourier series; physical applications stressed.

20 70 M athematical Methods in Engineering (4) F Prereq.: MATH 1552. Credit will be given for only one of the following: MATH 2070, 2080, 3355. Ordinary differential equations; Laplace transforms, linear algebra, and Fourier series; physical applications stressed.

20 85 Linear Algebra (3) F,S Prereq.: MATH 1552, 1635 or 2040, or equivalent. An honors course, MATH 2086, is also available. Credit will not be given for both this course and MATH 2090. Systems of linear equations, vector spaces, linear transformations, matrices, determinants.

20 90 E lementary Differential Equations and Linear Algebra (4) F,S Prereq.: MATH 1552. Credit will be given for only one of the following: MATH 2056, 2070, 2090. Credit will not be given for both this course and MATH 2090. Systems of linear equations, vector spaces, linear transformations, matrices, determinants.

21 03 M athematical Models: Linear Algebra (3) V Same as MATH 2103. With special honors emphasis for qualified students.

21 10 M athematical Models and Calculus I (4) F,S Prereq.: MATH 1550. An honors course, MATH 2110, is also available. Techniques of integration, parameter equation, coordinate geometry in two and three dimensions; introduction to differential equations and partial derivatives.

21 15 M athematical Models and Calculus II (4) F,S,Su Prereq.: MATH 1550. An honors course, MATH 2115, is also available. Techniques of integration, parameter equation, coordinate geometry in two and three dimensions; introduction to differential equations and partial derivatives.

22 00 H ONORS: Analytic Geometry and Calculus I (5) Same as MATH 2110. With special honors emphasis for qualified students.

22 54 Calculus II for Life Sciences (4) F Prereq.: MATH 1201 and 1202, and concurrent enrollment in EDCI 3125 AND 3126. 2 hrs. lecture; 2 hrs. lab/halfday field experience (as part of Professional Development). A mathematics course designed to be integrated in Praxis II with the principles and structures of mathematical reasoning applicable to the classroom. Development of a connected, balanced view of mathematics; application of measurable attributes of objects and the units, systems, and processes used to measure them; techniques, tools, and formulas of measurement; interrelationships of patterns, relations, and functions; applications of proportional and algebraic reasoning in mathematical situations and structures using contextual, numeric, graphic, and symbolic representations; written communication of mathematics.

23 01 Mathematics Tutoring Experience (1) F,S Prereq.: MATH 1552, EDCI 2001 and concurrent enrollment in EDCI 3001. 3 hr. lab. Course provides a carefully supported, monitored, and evaluated mathematics tutoring experience in a local school under the guidance of a mathematics faculty member and a mentoring mathematics teacher in the local school.

23 02 Mathematics Tutoring Experience (1) F Prereq.: MATH 3001, EDCI 3001, and concurrent enrollment in EDCI 3002. Under the supervision of a mathematics faculty member, a teaching mathematics teacher in a local school, students will prepare and deliver middle and/or high school mathematics lessons that incorporate strategies for student learning.

33 55 Probability (3) F,S Prereq.: MATH 2057. Suggested for preparation for actuarial exams. Introduction to probability, emphasizing concrete problems and applications; random variables, expectation, conditional probability, law of large numbers, central limit theorem, and stochastic processes.

39 03 Methods of Problem Solving (1) F Prereq.: MATH 1552 and MATH 2070, 2085, or 2090. May be taken for a max. of 3 hrs. credit when topics vary. Pass-fail grading. Instruction and practice in solving a wide variety of mathematical and logical problems, and participation in the Putnam examination.

39 98 Undergraduate Major Seminar (1) V May be taken for a max. of 4 hrs. of credit. Pass-fail grading. Topics of current interest.

40 03 Instructional Strategies in Mathematics (1) F,S Prereq.: MATH 3002, EDCI 3002, and concurrent enrollment in EDCI 3001. Instructional activities and strategies for mathematics that depart from the lecture style cooperative learning or open-ended exploration; students will design and conduct a mathematics lesson using such strategies.

40 04 Mathematics Education Capstone Course (3) F,S Prereq.: MATH 2040 and concurrent enrollment in EDCI 4004. Student should be within two semesters of completion of requirements for a mathematics major and must have completed a 4000-level mathematics course with a grade of "C" or better, or obtain permission from the instructor. Provides opportunities for students to consolidate their mathematical knowledge, and to obtain a perspective on the meaning and significance of the knowledge. The course will emphasize communication skills, including reading, writing, and speaking mathematics.

40 23 Combinatorial Algebra (3) F,S,Su Prereq.: MATH 2040 or equivalent. Credit will not be given for both this course and MAT 4020. Finite algebraic structures relevant to computers: groups, graphs, groups and computer design, group codes, semigroups, finite-state machines.

40 24 M athematical Models (3) F,S Prereq.: MATH 1552 and credit or registration in MATH 2085, or equivalents. Construction, development, and study of mathematical models for real situations; basic examples, model construction. Markov chain models, models for linear optimization, selected case studies.

40 25 Optimization Theory and Applications (3) S Prereq.: MATH 2057 and MATH 3355. Basic methods and techniques for solving optimization problems; n-dimensional geometry and convex sets; classical, and elementary functions of one and several variables; linear, nonlinear, and integer programming.

40 37 Discrete Combinatorial Structures (3) Prereq.: MATH 2110 and 2057. An honors course, MATH 4036, is also available. Combinatorial structures, including the principle of inclusion and exclusion, generating functions, and algorithmic and probabilistic techniques. Polyhedra, the duality of integer programming, and matroid theory.

40 55 Mathematics for Business Analysis (3) F,S,F,Su Prereq.: MATH 1550. An honors course, MATH 2040, is also available. Techniques of integration, parameter equation, coordinate geometry in two and three dimensions; introduction to differential equations and partial derivatives.

40 56 M athematical Statistics (3) S Prereq.: MATH 3355. Suggested for preparation for actuarial exams. Experimental design, sampling methods, nonparametric methods, hypothesis testing, and regression.

40 58 E lementary Stochastic Processes (3) Prereq.: MATH 2085 and 3355. Markov chains, Poisson process, and Brownian motion.

40 65 N umerical Analysis I (3) F Prereq.: MATH 2057. Basic programming ability in Fortran, Pascal, or C. Newton's method, Lagrange interpolation, least-squares approximation, orthogonal polynomial differentiation and integration. Gaussian elimination.

40 66 Numerical Analysis II (3) S Prereq.: MATH 4065 and one of the following: MATH 2085, 2090, 4027. Numerical solutions of initial value problems and boundary value problems for ordinary and partial differential equations.

41 53 F inite Dimensional Vector Spaces (3) S Prereq.: MATH 2057 or 2085. Vector spaces, linear transformations, matrices, eigenvalues and eigenvectors, linear operators, and canonical forms.
4158 Foundations of Mathematics (3)  Prereq: MATH 2057 or equivalent. Real number systems, sets, relations, product spaces, order, and cardinality.

4171 Theory of Numbers (3)  Prereq: MATH 2058 or equivalent. Fundamental concepts of undirected and directed graphs, trees, connectivity and traversability, planarity, combinatorial and graph-theoretic applications, and applications.

4172 Combinatorics (3)  Prereq: MATH 2058 or equivalent. Topics selected from permutations and combinations, generating functions, principle of inclusion and exclusion, configurations and designs, matching theory, existence theorems, and applications.

4181 Elementary Number Theory (3)  Prereq: MATH 2057 or 2058. Divisibility, Euclidean algorithm, prime numbers, congruence, arithmetic functions, Chinese remainder theorem and sums of integral squares.

4200 Abstract Algebra I (3)  Prereq: MATH 2085 or equivalent. Credit will not be given for both this course and MATH 4023. Elementary properties of sets, relations, mappings, integers, groups, subgroups, normal subgroups, quotient groups, homomorphisms, automorphisms, and permutation groups; elementary properties of rings; unique factorization and Euclidean domains, field extensions, splitting fields, finite fields, Galois theory.

4325 Fourier Transforms (3)  Prereq: MATH 1552 and at least one from MATH 2057, 2065, 2070, 2085, or 2170. For students majoring in mathematics, physics, and engineering; topics such as Chinese remainder theorem and sums of integral squares.

4345 Special Functions (3)  Prereq: either MATH 2057 and 2090, or MATH 2057, 2065 or 2070 and 2085. Sturm-Liouville functions (Bessel, Laguerre, Legendre, Hermite), orthogonal expansions including Fourier series, recursion relations and generating functions, beta functions, Chebyshev polynomials, and other topics.

4470 Error-Correcting Codes (3)  Prereq: MATH 2057 or 2090 or equivalent knowledge of linear algebra. Vector spaces over finite fields, basic properties of codes, examples of important codes and decoding schemes, bounds on sizes and rates of codes, the weight enumerator polynomial, perfect codes, and other topics.

4700 History of Mathematics (3)  Prereq: MATH 2040, 2057, and 2085; students entering the course should have a working knowledge of calculus. This course will have substantial mathematical content; topics such as early Greek mathematics, from Euclid to Archimedes, the geometry of Apollonius, the aspects from Diophantus to the present; the calculus of Newton and Leibniz; the renewed emphasis on rigor and axiomatic foundations in the 19th and 20th centuries; contributions of mathematics to technology and the natural sciences; biographies of significant mathematicians.

4998 Senior Seminar for Mathematics Majors (3)  S Prereq.: the student should be within two semesters of completion of requirements for a mathematics major; for undergraduate credit only; under guidance of professor teaching the course, student will undertake several independent reading projects and write expository papers; oral presentations will follow preparation of written papers.

4999 Selected Readings in Mathematics (1-3)  Prereq.: consent of department. May be taken for a max. of 9 sem. hrs. credit.

5000 Topics in Mathematics for Secondary Teachers (1-3)  Prereq.: consent of department at or above the level of 2040 or equivalent. Probability spaces, random variables and expectations, independence, convergence concepts, laws of large numbers, convergence of series, law of iterated logarithm, characteristic functions, central limit theorem, limiting distributions, martingales.

5070 Lie Groups and Representation Theory (3)  Prereq.: MATH 7311 or equivalent. Lie groups, Lie algebras, subgroups, homomorphisms, the exponential map. Also topics in finite and infinite dimensional Lie groups and Lie algebras, operator theory, or nonlinear functional analysis.

5096 Probability Theory (3)  Prereq. MATH 7311 or equivalent. Probability spaces, random variables and expectations, independence, convergence concepts, laws of large numbers, convergence of series, law of iterated logarithm, characteristic functions, central limit theorem, limiting distributions, martingales.

5150 Complex Analysis (3)  Prereq.: MATH 7311 or equivalent. Theory of holomorphic functions of one complex variable, path integrals, power series, singularities, mapping properties, normal families, other topics.

5310 Functional Analysis (3)  Prereq.: MATH 7312 or equivalent. Banach spaces and their generalizations; Banach-Steinhaus theorem, open mapping, closed graph, Banach-Hahn-Banach theorems; duality in Banach spaces, weak topology; topological properties of Banach algebras, spectral theory, distributions, and Fourier transforms.

5350 Complex Analysis (3)  Prereq.: MATH 7311 or equivalent. Theory of holomorphic functions of one complex variable, path integrals, power series, singularities, mapping properties, normal families, other topics.

5360 Probability Theory (3)  Prereq. MATH 7311 or equivalent. Probability spaces, random variables and expectations, independence, convergence concepts, laws of large numbers, convergence of series, law of iterated logarithm, characteristic functions, central limit theorem, limiting distributions, martingales.

5370 Lie Groups and Representation Theory (3)  Prereq.: MATH 7311 or equivalent. Lie groups, Lie algebras, subgroups, homomorphisms, the exponential map. Also topics in finite and infinite dimensional Lie groups and Lie algebras, operator theory, or nonlinear functional analysis.

5735 Waves (3)  Prereq.: MATH 7311 or equivalent. Fourier series, Fourier transforms; windowed Fourier transforms; continuous wavelet transform; discrete wavelet transform; multiresolution analysis; construction of wavelets.

5738 Seminar in Functional Analysis (1-3)  Prereq.: consent of department. Advanced topics such as topological vector spaces, weak topology, Banach algebras, operator theory, or nonlinear functional analysis.

5750 Advanced Topics in Mathematics (1-3)  Prereq.: consent of department. Advanced topics such as harmonic analysis, partial differential equations, Lie group representation theory, several complex variables, or probability theory.

5740 Combinatorial Theory (3)  Prereq.: MATH 7200 or equivalent. Problems of existence and enumeration in the study of arrangements of elements into sets; combinatorial and permutation generating functions such as generating functions, recurrence relations, inclusion-exclusion, Polya's theorem, graphs and digraphs, combinatorial designs, incidence matrices, partial ordered sets, matroids, finite geometries, Latin squares, difference sets, matching theory.

5749 Seminar in Combinatorics, Graph Theory, and Discrete Structures (1-3)  Prereq.: consent of department. May be repeated for credit with consent of department. Advanced topics such as combinatorics, graph theory, automata theory, or optimization.

7510 Topology I (3)  Prereq.: MATH 2057 or equivalent. Basic notions of general topology, with emphasis on Euclidean and metric spaces, continuous and differentiable functions, inverse function theorem and its consequences.

7512 Topology II (3)  Prereq.: MATH 7510. Theory of the fundamental group and covering spaces including the Seifert-Van Kampen theorem; universal covering space; classification of covering spaces; selected areas from algebraic or general topology.

7520 Algebraic Topology (3)  Prereq.: MATH 2070 and 7510 or equivalent. Basic concepts of homology, cohomology, and homotopy theory.

7550 Differential Geometry and Topology (3)  Prereq.: MATH 7510. Riemannian geometry, special topics from topology.

7560 Seminar in Algebraic and Geometric Topology (1-3)  Prereq.: consent of department. May be repeated for credit with consent of department. Advanced topics such as algebraic topology, Lie groups, surgery theory, sheaf theory, or fiber bundles.

7650 Seminar in Topological Algebra (1-3)  Prereq.: consent of department. May be repeated for credit with consent of department. Advanced topics such as topological groups, topological semigroups, or topological lattice theory.

7999 Selected Readings in Mathematics (1-3)  Prereq.: consent of department. May be repeated for credit with consent of department.

8000 Thesis Research (1-12 per sem.)  "S VU" grading.

9000 Dissertation Research (1-12 per sem.)  "S VU" grading.

MECHANICAL ENGINEERING • ME

2212 Introduction to Mechanical Engineering Design (2)  Prereq.: ENGL 1001, CM 1020 or 1030, PHYS 2101, 2103, or equivalent. 1 hr. lecture; 2 hrs. lab. Art and science of Mechanical Engineering design; reverse engineering; design methodologies; product realization; professional ethics; problem solving.

2334 Thermodynamics (4)  Prereq.: Grade of "C" or better in CHEM 1202, MATH 1352, PHYS 2101; credit or registration in MECN 2511, PHYS 2510, or equivalent. First and second law. Ideal gas thermodynamic systems and control volumes; thermodynamic properties of simple substances, work and heat; 1st and 2nd law; power and refrigeration cycles; ideal gas models; nucleopore mixtures and psychrometric chart; combustion.

2533 Introduction to Engineering Computation (3)  2 hrs. lecture; 3 hrs. lab. See CSCI 2533.

2723 Materials of Engineering for Mechanical Engineers (3)  Prereq.: CHEM 1202 and credit or registration in PHYS 2102. Credit will not be given for both this course and ME 2733. Classification and study of engineering materials, their structure, properties, and behavior: typical metals and alloys, plastics and rubber, and ceramic materials; phase equilibria and manipulation of properties and behavior by adjustment of composition and processing variables; responses of engineering materials to stress and environmental variables; emphasis on Mechanical Engineering applications such as fracture and heat treatment processes.

2733 Materials of Engineering (3)  Prereq.: CHEM 1201 and credit or registration in PHYS 2101. Credit will not be given for both ME 2733 and ME 2723. Classification and study of engineering materials, their structure, properties, and behavior: typical metals and alloys, plastics and rubber, and ceramic materials; phase equilibria and manipulation of properties and behavior by adjustment of composition and processing variables; responses of engineering materials to stress and environmental variables.
3133 Dynamics (3) S Prereq.: Grade of "C" or better in CE 220 and 222, hrs. lecture; 2 hrs. recitation. Vectorial treatment of kinematics and kinetics of particles and rigid bodies; force, mass, acceleration; impulse and momentum, work and energy.

4141 Astronautics Dynamics and Modeling (3) F Prereq.: C SC/ME 2533, ME 3133, grade of "C" or better in MATH 2090, and credit or registration in MATH 3834. Bond graph techniques for deriving dynamic equations of physical systems; time and frequency domain analyses, numerical simulation of mechanical systems.

3249, 3250 Engineering Practice (1-3, 3) Su Prereq.: ME 2334 and consent of instructor. Pass-fail grading. A minimum of 6 weeks of full-time employment by an industry participating in the summer program. Selected engineering problems in an industrial environment.

3333 Thermodynamics (3) Prereq.: PHYS 2101 and MATH 2101 or equivalent, or senior standing in mechanical engineering majors. Basic laws of thermodynamics, availability, perfect gases and pure substances, fluid flow, and basic heat transfer.

3603 Instrumentation and Measurement (3) Prereq.: EE 3590, ME 3343; and proficiency in English as required by the College of Engineering. 2 hrs. lecture; 3 hrs. lab. Basic science and technology of instrumentation and measurement systems; fundamental measurement theory; statistical error estimation; error propagation; instrumentation and data acquisition; analog and digital instrumentation fundamentals; data acquisition and analysis; extensive technical report writing.

3633 Manufacturing Processes & Methods (3) Prereq.: CM 1020 and CM 3400, or equivalents, or senior standing in the College of Engineering. 3 hrs. lecture; 3 hrs. lab. Modern manufacturing processes integrated into total manufacturing systems; CAD/CAM flexible manufacturing systems; metal casting; forming; removal; welding processes and machinery; fine measurement, inspection, and quality assurance.

3701 Materials of Engineering Laboratory (1) Prereq.: proficiency in English as required by the College of Engineering; ME 2723 or 2733; and credit or registration in CE 3400. Demonstrative and participative experiments to develop extensive knowledge of characteristics of metals, ceramics, and plastics.

3752 Material Selection for Mechanical Engineers (2) S Prereq.: ME 3701 or equivalent, or senior standing in registration in CE 3400. Analysis of mechanical and other properties of engineering materials required for material selection; advanced engineering materials in mechanical engineering; applications and problems in processing and shaping; materials in selected mechanical systems.

3834 Fluid Mechanics (4) F Prereq.: ME 2334, 3133; and a grade of "C" or better in MATH 2090. Statics, kinematics, and dynamics of continuum liquids and gases; conservation laws (mass, momentum, energy); integral analysis; differential analysis; dimensional analysis and similarity; internal and external viscous flows, compressible flows.

3903 Special Projects for Undergraduates (3) Prereq.: 2.50 QPA and consent of department. May be taken for a max. of 9 hrs. of credit. Library research, comprehensive design problems, and laboratory investigations.

4133 Machine Design I: Kinematics of Machinery (3) F Prereq.: ME 2533 and 3133, or equivalent. Kinematic and dynamic analysis and synthesis of mechanisms.

4143 Mechanical Vibrations (3) Prereq.: CE 3400, ME 3343, 4433; and a grade of "C" or better in MATH 2090, or equivalent. Basic principles of oscillating mechanical systems; single and multiple degrees of freedom; dynamic balancing; applications to mechanical systems; continuous systems vibrations.

4153 Kinematic Synthesis of Mechanisms (3) S Prereq.: ME 4133 or equivalent. Three-dimensional mechanisms; mechanical advantage; acceleration; collisions; dynamic joints.

4163 Intermediate Dynamics (3) F Prereq.: ME 1133 and a grade of "C" or better in MATH 2090. Rotating reference frames, rigid body kinematics in three dimensions, central force motion, variable mass problems, and Lagrange's equations.

4183 Theory and Design of Mechanical Control Systems (3) F Prereq.: grade of "C" or better in MATH 2090, 3343, and credit or registration in ME 3834. Basic principles, concepts, characteristics, and performance of linear feedback control systems; stability of linear systems; frequency response methods; compensator design in the frequency domain.

4201 Mechanical Engineering Design Laboratory (1) Prereq.: ME 2334, 3133, or equivalent. 3 hrs. lab. Experiments involving basic concepts in machine design.

4202 Mechanical Engineering Capstone Design II (2) Prereq.: ME 3400, 4133, 4433, 4553. 6 hrs. lab. Principles from heat transfer, thermodynamics, design, fluids, and materials courses utilized to complete the project set forth in the preliminary design outline submitted in ME 4243.

4243 Mechanical Engineering Capstone Design I (3) Prereq.: ECON 2030, ME 2212, 2424, senior standing in the College of Engineering, credit or registration in ME 3633, 3752, 4483, or equivalent. 2 hrs. lecture; 2 hrs. lab. Design project will be selected and approved (first-year experience) in ME 4242; project feasibility study and outline of the design project will be completed; design methodology, optimization, product reliability and liability, economics, use of ASME codes, and professional ethics.

4244 Machine Design II: Strength Considerations and Component Design (4) S Prereq.: CE 3400 and credit or registration in ME 4133. Design, three-dimensional stress analysis; deflection and stiffness; static and dynamic loading; failure theories and fatigue; fasteners; welded joints; mechanical springs; bearing; gears; shafts; clutches; breaks and couplings; belts and pulleys.

4253 Introduction to Bearing Design and Lubrication (3) Prereq.: ME 2723 or 2733 or equivalent. 2 hrs. lecture; 2 hrs. lab. Analysis and design of tribological components particularly hydrodynamic bearings; computational modeling and other modern developments in the subject.

4353 Advanced Engineering Thermodynamics (3) S Prereq.: ME 2334 or equivalent. Postgraduate treatment of laws of thermodynamics; equilibrium and maximum entropy postulate; non-equilibrium and irreversible relationships; principles and application to general systems.

4383 Thermal System Design (3) Prereq.: ECON 2030, ME 2334, and ME 4433. Principles and practices concerning the design and optimization of thermal systems.

4433 Heat Transfer (3) Prereq.: ME 2334 or 3333, ME 3834; a grade of "C" or better in MATH 2090; or equivalent. Principles of heat transfer by conduction, radiation, and convection.

4443 Introduction to Combustion (3) S Prereq.: ME 4433. Basic principles of combustion and their application in solving engineering problems.

4453 Laser Methods in Engineering (3) Prereq.: senior standing in the College of Engineering. Basic principles of lasers and their application to engineering problems.

4454 Mechanical Engineering Capstone Design III (2) Prereq.: senior standing in the College of Engineering. 6 hrs. lab. Design project will be selected and approved (second-year experience) in ME 4242; project feasibility study and outline of the design project will be completed; design methodology, optimization, product reliability and liability, economics, use of ASME codes, and professional ethics.

4573 Advanced Materials Analysis (3) F Prereq.: ME 2333, 3701 or equivalent. 1 hr. lecture; 6 hrs. lab. Concepts and operation of modern analytical instruments using electron beams and X-rays; macroscopic and microscopic examination of materials coupled with separate and combined testing of mechanical, tribological, and corrosion properties.

4733 Deformation and Fracture of Engineering Material (3) F Prereq.: CE 3400 and either ME 2733 or equivalent. Effect of temperature and strain rate on the deformation of metals, ceramics, and composites; fracture toughness; fracture of engineering materials, including metals, ceramics, and composites.

4743 Kinetics in Materials Processes (3) Prereq.: ME 2334, 2733 or equivalent. Applications of the principles of diffusion, phase transformation, and thermodynamics to describe the kinetics of micro structural evolution in engineering materials.

4763 Fundamentals of Corrosion Science and Engineering (3) F Prereq.: ME 2733 or equivalent, and any first course in thermodynamics. Corrosion principles; polarization, passivation, inhibition, and other phenomena; principal methods used in corrosion prevention.

4783 Composite Materials: Manufacturing, Properties, and Design (3) Prereq.: ME 2333 and CE 3400 or equivalent. Constituent materials, micro- and macro mechanics, mechanical behavior, fracture, manufacturing and design of composites and components, including polymer, ceramic, and metal matrix materials.

4812 Interdisciplinary Fluid Dynamics: Physical Concepts (3) Prereq.: Diff. Equations and Introductory Physics. Also offered as HNRS 4813. An introduction to fluid dynamics from a multi-disciplinary perspective, emphasizing theoretical, mathematical and physical concepts of fluid flows, and their application to a range of physical and industrial situations.


4843 Gas Dynamics (3) Prereq.: ME 2334; a grade of "C" or better in MATH 2090; or equivalent. Derivation and review of basic equations of compressible fluid flow; reduction of the general problem to 1-D flow; 1-D flow in nozzles and with friction; 1-D flow with heat addition; normal shock wave, Prandtl-Meyer turn, and oblique shock waves.

4853 Turbomachinery (3) Prereq.: ME 2334, 3834, and 4433. Preliminary design of axial- and radial-flow pumps, compressors, and turbines; determination of optimum flow angles and dimensions for blade design, blade selection, and performance prediction.

4933 Advanced Topics in Mechanical Engineering (3) May be taken for a max. of 6 hrs. of credit; various topics vary. Two sections may be taken concurrently.

4934 Special Problems in Aerospace Engineering (3) Prereq.: senior standing in mechanical engineering or related discipline. May be taken for a max. of 6 hrs. of credit when topics vary. Aerodynamic topics of special interest in the analysis and design of water, land, air, and space transportation systems.
7495 Seminar (1) F | S Elective seminar especially for undergraduate minors in nuclear science, and undergraduate majors in physics and mathematics with a concentration in medical physics. Course may be repeated on audit basis only.

7101 Advanced Trajectory Methodology for Biological Sciences (3) F | PreReq.: MEDP 4401. 2 hrs. lecture/demonstration; 3 hrs. lab. Qualitative and quantitative aspects of tracer applications in modern biological research; combining tracers with other analytical methods.

7111 Advanced Medical Imaging Physics (3) F | PreReq.: MEDP 4101. MATE 1552. Mathematical advanced research and clinical imaging physics; theory of image formation; quantitative analysis of imaging systems by Fourier methods and Q/acceptance testing; Radioscan formula and theory of image reconstruction; tracer methodology for quantitative imaging.

7121 Radiobiology (3) | PreReq.: MEDP 4331 or consent of instructor. 2 hrs. lecture; 3 hrs. lab. Effects of ionizing radiation on cellular, molecular, and organ systems levels of biological organization; study of x-rays, gamma rays, accelerators, beams, and neutrons in interaction with living systems; cohesive treatment of radiation biophysics with applications in medical physics and radiation oncology.

7210 Clinical Principles of Radiation Therapy (3) S | PreReq.: MEDP 7210, 7310. Open only to students currently enrolled in the Master of Science in Medical Physics and Health Physics program. Introduction by practicing radiation oncologists to the selection and application of radiation therapy, general oncology considerations, tumor radiobiology, non-intentional effects of radiation, and altered fractionation. Discussion of tumor biopsy and behavior, normal tissue effects, and treatment planning and delivery techniques for specific organ systems.

7240 Clinical Radiation Therapy Physics Rotation (3) F | PreReq.: MEDP 7331. Open only to students currently enrolled in the Master of Science in Medical Physics and Health Physics program. Under the direction of the clinical staff, introduction to the radiation therapy clinic and clinical duties of the medical physicist in patient treatment planning, monitor unit calculations, construction of treatment aids, treatment delivery techniques, in-room dosimetry, dose measurements, and quality assurance associated with external beam photon and electron therapy.

7260 Advanced Clinical Radiation Therapy Physics Rotation (2) S | PreReq.: MEDP 7260, MEDP 7270. Open only for students currently enrolled in the Master of Science in Medical Physics and Health Physics program. Under the supervision of clinical medical physics staff, introduction to the planning, delivery, and dosimetric aspects of advanced radiation therapy treatments such as brachytherapy, stereotactic radiosurgery, total skin electron therapy, intensity modulated radiotherapy, and image guided radiotherapy and to the advanced physical practices of accelerator quality assurance and radiation therapy shielding design.

7331 Radiation Therapy Physics (3) | PreReq.: MEDP 4331. Fundamental physical principles, operation of delivery equipment, treatment planning principles, methods of dose calculation, determination of irradiation time from dose prescription, dose measurement, and quality assurance for external beam therapy (photons and electrons) and internal brachytherapy.

7358 Radiation Shielding (2) | PreReq.: MEDP 4331, 7331. Calculation of source term, geometric transformations, and attenuating factors associated with photon, neutron, and charged particle radiation; the calculation of dose and dose equivalents, current governmental regulations and professional recommendations for shielding; shielding design for industrial facilities.

7537 Radiation Interactions and Transport (3) F | PreReq.: PHYS 2101 or equivalent, CSC 2262 or equivalent experience in computer programming. Also offered as PHYS 7537. Photon, electron, and positron interactions and energy deposition, the Boltzmann equation, elementary analytical solutions; deterministic computational methods including Monte Carlo and discrete ordinates techniques; continuous slowing down
Camp Five week course conducted at an Army post with enrollment in summer session prior to departure for Advanced 3013 ROTC Advanced Camp (3) S Prereq.: MILS 3011 and 3012. To receive academic credit, student must enroll in summer session prior to departure for Advanced Camp. Five week course conducted at an Army post with instructors and cadets representing ROTC programs from the United States, Puerto Rico, and Guam. Intense leadership application and training in military skills; oral and written orders, light infantry tactics and weapons systems, and confidence building events.

3011 Professional Leadership I (3) S Preq.: MILS 3012, 2 hrs. lecture; 6 hrs. lab. Not for graduate credit. Senior standing required. Leadership and fundamental principles that guide Army officers at every stage of a military career.

3012 Professional Leadership II (3) S Preq.: MILS 4011, 2 hrs. lecture; 6 hrs. lab. Not for graduate credit. Senior standing required. Leadership skills in designated command and staff positions and other practical settings; topics include: professional ethics, Military Justice System, Supply and Logistics, Personnel and Administration, battle analysis, Code of Conduct.

4055 Civil War (3) See HIST 4055.

4066 Military History of the United States (3) See HIST 4066.

4130 World War II (3) See HIST 4130.

4995 Special Topics in Military History (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary.

MUSIC • MUS

Applied Music and Ensemble Courses
Admission to applied music courses is by audition only. Secondary and primary applied courses, MUS 2130-2152 and 3130-3154, are offered for 2 or 3 credits. Students who elect 2 credits will receive 10 minutes of individual instruction per week; students who elect 3 credits will receive 60 minutes of individual instruction per week. Graduate applied courses are offered for 2-6 credits.

All applied music and ensemble courses may be repeated for credit every semester.

APPLIED MUSIC COURSES

All students registering for 2130-54 and 3130-54 may be required to participate concurrently in one of the following major performing organizations: MUS 4222, 4233, 4243, 4253, 4235, 4245, 4251, 4252, 4254, or 4261.

Secondary Applied Music Courses

These courses are designed for students who are not qualified to either major or minor in the specific instrument designated by the course number.

2130 Secondary Piano (2-3)

2131 Primary Piano (2-3)

2132 Secondary Harpsichord (2-3)

2133 Secondary Organ (2-3)

2134 Secondary Harp (2-3)

2135 Secondary Violin (2-3)

2136 Secondary Viola (2-3)

2137 Secondary Cello (2-3)

2138 Secondary String Bass (2-3)

2139 Secondary Flute (2-3)

2140 Secondary Oboe (2-3)

2141 Secondary Clarinet (2-3)

2142 Secondary Saxophone (2-3)

2143 Secondary Bassoon (2-3)

2144 Secondary Trumpet (2-3)

2147 Secondary Trombone (2-3)

2148 Secondary Tuba (2-3)

2149 Secondary Percussion (2-3)

2151 Secondary Composition (2-3)

2152 Secondary Guitar (2-3)

2153 Secondary Electroacoustic Composition (2-3)

2154 Secondary Jazz Studies (2-3)

Primary Applied Music Courses

These courses are for students whose declared major or minor is the specific instrument designated by the course number.

3130 Primary Piano (2-3)

3131 Primary Cello (2-3)

3132 Primary Piano (2-3)

3133 Primary Harpsichord (2-3)

3134 Primary Organ (2-3)

3135 Primary Violin (2-3)

3136 Primary Viola (2-3)

3137 Primary Cello (2-3)

3138 Primary String Bass (2-3)

3139 Primary Flute (2-3)

3140 Primary Oboe (2-3)

3141 Primary Clarinet (2-3)

3142 Primary Saxophone (2-3)

3143 Primary Bassoon (2-3)

3144 Primary Trumpet (2-3)

3145 Primary French Horn (2-3)

3146 Primary Euphonium (2-3)

3147 Primary Trombone (2-3)

3148 Primary Tuba (2-3)

3149 Primary Percussion (2-3)

3151 Primary Composition (2-3)

3152 Primary Guitar (2-3)

3153 Primary Electroacoustic Composition (2-3)

3154 Primary Jazz (2-3)

Graduate Applied Music Courses

7030 Graduate Voice (2-6)

7031 Graduate Piano (2-6)

7032 Graduate Harpsichord (2-6)

7033 Graduate Organ (2-6)

7034 Graduate Harp (2-6)

7035 Graduate Violin (2-6)

7036 Graduate Viola (2-6)

7037 Graduate Cello (2-6)

7038 Graduate String Bass (2-6)

7039 Graduate Flute (2-6)

7040 Graduate Oboe (2-6)

7041 Graduate Clarinet (2-6)

7042 Graduate Saxophone (2-6)

7043 Graduate Bassoon (2-6)

7044 Graduate Trumpet (2-6)

7045 Graduate French Horn (2-6)

7046 Graduate Euphonium (2-6)

7047 Graduate Trombone (2-6)

7048 Graduate Tuba (2-6)

7049 Graduate Percussion (2-6)

7051 Graduate Composition (2-6)

7052 Graduate Guitar (2-6)

7053 Graduate Electroacoustic Composition (2-6)

7054 Graduate Jazz Studies (2-6)

7055 Graduate Collaborative Keyboard (2-6)

ENSEMBLE COURSES

Admission to ensemble courses is by audition only, with the exception of 4230, 4232, and 4233. These courses are open to all students, including freshmen and sophomores. Courses marked with an asterisk (*) will satisfy the major ensemble requirement.

4220 Piano Ensemble (1) May be repeated for a max. of 6 sem. hrs. for degree credit.

4221 Vocal Chamber Music (1)

4222 Woodwind Chamber Music (1)

4223 Brass Chamber Music (1)

4224 String (or Piano and Strings) Chamber Music (1)

4225 Collegium Musica (1)

4226 Percussion Ensemble (1)

4227 Marimba Ensemble (1)

4228 Contemporary Music Ensemble (1)

4229 Harp Ensemble (1)

4230 Gospel Choir (1)

4231 Swing Choir (1)

*4232 Men's Chorus (1)

*4233 Women's Chorus (1)

*4234 University Chorus (0-1)
1751 Music Appreciation (3) Primarily for nonmusic majors. Credit will not be given for this course and MUS 1755. The art of music, with emphasis on listening skills; a non-technical approach to understanding vocabulary and materials of music; correlation of musical literature with other disciplines in the humanities.

1755 Honors Music Appreciation (Pr) Primarily for qualified students not majoring in music. Credit will not be given for this course and MUS 1751 or 1752. Study of the musical art emphasizing the development of critical listening skills and a non-technical, but thorough musical vocabulary; additional emphasis placed on the historical correlation of both vernacular and art music to corresponding developments in the other fine arts disciplines.

1799 Rudiments of Music (3) Not open to music majors. The graduating major in music and elementary construction leading to a study of vocal harmony.

1800 Technology in Music Education (2) Majors only. Introduction to technology in school music programs; includes discussion of the role and application of technology in K-12 school music settings.

2000 History of Jazz (3) Open to nonmajors. Survey of the evolution of jazz and jazz styles.

2018 Diction for Singers III (1) Required of all voice performance majors. Advanced study of phonetics and pronunciation for German and French songs; utilizing the International Phonetic Alphabet; pronunciation concepts supported by recitation and performance of representative song repertoire.

2019 Diction for Singers IV (1) 1 hr. lecture; 1 hr. lab. The phonetic alphabet and French diction.

2053 Survey of Music History I (3) Prereq.: grade of "C" or better in MUS 1732 or 1733. Music of Western Civilization to ca. 1750.

2054 Survey of Music History II (3) Prereq.: grade of "C" or better in MUS 1732 or 1734. Music of Western Civilization from ca. 1750 to the present.

2175 Beginning Folk Guitar (3) Beginning level performance class; emphasis on literature and techniques used in the performance of folk music; basic music theory analysis.

2300 Instrumental and Vocal Techniques (1-2) May be taken for credit. For prospective secondary school teachers of music, a 2 hrs. lecture; 1 hr. lab. Woodwind and brass techniques for instrumental majors, and instrumental and choral techniques for vocal majors each may be taken for 2 hrs. of credit; percussion, strings, and voice for instrumental majors may be taken for 1 hr. of credit only. Development of fundamental skills in wind, string, and percussion instruments and voice.

2400 Jazz Fundamentals for Elementary School (3) Music fundamentals, materials, methods, and skills involved in teaching general music in the elementary school.

2731, 2732 Music Theory I, II (4, 4) Prereq.: grade of "C" or better in MUS 1732 is prerequisite for MUS 2731; grade of "C" or better in MUS 2731 is prerequisite for MUS 2732. 2 hrs. lecture; 2 hrs. lab. Basic tonal harmony and voice leading, phrase structure, analysis of musical form and genre; sight-singing and keyboard harmony skills, and composition.

2733, 2734 HONORS: Music Theory I, II (4, 4) Same as MUS 2731, 2732, with special honors emphasis for qualified students.

2741 Composition Techniques I (1-2-3) Prereq.: permission of instructor. May be taken for a max. of 9 sem. hrs. of credit. Development of basic skills in composition; analysis and audition of selected scores.

2751 Jazz Improvisation (1) Prereq.: MUS 2732 or equivalent. Introductory performance course in jazz improvisation; emphasis on its theoretical basis.

2752 Jazz Improvisation II (2) Prereq.: MUS 2751 or sight-reading proficiency of MUS 2751.

3000 HONORS in Music (1-4) Prereq.: junior standing. May be taken for a max. of 6 sm. hrs. of credit. Preparation of an honors project.

3018 Vocal Pedagogy (3) Prereq.: 12 sm. hrs. of applied voice study. Principles and processes of voice production; psychology of teaching and studying singing; beginning comparative pedagogy; vocal repertoire for the beginning singer.

3020 American Musical Theatre (3) See THTR 3020. Open only to music majors. Credit will not be given for this course and MUS 1751 or 1752. Study of the musical art emphasizing the development of critical listening skills and a non-technical, but thorough musical vocabulary; additional emphasis placed on the historical correlation of both vernacular and art music to corresponding developments in the other fine arts disciplines.

3030 Percussion Literature and Pedagogy (2) Prereq.: 12 sm. hrs. of applied percussion instrument study or consent of instructor. May be repeated once. Independent study in solo and ensemble literature for percussion instruments.

3031 Percussion Literature and Pedagogy (2) Prereq.: 12 sm. hrs. of applied percussion instrument study or consent of instructor. May be repeated once. Independent study in solo and ensemble literature for percussion instruments.

3032 Stringed Instrument Pedagogy (2) Prereq.: 12 sm. hrs. of applied instrument pedagogy study or consent of instructor. Independent study in solo and ensemble literature for stringed instrument for instrument in stringed instrument.

3075 Choral Literature and Conducting I (1) 1 hr. lecture, 2 hrs. lab. Elements of conducting choral groups.

3076 Choral Literature and Conducting II (2) Prereq.: MUS 3075 or equivalent. 1 hr. lecture, 2 hrs. lab. Continuation of MUS 3075.

3077 Organ Literature, History, and Design (3) MUS 3077 is prerequisite for MUS 3078. Evolution and development of the organ and its literature; development of keyboard (organ) firms, techniques, and idiomatic styles; organ mechanism and action; tonal structure; design problems.

3077 Instrumental Conducting I (2) Elements of conducting instrumental groups.

3078 Instrumental Conducting II (2) Prereq.: MUS 3077 or equivalent. 1 hr. lecture, 2 hrs. lab. Continuation of MUS 3078.

3099 Directed Studies in Music (1-3) Prereq.: consent of departmental faculty concerned and dean of the School of Music. May be taken for a max. of 6 sm. hrs. of credit. MUS 3999 cannot be used in lieu of a required course in any School of Music curriculum.

3099 Music Workshops (1-3) MUS 1109 only. May be repeated for credit when topics vary. Topics announced in advance.

4004 Fundamentals of Musical Theatre Technique and Repertoire (1) Prereq.: permission of instructor. May be taken for a max. of 2 sm. hrs. of credit. Fundamentals of musical theatre style singing and repertoire; emphasis on vocal and stage performance of literature appropriate to the singer.

4020 Introduction to the Alexander Technique (1) 2 hrs. lab. Teaching the basic principles of the Alexander Technique; students will begin the process of psychological re-education through experimental movement exercises and hands-on work with the instructor.

4030 Meditation for Performers (1) 2 hrs. lab. Not for graduate credit. Pass/fail grading. Exploration of the various traditions, techniques, and objectives of meditation as they apply to the practice of music.

4041 Piano Accompanying (1) Open to pianists by permission of instructor. Course may be repeated for a max. of 6 sm. hrs. of credit. Individual projects in principles and practical applications of accompanying.

4120 Reed Making for Double Reed Majors (1) 1 hr. lab. Recommended for all oboe and bassoon majors. May be taken for a max. of 6 sm. hrs. but with a max. of 2 sm. hrs. credit towards any degree. Principles of double-reed making with development of individual skill and application of reed making and finishing.

4124 String Literature (2) Prereq.: 12 sm. hrs. of applied string instrument study or consent of instructor. May be repeated once. Independent study in solo and ensemble literature for stringed instruments.

4126 Woodwind Literature (2) Prereq.: 12 sm. hrs. of applied wind instrument study or consent of instructor. May be repeated once. Independent study in solo and ensemble literature for woodwind instruments.

4128 Brass Literature and Pedagogy (2) Prereq.: 12 sm. hrs. of applied brass instrument study or consent of instructor. May be repeated once. Independent study in solo and ensemble literature and methods and materials for instruction in brass instruments.

4130 Percussion Literature and Pedagogy (2) Prereq.: 12 sm. hrs. of applied percussion instrument study or consent of instructor. May be repeated once. Independent study in and ensemble literature and methods and materials for instruction in percussion instruments.

4172 Stringed Instrument Pedagogy (2) Prereq.: 12 sm. hrs. of applied string instrument study or consent of instructor. Independent study in methods and materials for instruction in stringed instruments.

4173 Woodwind Instrument Pedagogy (2) Prereq.: 12 sm. hrs. of applied wind instrument study or consent of instructor. Independent study in methods and materials for instruction in woodwind instruments.
4215 Music Technology I (3) 3 hrs. lab. For majors only or by consent of instructor. Fundamentals of computer applications for educational uses in music; historical and social contexts of computer development; fundamentals in computer systems; configuring hardware; survey of commercial music software; and use of software applications.

4216 Music Technology II (3) Prereq.: MUS 4215 or equivalent. 3 hrs. lab. Advanced applications of hardware and software unique to music applications: notation, sequencing, technological applications of digital audio, video, and acoustical sound. Specifically applied to the music education environment.

4241 Opera Theater (2) Admission by audition. 4 hrs. lab plus individual coaching. May be taken for a max. of 8 hrs. of credit toward the master's degree. May not be taken concurrently with MUS 9007. Students must schedules this course both fall and spring semesters; unless permission to schedule only one semester is granted by the instructor. Techniques of the musical theater; preparation and performance of operatic scenes and complete operas.

4242 Acting for Opera (1-2) Prereq.: permission of instructor. May be taken for a max. of 4 sem. hrs. of credit. Techniques of acting for opera; training in audition skills; stage movement, stage makeup, and vocal and dramatic techniques for operatic roles.

4351 Song Literature I (2) The art song repertoire from the classical songs of Haydn and Mozart to the Romantic period.

4352 Song Literature II (2) The art song repertoire from the French mélodic to contemporary English and American songs.

4400 Orchestral Repertoire for Instrumentalists (1) Prereq.: Permission of instructor. May be taken for a max. of 3 sem. hrs. of credit. Standard orchestral excerpt repertoire for instrumentalists, including: preparation; score study and analysis; specialized practice techniques; and audition strategies. Emphasis on the performance of orchestral excerpts.

4500 Musical Theatre Production (1-3) Also offered as THTR 4500. Admission by audition. May be taken for a max. of 4 sem. hrs. of credit toward any degree. Techniques of musical theatre production, including all production aspects, preparation aspects, preparation and performance of musical scenes and complete shows.

4701, 4702 Organ Practicum (2, 2) Prereq.: consent of instructor. MUS 4701 is prerequisite for 4702. Techniques of service playing; techniques and materials of organ pedagogy.

4703 The Scientific Bases of Music (2) Musical acoustics; ear and generation of sound; computation of intervals and scales within various systems of tuning and temperament.

4710 Advanced Aural Skills (3) Prereq.: a grade of "C" or better in MUS 3731. Concentrated work in sight singing with a special emphasis upon skills needed for professional activities, conducting and composition.

4712 Advanced Form and Analysis (3) Prereq.: a grade of "C" or better in MUS 3732. Complex forms and harmonic techniques of the 19th century to the present.

4718 Styles and Practices of Beethoven and theRomantics (3) Prereq.: a grade of "C" or better in MUS 3732. Tonality, harmony, and form in music of the Romantic period; analysis of selected literature and creative writing in the Romantic style.

4719 Styles and Practices of the Late Romantics and Transition to the Modern Era (3) Prereq.: a grade of "C" or better in MUS 3732. Tonality, harmony, and form from Wagner through the Impressionistic period; analysis of selected literature and creative writing in Ultra-Classic and Post-Classic styles.

4720 Post-Tonal Styles and Practices (3) Prereq.: a grade of "C" or better in MUS 3732. Study of principal currents of musical composition in the modern era; analysis of selected works and creative application of techniques, procedures, and formal schemes studied.

4721 Modal Counterpoint (3) Prereq.: a grade of "C" or better in MUS 2532 or equivalent. Writing and analysis of counterpoint with modal bases.

4723 Tonal Counterpoint (3) Prereq.: a grade of "C" or better in MUS 2532 or equivalent. Writing of counterpoint in two and three voices, including given cantus firmus; imitative contrapuntal forms such as the invention and the fugue.

4730 Elementary Orchestration (2) Prereq.: grade of "C" or better in MUS 3732. Orchestration for full orchestra including extraordi-

4731 Intermediate Orchestration (2) Prereq.: MUS 4730. Orchestration for full orchestra including extraordi-

4735 Jazz Arrangement (2) Prereq.: a grade of "C" or consent of instructor. Jazz arranging styles and techniques, from Dixieland to modern jazz.

4738 Business of Music (2) Surveys of contracts, legalities, economies of production planning as they relate to performers, teachers, and composers of music in the fields of recording, concerts, publishing, broadcasting, motion pictures, and musical theater; copyright; performance rights societies, unions, and guilds.

4745 Computer Music (3) May be taken for a max. of 6 hrs. of credit when topics vary. Digital sound design, sound synthesis, and signal processing; electroacoustic music composition using computers and computer music techniques.

4746 Seminar in Computer Music and Digital Media (3) Prereq.: MUS 4743 or consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. Focused study of various topics in computer music and digital media such as computer music programming, sound diffusion techniques, interactive computer music and digital media systems, intermedia applications, analysis of computer music.

4747 Music, Technology, and Society (3) History and critical study of the impact of electronics and recording technologies on music and its subsequent impact on the role of music in society.

4749 Seminar in Music History (3) Prereq.: grade of "C" or better in MUS 2533 and 2534 or equivalent or permission of instructor. May be taken for a max. of 6 sem. hrs. when credit topics vary.

4750 Music of the Middle Ages and the Renaissance (3) Prereq.: grade of "C" or better in MUS 2533 and 2534 or consent of instructor. The history of music from ca. 800 to 1600.

4753 Folk and Traditional Music: Music History and Literature (2) Background and history of folk and traditional music; emphasis on Anglo-American folk songs.

4757 Piano Literature I (3) A survey of the keyboard repertoire from the late renaissance through Haydn and Mozart.

4758 Piano Literature II (3) A survey of piano literature from Beethoven to the present.

4761, 4762 The Care and Repair of Band and Orches- tral Instruments (1, 1) Prereq.: MUS 2301 or equivalent. 2 hrs. lab. For students with experience in instrumental music and a practical knowledge of the problems in instrument repair and maintenance.

4763, 4764 Piano Methods and Materials (3, 3) Materials and techniques for the piano teacher.

4766 Marching Band Techniques (3) Charting tech- niques for marching band; emphasis on contemporary drill design; practical drill.

4767 Piano Design, Construction, and the Theory of Tuning and Temperament (2) 1 hr. lecture; 2 hrs. lab. Open only to music majors. Piano and harpsichord design, construction, regulation, voicing, and tunings; knowledge important to pianists; laboratory experience in tuning, regulation, and voicing.

4769, 4770 Supervised Studio Instruction (2, 2) Program tailored to needs of each student by the major applied teacher who supervised the student's studio teaching program.

4772 Harp Technique and Maintenance (2) Required of all harp majors. Individual projects and study of harp history and development; design and regulation.

4773 Orchestral Repertoire for Harp (1) Required of all harp majors. May be taken for a max. of 6 hrs. of credit. Independent study of major orchestral excerpts; includes audition preparation.

4774 Harp Pedagogy (2) Required of all harp majors. Independent studies in materials and methods for the harp teacher.

4791 Introduction to Opera (3) Open to majors and nonmajors. History, production, and performance of opera from 1600 to the present.

4796 Senior Project in Music Theory (2) A written pro- ject on a selected topic in music theory. Required as a pre-}
7721 Survey of Choral Literature I (3) A survey of choral literature with the Classical period ending with contemporary music for chorus, with emphasis on preparation for performance.

7723 Survey of Wind Literature I (2) A survey of chamber wind literature (6-20 performers) from the late Renaissance to the present.

7724 Survey of Wind Literature II (2) A survey of orchestra, large wind ensemble, and large wind band literature (more than 20 performers) from the French Revolution to the present.

7725 Survey of Symphonic Literature I (2) A survey of orchestral works beginning with the Baroque period, music and ending with the early Romantic; emphasis on preparation for performance.

7726 Survey of Symphonic Literature II (2) A survey of orchestral works beginning with the Romantic period and ending with 20th century music for orchestra, with emphasis on preparation for performance.

7741 History of Music Theory I (3) Prereq.: MUS 3703, 3704, and 3710 or successful passing of the Music Theory and History Diagnostic Examinations. History of technical writings on music, ca. 500-1600: acoustics, notation, and the rise of counterpoint, mensuration, musical poetics, speculative theory.

7742 History of Music Theory II (3) Prereq.: MUS 3703, 3704, and 3710 or successful passing of the Music Theory and History Diagnostic Examinations. Music theory from ca. 1600 to 1900: development of species counterpoint and figured bass theory; the rise of harmonic theory and rhythmic phrase analysis; 19th-century expansions of harmonic theory and formal analysis.

7745 Advanced Computer Music (3) Prereq.: MUS 3742 or consent of instructor. A course in digital sound synthesis and composition; foundational concepts; computer music performance, and algorithmic composition using computers; survey of representative music from the genre.

7746 Graduate Seminar in Computer Music and Digital Media (3) Prereq.: MUS 7745 or consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. Focused study of various topics in computer music such as development of new computer music systems, interactive computer music, multimedia composition, alternative human-computer interfaces for music, sound installations, and advanced analysis of computer music.

7747 History of Electroacoustic Music (3) The history of the genre from 1920 to the present, with an emphasis on the development of electronic music, sound installations, and advanced analysis of computer music.

7751 Ancient and Medieval Music (3) Prereq.: MUS 3750 or successful passing of the Music History Diagnostic Examination. History of music from ancient Greeks and Hebrews through the 14th century.

7752 Music of the Renaissance (3) Prereq.: MUS 3750 or successful passing of the Music History Diagnostic Examination. Music of the 15th and 16th centuries.

7753 Music in the Baroque Era (3) Prereq.: MUS 3750 or successful passing of the Music History Diagnostic Examination. Music of the Baroque era.

7754 Music in the Classical Era (3) Prereq.: MUS 3750 or successful passing of the Music History Diagnostic Examination.

7755 Music in the Romantic Era (3) Prereq.: MUS 3750 or successful passing of the Music History Diagnostic Examination.

7756 Music in the Modern Era (3) Prereq.: MUS 3750 or successful passing of the Music History Diagnostic Examination.

7757 American Music (3) Prereq.: MUS 3750 or successful passing of the Music History Diagnostic Examination. Compositions of major American composers.

7760 Performance Practices (3) Prereq.: MUS 3710 or successful passing of Electroacoustic Composition. Primary and secondary source materials dealing with the performance of music in the 17th and 18th centuries; their application to the interpretation of music.

7762 Measurement and Evaluation in Music (3) Teacher-designed and standardized tests in music; learning theories.

7763, 7764 Comparative Methods in Music Education (3, 3) Techniques in teaching music; functional projects; approaches and tests evaluated with emphasis on curriculum construction; 7763 deals with elementary grades, 7764 with secondary.

7765 Philosophical Bases for Music Education (3) Various philosophical bases for music education including their origin, function, development, and implementation.

7766 Current Issues in Music Education (3) Develop broad perspectives from a multi-faceted review of issues affecting music education practice. Examine important contexts from which effective teachers make informed decisions.

7767 Experimental Research in Music (3) Prereq.: ELRIC 4806 and MUS 7005. Primarily for doctoral students in music. Systematic investigation of behavioral and musical learning; collection, quantification, and treatment of data; current research.

7771, 7772 Advanced Choral Conducting (3, 3) Prereq.: previous study of conducting. Each course may be taken once for the MM and once for the DMA or PhD. Independent study of the techniques required to conduct all styles of choral music with emphasis on score analysis and performance practices.

7773, 7774 Advanced Band Conducting (3, 3) Prereq.: previous study of conducting. Each course may be taken once for the MM and once for the DMA or PhD. Independent study of the techniques required to conduct all styles of choral music with emphasis on score analysis and performance practices.

7775, 7776 Advanced Keyboard Literature I, II (3, 3) Prereq.: MUS 4757, 4758, or equivalent. Each course may be taken twice; once for the MM and once for the DMA. Genres and styles from earliest examples of keyboard literature through the most recent trends.

7797 Master's Pedagogy Project (2) Pass-fail grading. Completion of a 45-minute oral presentation and short supporting paper on a pedagogical topic.

7798 Master's Recital (1-3) Prereq.: MUS 4797 or equivalent. May be taken for a max. of 3 sem. hrs. of credit.

7799 Advanced Coaching in Applied Music (2) May be repeated for credit. Max. amount of credit applicable towards a degree is 4 sem. hrs.

7800 Introduction to Research in Music (3) Required of all doctoral students; recommended for master's students who will write theses. Development of music research skills with emphasis on selection and use of resources; sources and types of written materials; use of library facilities; practice in a clear and logical writing style; and use of wide variety of methodologies and models of inquiry.

7801 Psychology of Music (3) Physical and psychological bases of musical phenomena including physical properties of sound production, reception, and perception; affective, physiological, and cognitive responses to musical stimuli; and learning theories as related to musical development, ability, and preference.

7901 Composition (1-3) Individual instruction for graduate composition. Participation in the Composer's Forum is considered part of the course work and is, therefore, required. May be repeated for credit.

7903, 7904 Seminar in Music History (2-3, 2-3) Prereq.: MUS 3710 or successful passing of the Music History Diagnostic Examination: Each course may be taken 3 times for credit when topics vary. Only 6 sem. hrs. applicable to the MM degree; only 12 additional sem. hrs. applicable to the PhD; maximum for MM and PhD combined is 18 sem. hrs.

7905, 7906 Seminar in Music Education (2-6, 2-6) Each course may be taken 3 times for credit when topics vary. Only 6 sem. hrs. applicable to the MMEd degree; only 12 additional sem. hrs. applicable to the PhD; maximum for MMEd and PhD combined is 18 sem. hrs.
104 Foundations of Music Education (3) Prereq.: MUS 3703 and credit for or registration in ED 1000. Credit will not be given for both this course and ED 1000. 2 hrs. lecture; 1 hr. lab. Course is for music majors only. Field experiences in music at the elementary and secondary levels; historical and philosophical foundations, introduction to instructional strategies, professional organizations, legal aspects, and national standards of music education.

170 Orientation to Music Education (1) Course may be repeated for a max. of 2 sem. hrs. of credit. An overview of the music education profession; orientation to collegiate music study; and initial field experiences in the schools.

2045 Teaching Music in Diverse Settings (3) Prereq.: MUS 1000. Credit will not be given for both this course and ED 2045. Site-based teaching practice: 2 hrs. lecture; 2 hr. teaching practicum each week. Managerial aspects of music program; application of research in music teaching and learning principles to the classroom and rehearsal setting.

3170 Principles of Teaching Elementary School Music (3) Prereq.: MUS 2045. 3 hrs. lab. Credit for or registration in ED 2045. Methods, and current trends in music teaching at the elementary level; curriculum development.

3171 Principles of Teaching Secondary School Music (3) Prereq.: MUS 2045. Methods, and current trends in music teaching at the secondary level; rehearsal techniques.

3630 Student Teaching in Music (3) Prereq.: see “Requirements for Student Teaching” in the School of Music section of this catalog. 1 hr. lecture; 30 hrs. lab. Pass-fail grading.

NUCLEAR SCIENCE • NS

General education courses are marked with stars (★).

3411 Fundamentals of Nuclear Reaction Science (3) F.S. Prereq.: one sem. of MATH 1221 or equivalent and one sem. of chemistry or physics; 2 hrs. lecture; 3 hrs. lab. Nuclear structure, transmutations, decay, interactions of radiation with matter; radiation detection and measurement.

4141 Radioscience (3) F. Prereq.: NS 4101 or equivalent. 2 hrs. lecture; 8 hrs. lab. Radio tracers, stable tracers, and radiation effects in both natural and laboratory-contained communities of organisms.

4352 Environmental Radiological Evaluation and Remediation (2) S Prereq.: NS 4341 or permission of instructor. Methods of surveying and sampling to determine radiological concentrations; federal and state regulations governing remediation criteria; models and computer codes used to estimate dose; remediation planning and implementation.

4353 Environmental Radiological Evaluation and Remediation Laboratory (1) S Prereq.: for or concurrent enrollment in NS 4352. Laboratory supplement to NS 4352. Sampling and analytical techniques used to measure radionuclides in the environment.

4527 Nuclear Reactor Theory and Design (3) F.S. Prereq.: two semesters of physics and an introductory course in computer programming. Characteristics of radioactive materials, neutron interactions, the fission process; static criticality, time-dependent behavior of cores, and design issues.

4566 Nuclear Reactor Systems (3) F. Prereq.: NS 4527 or equivalent. Engineering aspects of reactor systems; nuclear fuel cycles, isotope separation, mechanical and thermal design, performance of materials, and environmental impact of nuclear facilities.

4570 Nuclear Facility Safety (3) S Prereq.: PHYS 2102 or equivalent. Safety analysis of facilities that utilize radiation sources including hospitals and industrial sites; accident sequences; dispersal of radionuclides; estimation of dose and dose commitments; and engineered safeguards.

7115 N-15 Stable Tracer Methodology for Biological Sciences (2) S-E. Prereq.: consent of instructor. 1 hr. lecture; 3 hrs. lab. Quantitative N-15 tracer applications and methodology in biological nitrogen systems, combining N-15 procedures with mass spectrometer techniques.

7520 Nuclear Reactor Materials (3) V Principles governing structure and properties of materials used in nuclear reactors; radiation effects, problems in selection, fabrication, and use of these materials.

7525 Nuclear Engineering Laboratory (2) S Prereq.: credit or registration in NS 4341. Lab. Operation of nuclear counting and spectroscopy systems; measurements of neutron behavior in multiplying and non-multiplying media; development of design parameters from empirical data.

7527, 7528 Reactor Engineering (3,3) F.S. Prereq.: consent of department. NS 7527 is prerequisite for 7528. Basic concepts of reactor physics; slowing-down theory, homogeneous and heterogeneous reactors; diffusion and transport theories for neutron flux calculations; criticality calculations; one-group, two-group, and multigroup methods; core burn up analysis.

7529 Nuclear Reactor Dynamics (3) S Prereq.: NS 7527 and credit for or registration in NS 4527. Analysis of a reactor system; reactor analysis; analytical and numerical point kinetics calculations; perturbation theory expressions for reactivity; feedback effects; reactor transfer functions and stability; coupled neutrons and thermal hydraulic transients; space-time kinetics.

7555 Nuclear Reactor Analysis (3) S Prereq.: MATH 4218 or 4320 and NS 7527, or equivalent. Numerical methods and solutions to multigroup neutron diffusion and transport equations; lattice physics methods; nodal techniques; applications to fuel cycle problems; core reactivity feedback core physics analysis; calculation of temperature coefficients; advanced reactor systems.

7566, 7567 Advanced Nuclear Reactor Systems (3,3) F.S. Prereq.: NS 4527 or equivalent. Engineering aspects of fissile reactor systems, including fuel behavior, energy removal, materials selection, and core interface with the balance of the plant.

7575 Two-Phase Flow and Heat Transfer (3) Prereq.: ME 4433 or equivalent. Modeling and analysis of liquid-vapor flow systems and applications in nuclear reactor design and safety; nuclear phenomena; boiling heat transfer, burnout, condensation; flow instabilities, critical flow, loss of coolant accidents.

OCEANOGRAPHY AND COASTAL SCIENCES • OCS

General education courses are marked with stars (★).

★ 1005 Introduction to Oceanography (3) An honors course, OCS 1006, is also available. The world’s oceans, their origin and evolution; interactions between physical, geological, chemical, and biological processes in the marine environment; use and abuse of oceans.

★ 1006 HONORS: Introduction to Oceanography (3) Similar to OCS 1005 with special honors emphasis for qualified students. Interaction of physical, geological, chemical, and biological processes of the ocean; effect of human activities.

2008 Introduction to Marine Sciences: Life Processes (4) S 3 hrs. lecture; 1 hr. lab. Does not satisfy major field course requirements for students in natural science curricula. Also offered as BIOL 208 at Southern University in Baton Rouge. Life and environmental processes in marine and aquatic settings; their influence on coastal Louisiana.

2009 Introduction to Marine Sciences: Geological and Physical (3) S 3 hrs. lecture; 1 hr. lab. Does not satisfy major field requirements for students in natural science curricula. Geological and physical processes of the marine and aquatic environments; their influence on coastal Louisiana.

2010 Introduction to Waves and Beaches (3) Introduction to the physical and geological coastal oceanographic processes that shape the coastal zone; various aspects of coastal environments; and human interaction with these environments.

2095 Introduction to Marine Sciences (4) Su only Prereq.: introductory science course. Four weeks at Louisiana Universities Marine Consortium coastal laboratories. Physical, chemical, geological, and biological processes in the oceans and coastal environments and their interactions; interrelationships of man and the marine environment.

3103 Global Environmental Cycles (3) Prereq.: CHEM 1201 and MATH 1550; credit or registration in BIOL 281. Major hydrologic and elemental cycles on the planet, global change and processes, energy balance, including problems associated with climate, pollution, population, and resources.

4001 Special Topics in Oceanography and Coastal Sciences (1-6) V May be taken for a max. of 9 sem. hrs. of credit.

4005 Special Field Topics in Oceanography and Coastal Sciences (1-6) V May be taken for a max. of 9 sem. hrs. of credit when topics vary. Variable number of weeks at Louisiana Universities Marine Consortium (LUMCON) or Gulf Coast Research Laboratory (GCRL).

4010 Marine Science for Teachers (4) Su only Four-week short course offered at various locations by Louisiana Universities Marine Consortium. Credit not applicable to a degree in marine sciences. Survey of the marine sciences; secondary and elementary school levels.
Virus-host interactions in disease induction emphasizing 4094 or equivalent. See BIOL 7289 or equivalent. Bioc hemistr y of Virus es (3) S -E virulence factors, mechanisms of host-parasite interaction; appropriate use and interpretation of epidemiological methods.

7410 Mechanisms of Cellular Immunology and Immunopathology (3) S -Prereq.: BIOL 4211 or equivalent. Mechanisms involved in the development of protective and pathologic immune responses; emphasis on the humoral and cellular components of inflammation and immune response to microbial infections.

7516 Advanced Diagnostic Pathology of Animals (1-2) V Prereq.: DVM degree or equivalent. May be taken for a max. of 5 sem. hrs. of credit when topics vary. Necropsy of various animals submitted for postmortem examination: gross, light, and electron microscopy, immunohistochemistry; correlation and synthesis of clinical information, anatomical finding, and other ancillary laboratory results, for an accurate determination of disease diagnosis and pathogenesis.

7525 Advanced Veterinary Clinical Pathology (1-2) V Prereq.: DVM degree or equivalent. May be taken for a max. of 5 sem. hrs. of credit when topics vary. Diagnosis and pathogenesis of hematologic and chemical changes in blood from various animal species; understanding the application, instrumentation, and mathematical methods of assays and quality assurance; interpretation of cytological specimens (tissues and fluids) and correlation with clinical and histopathological findings.

1010 Introduction to Petroleum Engineering (2) F Prereq.: MATH 1021. Scientific bases of petroleum geology and chemistry, exploration, drilling, production, reservoir engineering, and refining.

2045 Drilling Engineering (3) Prereq.: CE 2200 and credit or registration in PHYS 2101. Physical properties of reservoir rock related to the production of oil and gas.

3023 Rock and Fluid Properties Laboratory (1) S Prereq.: credit in PETE 2031 and/or 2012, and registration in the other course. 3 hrs. lab.

PETROLEUM ENGINEERING • PETE

1007 Pathological Sciences Research Techniques (1-4) V Prereq.: consent of instructor. May be taken for a max. of 8 hrs. of credit. Topics of current interest in pathological sciences.

5024 Current Literature in Pathological Sciences (1) V Prereq.: consent of instructor. May be taken for a max. of 8 hrs. of credit. Topics of current interest in pathological sciences.

7543 Laboratory Animal Pathology (2) V Prereq.: DVM degree or equivalent and consent of instructor. Basic mechanisms of pathogenesis and development of functional changes in cells and extracellular matrix.

7502 Advanced Systemic Veterinary Pathology (5) V Prereq.: DVM degree or equivalent and concurrent enrollment in PBS 7516. Study of diseases by organ systems, using electron and light microscopy; pathogenesis of specific diseases.

7508 Histopathology Slide Conference (1) F Prereq.: DVM degree or equivalent and consent of instructor. May be taken for a max. of 4 hrs. of credit when topics vary. Histopathological aspects of diseases in various animal species; direct student participation in morphological description and literature review.

7509 Surgical Pathology (1-2) V Prereq.: DVM degree or equivalent and PBS 7516. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Gross and microscopic examination of surgically-derived specimens of diseased tissues from various animals; clinical case interpretation, histopathological description, diagnosis, prognosis, and consultation techniques.

7513 Anatomy of Neoplasia (2) V Prereq.: DVM degree or equivalent and credit in PHYS 2101. Comparative gross, microscopic, immunohistochemical, and pathogenic study of naturally occurring neoplastic disease in animals.

7514 Laboratory Animal Pathology (2) V Prereq.: DVM degree or equivalent and consent of instructor. Macroscopic, microscopic, and pathogenic study of the infectious, nutritional, degenerative, and toxic diseases that affect the commonly used species of laboratory rodents, rabbits, and primates.

7515 Veterinary Dermatology (2) V Prereq.: DVM degree or equivalent and PBS 7516. 1 hr. lecture; 2 hrs. lab. Histopathological evaluation of integumentary system, tissue response, and diseases of various animal species of veterinary interest.
4046 Well Design-Production (3) Prereq.: PETE 4045. Analysis and design of well production systems; rod pumping, gas gathering.

4050 Reservoir Dynamics (3) Prereq.: PETE 2032 and MATH 2053. Fundamentals of reservoir flow; application to single-phase flow, well testing, gas reservoir engineering; waterflooding fundamentals.

4051 Reservoir Estimation and Reservoir Management (3) F Prereq.: PETE 3025, 3035, and IE 3020. Quantitative study and behavior prediction of volumetric and water-drive reservoir systems by material balance.

4056 Numerical Simulation of Improved Recovery Processes (3) Prereq.: PETE 4045 and 4050 and 4051. Use of computer simulation to predict oil and gas reservoir performance and to design enhanced recovery processes.

4058 Reservoir Mechanics Laboratory (1) Prereq.: PETE 4051. 3 hrs. lab. Simulation of reservoirs with physical models; fluid flow in porous media.

4060 Prevention of Oil and Gas Well Blowouts (1) S process, synergy between process productivity and environmental performance.

4088 Formation Evaluation (3) V Prereq.: PETE 3034. Use of different evaluation formation techniques to provide a comprehensive view of reservoir content productivity; drilling fluid and cutting analysis; core analysis; formation tester; drillstem test; analysis of openhole logs by statistical methods; comparison of standard tools and evaluation methods.

4089 Natural Gas Engineering (3) V Prereq.: PETE 4031. Application of reservoir engineering principles and practices to gas-condensate reservoirs; prediction of gas well performance; management of all types of gas reservoirs; underground gas storage.

4241 Special Topics in Petrophysics Engineering Design (3) Prereq.: senior or graduate standing and permission of instructor. May be taken for a max. of 6 hrs. credit when topics vary. One or more phases of current petroleum engineering design.

4253 Utilization and Appraisal of Petroleum Properties (3) V Prereq.: PETE 3025, 3035, and 4051. Technical aspects of unitization and evaluation of petroleum properties subject to joint management.

4999 Senior Project I (1) F, S, Prereq.: senior status in the College of Engineering. Written and oral presentation required. First phase of theoretical and/or experimental investigations of an approved topic in petroleum engineering.

4999 Senior Project II (1) F, S, Prereq.: 4998 and senior status in the College of Engineering. Written and oral presentation required. Theoretical and/or experimental investigation, including a literature review, of an approved topic in engineering.

7195 Reservoir Characterization (3) Prereq.: GEOL 7195. Fluid Flow in Porous Media (3) V Prereq.: PETE 4050 and 4056, or equivalent. General hydrodynamic equations for the porous media; two-dimensional flow problems and potential theory methods; gravity flow systems; two-fluid systems; systems of non-uniform flow; application of systems using computed streamline tracking methods.

7202 Advanced Well Testing Theory and Analysis (3) V Prereq.: PETE 4030 and 4045 or equivalent. Unsteady-state theory of pressure transient analysis; application of theory to pressure buildup analysis, well interference testing, pulse testing, pressure drain down analysis, drill stem testing, and water influx prediction.

7211 Production System Analysis (3) V Prereq.: CE 2200, MF 3333 and PETE 4046 or equivalent. Use of multiphase flow correlations to determine flow rates in single-phase reservoirs; pressure traverses in flowing oil wells, gas-condensate wells, gathering systems, and pipe lines; applications of correlations to the design of gas lift systems.

7212 Well Completion Design (3) V Prereq.: PETE 4046 or consent of instructor. Systems analysis for optimum production by designing best combination of tubing, flow lines, choke sizes, perforation density, and separator pressure; inflow performance of reservoirs; well completion techniques; gravel packing; tubing effects.

7221 Drilling Data Acquisition and Processing (3) V Prereq.: PETE 4050, 4060, and 4048 or equivalent. Mud and surface drilling data acquisition and processing; downhole data acquisition with drilling stopped and while drilling, data processing, formation evaluation and data analysis.

7222 Downhole Production Fluid Dynamics (3) V Prereq.: PETE 4046, 4050, and 4048 or equivalent. Wellbore sidewall core and fluid recovery; data analysis and completion techniques; thermodynamic properties of fluids; downhole production data acquisition and interpretation; cased hole formation evaluation.

7231 Nonthermophysical Methods of Enhanced Oil Recovery (3) V Theory and field practice relative to miscible displacement processes and chemical and polymer flooding techniques.

7232 Thermal Methods of Oil Recovery (3) V Theory of heat transfer and heat generation applied to the performance prediction of oil recovery by such field processes as forward and reverse in situ combustion, continuous and cyclic hot fluid injection, and production well heating.

7241, 7242 Selected Topics in Advanced Petroleum Engineering (3) V May be repeated for credit when topic varies; a total of 12 sem. hrs. of credit may be earned in these two courses.

7256 Special Problems in Petroleum Engineering (1-4) F, S. May be taken for a max. of 6 sem. hrs. of credit. Individual study and research.


7285 Statistical Reservoir Modeling (3) Prereq.: permission of instructor. Theory and practice of modeling uncertainty associated with complex reservoir properties; subsurface reserves; distributions, transforms, Beyesian updating, varograms/correlograms, estimation and coestimation with various kriging methods, conditional simulation.

7999 Seminar (1) All graduate students are expected to attend this course every semester. Only 1 sem. hr. of credit will be allowed towards the degree: Pass/ Fail grading.


PHILOSOPHY • PHI

General education courses are marked with stars (★).

★ 1000 Introduction to Philosophy (3) Major works on such themes as appearance and reality, human nature, nature of knowledge, relation of mind and body, right and good, existence of God and its determination.

★ 1001 HONORS: Introduction to Philosophy (3) Prereq.: ENGL 1002 or equivalent. Same as PHIIL 1000, with a special honors emphasis for qualified students. Credit will not be given for both this course and PHIIL 1000.

★ 1021 Introduction Logic (3) No special background presupposed. Formal and informal reasoning; introduction to propositional logic; formal and informal fallacies; scientific reasoning.

2009 Contemporary Moral Problems (3) Philosophical study of contemporary moral issues, such as capital punishment, preferential treatment, sexual equality, sexual liberation, terrorism, and war and arms, animal rights, world hunger, environmental ethics, and the morality of suicide.

2010 Symbolic Logic I (3) Classical propositional and first-order predicate logic; syntax and semantics of formal languages; translation between natural languages and English; formal methods of proof.

2018 Professional Ethics (3) Special problems of obligation and valuation related to law, medicine, politics, and education, as well as business, engineering, and architecture; altruism, trust, vocation, codes of honor, professional privilege, and responsibilities for others arising from differential abilities.

2020 Ethics (3) Classical and recent theories of obligation and value, including works of philosophers such as Plato, Aristotle, Kant, Hume, and Nietzsche; including freedom, rights, justification of moral judgments.

2023 Philosophy of Art (3) Philosophical theories of beauty, art, and art criticism.

2024 Philosophy in Literature (3) Philosophical themes in world literature: fiction, poetry, drama, and autobiography.

2025 Biologies (3) Defining health and disease; deciding on medical duties, and obligations in the patient-physician relationship; abortion and the concept of a person; defining and determining death; euthanasia and the dignity of death; allocation of medical resources, both large-scale and small-scale; experimentation with fetuses, children, prisoners, and animals; genetic testing, screening, and interference.

2028 Philosophy of Religion (3) Same as REL 2025. Essence and meaning of religion as a pervasive phenomenon in human societies; faith and reason, nature of divinity, arguments for and against God's existence, religious knowledge and experience, morality and cub, the problem of evil.

2033 History of Ancient and Medieval Philosophy (3) As honors course, PHIIL 2036 is also available. Introduction to philosophy through a study of some of the main writings of classical and medieval philosophy.

2034 HONORS: Tutorial in Ancient and Medieval Philosophy (1) To be taken concurrently with PHIIL 2035. 1 hr. of tutorial instruction per week for honors students.

2035 History of Modern Philosophy (3) As honors course, PHIIL 2036 is also available. Introduction to philosophy through a study of some of the main writings of modern philosophy.

2036 HONORS: Tutorial in Modern Philosophy (1) To be taken concurrently with PHIIL 2035. 1 hr. of tutorial instruction per week for honors students.

2035 HONORS: History of Ancient and Medieval Philosophy (3) Prereq.: one course in philosophy, HRNS 1002/ 1003 or 2002/2004, or equivalent. Same as PHIIL 2033 with a special honors emphasis for qualified students. Supervised reading, discussion, research, and writing.

2745 Knowledge and Reality (3) Introduction to central epistemological and metaphysical questions: mind and matter; causation and free will; space and time; meaning and truth; the nature of knowledge and justified belief; perception, memory, reasoning, and testimony as sources of knowledge and justified belief.

2760 Logic, Science, and Society (3) Prereq.: completed analytical reasoning area of general education or consent of instructor. Logic: evidence, probability, and induction; objectivity and relativism; technology and utopia.

2953 HONORS: Philosophical Colloquium (3) Prereq.: a grade of “B” or higher in at least one other philosophy course; or consent of instructor. Subject drawn from prominent philosophical works.

2963, 2964, 2965 HONORS: Independent Work for Honors Students (1,1,1) Prereq.: sophomore standing; completion of at least 5 hrs. of philosophy with a grade of “B” or higher, and a GPA of at least 3.0 in all work taken. Readings, conferences, and reports under faculty direction.

3001 Environmentalism (3) Basic themes of existentialist philosophy; the works of Kierkegaard, Nietzsche, Jaspers, Heidegger, Camus, Marcel, and Sartre.

3002 Philosophy and Film (3) Films of philosophical texts.
3003 French Existentialism (3) Major themes, issues, and theories of the French existentialist; existential essence and the question of being: death, nothingness, and anxiety; freedom, responsibility, and values; the ethical and the other. Prereq.: PHIL 2000 or consent of instructor.

3020 Special Topics in Philosophy (1-3) May be taken twice for credit when topics vary.

3052 Moral Philosophy (3) May be taken twice when topics vary. Topics in ethics and meta-ethics: egoism, consequentialism, deontology, moral relativism, virtue ethics, values, ethics and religion; naturalistic fallacy, truth and justification, realism and objectivity, motivation and practical reasoning, autonomy, and game theory.

3090 Friedrich Nietzsche (3) See GER 3090.

3110 The Philosophy of Socrates (3) Early dialogues of Plato; Socrates on pleasure, friendship, justice, courage, temperance, wisdom, and happiness; on knowing the limit and recognizing the worse; on reason and inspiration; Socratic irony.

3590 Introduction to Epistemology (3) Survey of central issues in the theory of knowledge; knowledge as justified true belief; the problem of induction; induction as a source of justification; a priori knowledge; fallibilist vs. infallibilist and internalist vs externalist conceptions of justification; structural and foundational theories.

4002 Philosophy of Film (3) Theories of film.

4003 Contemporary French Philosophy (3) Major contemporary French philosophers, including Bergson, Sartre, Merleau-Ponty, De Beauvoir, Levinas, Derrida, Foucault, Nancy, Ricouer, Marion, Jancaud; themes such as the rethinking of ethics, the question of humanism, and political thought; intellectual movements such as structuralism and poststructuralism, phenomenology, hermeneutics and deconstruction, feminism and psychoanalysis.

4010 Symbolic Logic II (3) Prereq.: PHIL 2010 or consent of instructor. Syntax and basic model theory of classical first order logic; soundness and completeness.

4011 Topics in Advanced Logic (3) Prereq.: PHIL 4010 or consent of instructor. Also offered as LING 4011. Topics may include advanced metatheory of symbolic languages, intensional logics, and Montague grammar.

4015 Philosophy of Male and Female (3) Philosophical examination of the theory of human nature that underlie a variety of theories about women and femininity.

4018 Political Ethics (3) See POLI 4018.

4786 Selected Topics (3) May be taken for a max. of 6 sem. hrs., when a maximum of 6 sem. hrs. of credit is awarded for the topic. Topics in current areas in such areas as theory of perception, theory of truth, metaphysics, ethics, philosophy of mind and action.

4920 Presocractic Philosophy (3) Prereq.: PHIL 2033 or equivalent. Study of the major Presocratic philosophers from Thales up to and including the Sophists.

4922 Plato (3) Prereq.: PHIL 2033 or equivalent.

4924 Aristotle (3) Prereq.: PHIL 2033 or equivalent. Topics from Aristotle’s Metaphysics, Physics, De Anima, and the logical treatises.

4926 Hellenistic Philosophy (3) Prereq.: PHIL 2033 or equivalent. Study of the major Hellenistic Philosophical Schools: the Epicureans, the Stoics, and the Sceptics.

4928 Medieval Philosophy (3) Also offered as REL 4928. Analysis of key themes, traditions, and figures in medieval philosophy.

4931 Descartes, Spinoza, and Leibniz (3) Prereq.: 6 hrs. of philosophy or consent of instructor. 17th century rationalist thought and the development of metaphysics and theology.

4933 Locke, Berkeley, Hume (3) Language, epistemology, ontology, self, God, causation, realism, and idealism in the writings of these British empiricists.

4935 Kant (3) Prereq.: PHIL 2035 or equivalent. Basic topics and arguments of Kant’s Critique of Pure Reason.

4936 19th Century Philosophy (3) Prereq.: PHIL 2033 and, or equivalent. 19th century philosophy, with emphasis on German thought; readings in Fichte, Hegel, Marx, Nietzsche, Bergson, and others.

4938 Philosophical Thought in America (3) Late 19th and early 20th centuries. Prereq.: 6 hrs. of credit when topic varies. Total credit earned as a graduate student in PHIL 4991 and PHIL 7991 combined may not exceed 9 hrs.

7901 Seminar in Continental Analytical Philosophy (3) Philosophy of language, metaphysics, realism, antirealism and philosophy of logic and mathematics.

7904 Seminar in Continental Philosophy (3) Major figures and/or movements in continental philosophy.

7905 Seminar in History of Philosophy (3) May be taken for a max. of 9 hrs. of credit when topics vary. Study of a major philosopher or school of philosophy.

7910 Seminar (3) May be taken for a max. of 6 hrs. of credit when topics vary. Total credit earned as a graduate student in PHIL 4991 and PHIL 7991 combined may not exceed 9 hrs.

8000 Thesis Research (1-12 per sem.) “S”/“U” grading.

PHYSICAL SCIENCE • PHSC

General education courses are marked with stars (•).

1001 Physical Science (3) Prereq.: MATH 1021. Credit will not be given for both this course and any other college-level physics course. First half of a two-semester survey course in the physical sciences; topics in the first semester are taken primarily from the field of physics.

1002 Physical Science (3) Prereq.: PHYS 1001. Credit will not be given for both this course and any other college-level astronomy course. Second half of a two-semester survey course in the physical sciences; topics in the second semester are taken primarily from the fields of astronomy, chemistry, and geology.

1021 Physical Science with Laboratory (3) F.S. Prereq.: MATH 1021 or 1029. Credit will not be given for this course and PHYS 1001. 2 hrs. lecture; 2 hrs. lab. Exposition of physical science concepts through laboratory investigations; topics such as nature of matter, forces and motion, electricity and magnetism, and sound.

1022 Physical Science with Laboratory (3) F.S. Prereq.: MATH 1021 or 1029. Credit will not be given for this course and PHYS 1001. 2 hrs. lecture; 2 hrs. lab. Exposition of physical science concepts through laboratory investigations; topics such as energy, light, color, and energy, and observational astronomy.

PHYSICS • PHYS

Prerequisites • All prerequisites in physics courses should be rigidly observed.

Corequisites • A student may not continue in a course after completing a corequisite course prior to the last day of the midsemester examination period.

Of the 7000-level courses, those numbered in the 7200s, as well as 7345, 7383, 7598, and 7411 are offered every year; 7353 and 7373 every other year. All other courses are offered sporadically as interest demands and in order to provide a varied curriculum.

General education courses are marked with stars (•).
and Mathematics (3) Prereq.: PHYS 2021 or 2102. Prereg for PHYS 2020; PHYS 2001; 3 hrs. lecture/demonstration. Credit will not be given for these courses and PHYS 1201, 1202 or 2101, 2102. 2 hrs. lab. Credit will not be given for both this course and PHYS 1201, 2001. Mechanics, wave motion, thermodynamics, and kinetic theory.

2101 General Physics for Technical Students (3) Prereq.: PHYS 1100 or placement by examination; credit or registration in PHYS 2001 or 2101. Mechanics, wave motion, thermodynamics, and kinetic theory.

2102 General Physics for Technical Students (3) Prereq.: PHYS 1100 or placement by examination; credit or registration in PHYS 2001 or 2101. Mechanics, wave motion, thermodynamics, and kinetic theory.

2108 Introductory Physics Laboratory (1) Prereq.: credit or registration in PHYS 2001 or 2101. 3 hrs. lab. Credit will not be given for both this course and PHYS 1208. Laboratory to accompany PHYS 2001 or 2101.

2109 General Physics Laboratory (1) Prereq.: PHYS 2108 and credit or registration in PHYS 2002 or 2102. 3 hrs. lab. Credit will not be given for both this course and PHYS 1209. Laboratory to accompany PHYS 2002 and 2102; electricity, magnetism, geometrical and physical optics, and sound. 2 hrs. lab. Credit will not be given for both this course and PHYS 1202, 2002. Electricity, magnetism, physical optics, and topics from modern physics.

2111 Elementary Mathematical Physics (3) F Prereq.: PHYS 1202 or 2102; and credit in MATH 1552. Mathematical methods of physics; vector calculus, complex variables, Fourier series, eigenvalue determinants, differential equations with application to selected problems in physics.

2209 Introductory Modern Physics (3) F Prereq.: PHYS 1202 or 2102. Electrically charged particles, electron motion in magnetic and electric fields, atomic structure, nuclear energetics, nuclear reactions, and quasistatic electromagnetic fields in vacuo and in dielectric and magnetic media.

2210 Introduction to Concepts in Physics (3) V Prereq.: MATH 1021 or an ACT math score of at least 25. Primarily for students in liberal arts and education. Historical evolution and underlying philosophy of principles of physics; principles of quantification of physics; does not develop technical skill.

2211 Computational Science (1) Prereq.: PHYS 2221; or PHYS 1202 or 2102 and MATH 2057. Basic concepts of mechanics with emphasis on corresponding mathematical techniques.

2213 Electricity and Magnetism (3) S Prereq.: PHYS 1102 or MATH 4581 and credit in registration in PHYS 2085 or 2090. Electricity and magnetism; static and quasi-static electromagnetic fields in vacuo and in dielectric and magnetic media.

2301 Quantum Physics (3) F Prereq.: PHYS 2001 or 2101. 3 hrs. lecture. Credit will not be given for both this course and PHYS 2002 or 2102. For high school and junior college teachers; part of the MNS degree program. May be taken for a max. of 9 hrs. of credit. Analysis of laboratory experiments in current high school physics curricula; selected experiments in modern physics.

6991 Seminar in Current Developments in Physics Curriculum Materials (1-3) S u only -V Prereq.: PHYS 2002 or 2102. For high school and junior college teachers; part of the MNS degree program. May be taken for a max. of 6 sem. hrs. credit.

7211, 7212 Mathematical Methods of Theoretical Physics (3,3) S F Prereq.: PHYS 4142 or equivalent. PHYS 7211 is prerequisite for 7212. Advanced topics in mathematical methods of theoretical physics; mathematical foundations of quantum mechanics.

7221 Classical Mechanics (3) S Prereq.: of modern physics; and rigid body mechanisms using the methods of Lagrange's equations, Hamilton's equations, canonical transformations, and Hamilton-Jacobi theory.

7223 Mechanics of Deformable Bodies (3) V Prereq.: of inviscid and Newtonian viscous fluids; elasticity of solids.

7224 Advanced Statistical Mechanics (3) Prereq.: PHYS 7411; credit or registration in PHYS 7412. Advanced topics in quantum mechanics and statistical mechanics; operators and matrices, intrinsic and orbital angular moments, perturbation theory, atomic structure, second quantization, and scattering theory.

7336 General Relativity (3) V Prereq.: General tensor analysis; postulates of general relativity, field equations, equations of motion, interior and exterior Schwarzschild solutions; cosmology.

7342 Advanced Quantum Mechanics (3) Prereq.: PHYS 7242. The Lorentz group, relativistic wave equations, introduction to quantum field theory.

7353, 7354 Atomic and Optical Physics I, II (3,3) V Prereq.: PHYS 7242, PHYS 7333 is prerequisite for 7334. Applications of quantum mechanics to atomic systems and their interaction with radiation; spectral levels, photoabsorption and collisions with charged particles.

7368 Low-Temperature Physics (3) V Property of matter at temperatures near absolute zero; methods of producing low temperatures; superfluidity of liquid helium, superconductivity, magnetic effects, and adiabatic demagnetization.

7363, 7364 Condensed Matter Physics (3,3) V Prereq.: PHYS 7225 and 7242. PHYS 7363 is prerequisite for 7364. A survey of quantum mechanics and statistical mechanics to condensed matter; lattice vibrations, energy bands in crystals, transport properties, collective excitations, ferromagnetism and superconductivity; theory of Fermi and Bose quantum fluids, phase transitions, and critical phenomena.

7373, 7374 Nuclear Physics (3,3) V Prereq.: PHYS 4271 and 7243. PHYS 7373 is prerequisite for 7374. Applications of quantum mechanics to the two-nucleon system, to a system of many nucleons, and to nuclear reactions, with comparison between theory and experimental results.

7383, 7384 High Energy Particle Physics (3,3) V Prereq.: PHYS 7321 and 7242. Strong electromagnetic and weak interactions of hadrons and leptons, including symmetries and selection rules; quantum chromodynamics and electroweak theory; accelerator and nonaccelerator experiments including cosmic rays and high energy astrophysics.

7396 Graduate Laboratory (3) S u only -V Prereq.: PHYS 4002. 6 hrs. lab. Practical experience in modern experimental physics laboratory techniques.

7411, 7412 Computational Physics (3,3) Prereq.: PHYS 7242. PHYS 7412 is prerequisite for 7411. Basic numerical techniques for solution of mathematical equations, including coupled linear algebraic and differential equations, and numerical simulation techniques; emphasis on application to physical problems.
Plant Pathology (3) Prereq.: BIOL 1201, 1208 and 1402; or equivalent. 2 hrs. lecture; 3 hrs. lab. Semester hours of credit and consent of instructor. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Lab/field trip may be required. Subjects not covered in other weed science and plant pathology courses.

3818 Forest Insects and Diseases (4) F Prereq.: ENTR 4018. 4054 Introductory Mycology (3) Prereq.: BIOL 1202 and 1209, 3 hrs. lecture; 3 hrs. lab. Same as BIOL 4034. 4444 Physical Geography (3) Prereq.: BIOL 1201, 1208 and CHEM 2060 or 2261. BIOL 3060 recommended. Also offered as BIOL 3444. Introduction to the processes of seeds: their development, dormancy, ecology, and viability.

9001 1001 Fundamental Issues of Politics (3) F,S,Su Central questions at the heart of politics; their significance.


2051 American Government (3) F,S,Su An honors course, POLI 2051, is also available to such areas as civil rights, welfare, urban affairs, taxation, and government spending.

2056 Government of Louisiana (3) F,S,F Prereq.: POLI 2051 or equivalent. State and local government and politics in Louisiana.

2057 Introduction to International Politics (3) F,S,Su Survey of politics in democratic, post-communist, and developing societies; emphasis on major actors and institutions.

2058 Government of the United States (3) F,S,F Prereq.: POLI 2051 or equivalent. State and local government and politics in the United States.

2060 Introduction to Political Theory (3) F,S,Su Basic concepts of analysis of normative and empirical political thought.

2070 Policy Making: An Introduction (3) F,S,Su Sequential process of policy making from problem identification through policy formulation, adoption, implementation, and evaluation of such areas as civil rights, welfare, urban affairs, taxation, and government spending.

3000 HONORS: Thesis (3) Senior (3) Prerequisites: consent of instructor and department chair. Details available from the department during registration.

3896, 3897 HONORS: Readings Course (1-3) S Same as POLI 4956, 4957, with special honors emphasis for qualified students.

3901 Undergraduate Internship in Political Science (1-6) F,S Open to undergraduate students approved by the Department of Political Science. May be counted toward the total number of hours required for a major in political science but not toward fulfilling field requirements. Program of study, research, and work in governmental or private agencies concerned with public policy.

3905 Contemporary Political Issues (3) 1001 Fundamentals of Politics (3) F,S,Su Central questions at the heart of politics; their significance.

3000 HONORS: Thesis (3) Senior (3) Prerequisites: consent of instructor and department chair. Details available from the department during registration.

3990 Contemporary Political Issues (3) F,S,Su Central questions at the heart of politics; their significance.

4000 Special Topics in American Politics (3) F,S,F Prereq.: consent of department. May be repeated for a max. of 6 sem. hrs. of credit when topics vary.

Political Science 329
4001 Research Methods in Political Science (3) F, S, Su
Basic components of the research process in political science, including design and structure of research, modes of observation, and techniques of analyzing data.

4011 Bureaucracy, Politics, and Public Policy (3) S
PreReq.: POLI 2051 or equivalent. Relationships between bureaucracy and politics in formulation and execution of public policy; forces and forms affecting these relationships.

4014 Budgetary Process and Policy Making (3) PreReq.: Budgeting by public agencies; impact of political actors, institutions, and processes on budgetary policies at the national, state, and local levels of government.

4015 American State Politics and Policy Making (3) S
PreReq.: POLI 2051 or equivalent. Political and policy making in the American states; legal, cultural, socio-economic, political, and institutional factors affecting the formulation, implementation, and evaluation of American state public policies.

4018 Urban Politics and Policy Making (3) V PreReq.: POLI 2051 or equivalent. Political problems in urban governance: the political environment of American cities, private sources of power, political machines and reform, crime and violence, service delivery, metropolitan fragmentation, and the consequences of growth and decay; public policy areas include urban public policy and regional development.

4020 American Constitutional Law (3) F PreReq.: POLI 2051 or equivalent. Law of the Constitution and place of the Supreme Court in the American political system; separation of powers; judicial review; federalism, and federal powers.

4021 The American Constitution and Civil Liberties (3) S PreReq.: POLI 2051 or equivalent. Political relevance of major federal constitutional limitations; property rights; First Amendment freedoms; rights of criminal defendants and ethnic minorities.

4022 Jurisprudence (3) S PreReq.: POLI 2051 or equivalent. Legal philosophies of natural law, positivism, idealism, sociological jurisprudence, and legal realism; relationships of law, order, and politics.

4023 Judicial Politics (3) F PreReq.: POLI 2051. Political role of U.S. state and federal courts; organization, staffing, financing; judicial policy making; public perception of the judicial process.

4026 Campaigns and Elections (3) PreReq.: POLI 2051 or equivalent. Examination of campaigns and elections in the U.S. political system at the national, state, and local levels.

4027 Politics of Sexual Diversity (3) PreReq.: POLI 2051 or equivalent. The political meanings of sexual identity; evolution of lesbian and gay social movements and of political organizations that favor and oppose the expansion of gay rights; law, public opinion and policy-making regarding sexual minorities.

4028 Gender and American Politics (3) Also offered as WGS 4028. The role of gender in the political arena in the United States.

4030 Political Attitudes and Public Opinion (3) V Beliefs and attitudes among the mass public; emphasis on attitude formation and change.

4031 Political Parties in the United States (3) F Structure and function of political parties at local, state, and national levels; voting studies of presidential elections.

4032 Interest Groups in American Politics (3) V Interest group politics; effect of voluntary organizations on political behavior.

4034 Political Participation (3) V Voting behavior, conventional participation, and political protest and violence; political behavior and society.

4035 The Legislative Process (3) F PreReq.: POLI 2051 or equivalent. Legislative politics; emphasis on the U.S. Congress; effect of party, constituency, and legislative institutions on legislative behavior and public policy; role of Congress in the American political system.

4036 The American Presidency (3) V PreReq.: POLI 2051 or equivalent. The presidency in the American political system; emphasis on the structure of presidential selection, evolving role of the president, policies of the executive apparatus of the presidency, and presidential interaction with other political institutions and actors.

4038 Blacks and the American Political System (3) V PreReq.: POLI 2051. Interaction of blacks with the American political system since World War II; political resources available to blacks; responses of national organizations and leaders to black aspirations.

4039 Southern Politics (3) V Contemporary politics of the American South; emphasis on Southern politics since Reconstruction.

4040 Special Topics in International Relations (3) F S Su PreReq.: consent of department. May be repeated for a max. of 6 sem. hrs. credit when topics vary.

4041 International Law (3) F PreReq.: POLI 2057 or equivalent. Development of international law; law of peace, war, and neutrality; treaty law; recognition, war crimes, law enforcement, state responsibility, and diplomatic immunities and diplovisations.


4043 American Foreign Policy (3) F "National interest" as guiding consideration in development of American foreign policy from the beginning to the present; importance of the constitutional framework; presidential and congressional leadership; pressure groups and public opinion; changing world environment and American response.

4044 The Contemporary International System (3) V PreReq.: POLI 2057 or equivalent. Developments and trends in the international system since World War II; classical and modern versions of the balance of power; bipolarity, multipolarity, and other elements of systems theory; concept of deterrence and game theory; decision making; policy making; three and conflict-resolution theory.

4046 International Political Economy (3) PreReq.: POLI 2057 or equivalent. Theories of international interdependence, dependence, and integration; politics of decision making on protectionism and international finance; role of multinational corporations in world political economy; North-South debate; economic issues and national security.

4047 Political Psychology in International Relations (3) F S S Su Personality and group psychology in international relations.

4048 International Conflict and Cooperation (3) F S S Su Theories of international conflict, war, and conflict resolution.

4049 Global Environmental Politics (3) F S S Su Political and economic factors affecting the global environment.

4050 Globalization and Politics (3) PreReq.: POLI 2057 or equivalent. Overview of the concepts, theories, and empirical evidence associated with the emerging phenomenon known as globalization, with particular emphasis on its political, economic, and cultural dimensions.

4059 International Politics of the Middle East (3) F International relations among Middle Eastern countries, with special emphasis on the Arab-Israeli conflict; international terrorism, and U.S. policy toward the region.

4060 Special Topics in Comparative Politics (3) F S S Su PreReq.: consent of department. May be taken for a max. of 6 sem. hrs. credit when topics vary.

4061 Comparative Politics in Asia (3) S S Su Government and politics of Middle Eastern countries, with special emphasis on political institutions and processes, the role of Islam, and western influence.

4062 Comparative Political Economy (3) Credit will not be given for both this course and POLI 7796. Cross-regional comparison on the interaction between politics and economics; topics include electoral business cycles, foreign trade, foreign investment, industrial policy, and the environment.

4063 Comparative Political Institutions (3) F S S Su Credit will not be given for both this course and POLI 7792. Comparative analysis of political institutions; emphasis on constitutional design, electoral and party systems, legislatures, cabinets, and parliamentary and presidential structures.

4064 Comparative Politics of Developing Areas (3) V Problems of development confronted by contemporary states and societies of the Third World; emphasis on role of ethnic pluralism, political parties, bureaucracies, and the military.

4065 Latin American Governments and Politics (3) F Governmental and political processes of Latin America; their contributions to modern government.

4067 The Politics of Asia (3) F Governments and politics of modern Asia; contemporary nationalism, political development, revolution, and impact of communism, democracy, and capitalism on Asian states.

4070 NonWestern Political Institutions and Policies of Russia; influence of internal forces, such as culture, ideology, and social structure; political economy, and social problems and policies.

4072 Politics and Government of East Central Europe (3) F Political systems of the former communist states of Eastern Europe; domestic institutions and policies; legacies of communism; political parties and elections.

4074 Politics of the European Union (3) V The political, social, legal, and economic unification of Europe.

4075 Politics of Western Europe (3) National political systems of Western Europe.

4076 The Politics of France and Francophone Areas (3) V The development of political parties and institutions, the French Republic and selected Francophone areas.

4078 African Government and Politics (3) F S S Su Governmental and political processes of Africa; factors affecting governmental performance in modern Africa.

4079 State, Society, and Citizenship in Contemporary China (3) V Political events in contemporary China; emphasis on the state and the citizen in the Reform Era.

4080 American Political Thought (3) V Development of the American liberal-democratic tradition, and dissent to that tradition.

4081 History of Political Theory from Plato to More (3) F Ancient and medieval political thought.

4082 History of Political Theory from Machiavelli to Nietzsche (3) V Early modern European political thought.

4089 Special Topics in Political Theory (3) F S S Su PreReq.: consent of department. May be repeated for a max. of 6 sem. hrs. credit when topics vary.

4096 Contemporary Political Theory (3) V Political thought from Nietzsche to present.

4097 Political Theology (3) Also offered as REL 4097. An exploration of the relationship between theology and politics, from the ancient Greeks and Hebrews to contemporary political theologians; emphasis on the Judeo-Christian tradition, but the political theology of other religious traditions, such as Islam, Hinduism, and Confucianism, may be included.

4098 Politics and Ethics (3) Also offered as PHIL 4098. Ethical theory and its application to politics, domestic and international; ethical issues of public policy and conduct will be examined.

4224 Studies in Literature and Politics (3) See ENGL 4224.

4969, 4977 Readings Course (1-3,3) PreReq.: consent of department. Honors courses, POLI 3896 and 3897, are also available. For junior, senior, and graduate students in the social sciences with a 3.00 average. Individual reading in a specified field of political science.

7000 Professional Development (1) F Pass-fail grading. Political scientist as teacher, researcher, citizen.

7001 Seminar in American Politics (3) V May be taken for a max. of 6 hrs. credit when topics vary.

7002 Graduate Internship in Political Science (1-6) F S Su Open only to graduate students approved by the Department of Political Science for an internship program. May be counted toward total number of hours required in the M.A program but not toward field requirements. Research and development of governmental or private agencies concerned with public policy.

7002 Seminar in Public Policy (3) Also offered as PADM 7002.

7003 Special Topics in American Politics (3) May be taken for a max. of 6 hrs. credit when topics vary.


7018 Seminar in Urban Politics and Policy Making (3)

7020 Seminar in Public Law (3) V May be taken for a max. of 6 hrs. credit when topics vary.

7030 Seminar in Political Behavior (3) V May be taken for a max. of 6 hrs. credit when topics vary.

7031 Seminar in Political Parties (3) V May be taken for a max. of 6 hrs. credit when topics vary.

7032 Seminar in Legislative Politics (3) V May be taken for a max. of 6 hrs. credit when topics vary.

7033 Seminar in Executive Politics (3)

7040 Seminar in International Politics (3) V May be taken for a max. of 6 hrs. credit when topics vary.

7041 Special Topics in International Politics (3) May be taken for a max. of 6 hrs. credit when topics vary.

7042 Seminar in Political Psychology in International Relations (3) Advanced study of cognitive, personality, group, and identity psychology in international relations.
Poultry Science • PLSC

1649 Poultry Science and Production (3) F,S Principles and practices of commercial poultry production.

2040 Techniques of Judging and Evaluating Poultry and Poultry Products (2) F,S 4 hrs. lab. May be taken for a maximum of 6 hrs. at topics vary. Principles and techniques in evaluation of poultry products.

3001 Apprenticeship in the Poultry Industry (3-6) Prereq.: F, S, Su, Jr. standing, with an overall GPA of 2.0 or higher, on all work taken at LSU; consent of department head and industry supervisor. May be taken for a maximum of 12 sem. hrs. of credit. Pass/fail grading. Supervised work in egg processing, broiler processing, feed manufacturing, hatchery management, or flock supervision for a period of not less than two months.

3900 Poultry Research (1-3) F,S,Su Prereq.: consent of department. May be taken for a max. of 6 sem. hrs. of credit. Feeding, breeding, management, and marketing problems.

4031 Incubation and Hatchery Management (2) F-O Prereq.: 6 hrs. of biological science or equivalent; 1 hr. lecture; 2 hrs. lab. Chick development and embryology; incubation principles and practices; hatchery equipment and design; hatchery management.

4032 Science and Technology of Poultry Products (3) Prereq.: Biol. 1040, 1041, or equivalent and PLSC 1049 or higher. 2 hrs. lecture; 2 hrs. lab. Preparation of eggs and poultry for market; methods of maintaining quality during harvesting, grading, and packaging of poultry meat and eggs.

4040 Quality Assurance in the Food Industry (4) See DARY 4040.

4051 Poultry Biology (3) F 2 hrs. lecture; 2 hrs. lab. Structure, conformation, and selection of fowl; emphasis on egg formation and oviposition; other physiological factors of economic importance.

4052 Poultry Management (3) S-F Prereq.: 6 hrs. of biological science or equivalent; 2 hrs. lecture; 2 hrs. lab. Growth and development of the U.S. commercial egg and broiler industries; principles of nutrition, genetics, housing, management, and marketing; types of integrated operations and contract production.

4090 Special Topics in Poultry Science (1-3) Prereq.: consent of department. May be taken for a max. of 6 hrs. of credit when topics vary. Topics from current poultry production or poultry products areas.

7901 Poultry Seminar (1) F,S,Su May be taken for a max. of 4 hrs. of credit during period of graduate study. Graduate students in poultry science must participate in a report and discussion group on current literature in their field.

7900 Advanced Poultry Research (1-5) S,F,Su Prereq.: consent of department. May be taken for a max. of 9 sem. hrs. credit. Research in poultry nutrition, breeding, production, and management aspects.

8000 Thesis Research (1-12 per sem.) S, U-G, U-G grading.

Psychology • PSYC

General education courses are marked with stars (★).

★2000 Introduction to Psychology (3) An honors course, PSYC 2001, is also available. Understanding, prediction, and control of human behavior.

★2001 HONORS: Introduction to Psychology (3) Same as PSYC 2000, with special honors emphasis for qualified students.

★2040 Psychology of Adjustment (3) Adjustment mechanisms in normal adults; abnormal behavior and major personality theories.

2101 Elementary Statistics (3) Prereq.: PSYC 1010, or equivalent. An introductory course in psychological statistics.

2102 Intermediate Statistics (4) Prereq.: PSYC 1010 or equivalent. Continuation of PSYC 1010. Additional emphasis on research and writing.

2103 Advanced Statistics (4) Prereq.: PSYC 1010 or equivalent. Continuation of listening, speaking, reading, and writing skills; emphasis on Brazilian culture.

★2101 Intermediate Portuguese (4) Prereq.: PORT 1102 or equivalent. Continuation of PORT 1102. Additional emphasis on reading and writing.

★2102 Intermediate Portuguese (4) Prereq.: PORT 2101 or equivalent. Continuation of listening, speaking, reading, and writing skills.

Psychology majors: open to others with permission of instructor. Techniques and Societies.

2400 Social Psychology (3) Prereq.: 3 sem. hrs. of psychology or sociology. Cultural forces affecting attitudes, social learning, perception, and communication of individuals and groups.

2600 Educational Psychology (3) Principles of teaching, motivation, development, and evaluation as related to the educational process.

2700 Developmental Psychology of the Life Span (3) Prereq.: PSYC 2000 or equivalent. Survey of developmental processes across the life span.

2701 Child Psychology (3) Prereq.: PSYC 2000 or 2060 or equivalent. Psychological and social development of the child.

2704 Adult Developmental Psychology (3) Prereq.: PSYC 2000 or 2060 or equivalent. Adolescent behavior considered in terms of psychological, social, and physical development.

2999 Undergraduate Practicum in Psychology (1-3) Prereq.: PSYC 2000 or 2060, and consent of instructor; LSU and overall GPA of at least 2.5. May be taken for a max. of 3 sem. hrs. of credit. Student responsible for registering with a faculty member. Individually supervised experience in psychological laboratories and community agencies.

3018 Advanced Experimental Psychology (3) Prereq.: PSYC 2017 or equivalent. 2 hrs. lecture; 2 hrs. lab. Supervised research in general experimental psychology; selection, design, execution, analysis, and reporting of the psychological experiment.

3020 Psychological Tests and Measurements (3) Prereq.: PSYC 2000 or 2060 and a first course in statistics. Test construction, standardization, validation; intelligence, clerical, mechanical, spatial aptitude tests; interest and personality tests.

3050 Introduction to Personnel and Industrial Psychology (3) Prereq.: PSYC 2000 or 2060. Organizational psychology, leadership, job satisfaction, motivation; human relations psychology; human engineering psychology; personnel psychology; industrial, military, and governmental selection, testing, and interviewing; consumer psychology.

★3081 Personality (3) Prereq.: PSYC 2000 or 2060 or equivalent. Determinants and dynamics of personality; theory and research.

3082 Introduction to Abnormal Psychology (3) Prereq.: PSYC 2000 or 2060 or equivalent. Abnormal personality and behavior disorders.


3140 Advanced Social Psychology (3) Prereq.: PSYC 2000 or equivalent. Current theoretical and research developments, existing methodologies and interdisciplinary influences.

3201 Psychological Theories of Religion (3) See REL 3201.

4000 History of Modern Psychology (3) Prereq.: PSYC 2000 or 2001 and 6 additional hrs. of psychology; LSU and overall GPA of at least 2.5. Open to psychology majors; open to other matriculated students with permission of instructor. Historical survey of psychology, with reference to schools of psychology.

4017 Intermediate Research Methods (3) See SOCL 4211.

4030 Psychology of Thinking and Decision Making (3) Prereq.: PSYC 2000 or 2060. Experimental methods and research findings on human thinking, decision making, comprehension, choice behavior, and problem solving.

4031 Sensory and Perceptual Processes (3) Prereq.: PSYC 2000 and 2017, or equivalent. Theories, data, and procedures in sensation and perception.

4032 Psychology of Learning (3) Prereq.: PSYC 2000 or 2001. Behavior from the standpoint of learning; recent experimental literature in the learning area; major theories of learning.

4033 Psychology of Memory and Forgetting (3) Prereq.: PSYC 2000 or 2001. Major theoretical concepts; review of experimental literature in the field of memory and forgetting.

4034 Physiological Psychology (3) Prereq.: PSYC 2000 or 2060; or equivalent. Functioning of the nervous system with respect to sensation, perception, learning, and motivation.
4035 Drugs, the Brain and Behavior (3) Prereq.: PSYC 2000 or consent of instructor. Effects of drugs on the brain, and behavioral and physiological effects of therapeutic drugs and drugs of abuse.

4036 Comparative Psychology (3) Prereq.: PSYC 2000 or consent of instructor. Development across species with reference to evolutionary and genetic factors relevant to understanding human behavior.

4037 Neuropharmacology (3) Prereq.: PSYC 2000 or consent of instructor. Primarily for students in psychology and basic sciences. Basic pharmacology; neurochemical and physiological mechanisms of drug actions on the nervous system; pharmacology of drugs of abuse and psychiatric medications.

4038 Emotion and Motivation (3) Prereq.: PSYC 2000 or equivalent. Theories and empirical findings, with emphasis on how motivation and emotion influence behavior. Theoretical and empirical research, and application. Appropriate for students with consent of instructor.

4040 Research and Theory in Sexuality (3) Prereq.: PSYC 2000 or 2060 and one additional course in psychology; or KIN 2600. Sexual behavior viewed from different theoretical perspectives; emphasis on empirical research literature. 

4050 Advanced Industrial/Organizational Psychology (3) Prereq.: PSYC 2000 or equivalent. Research, theory, and applications in industrial/organizational psychology; focus on psychology of assessment and selection, motivation, leadership, and attitude change. Empirical and clinical approaches.

4070 Developmental Psychology (3) Prereq.: PSYC 2000 or consent of instructor. Theories, development, contemporary issues, and research findings at successive ages of human development; psychological changes throughout the lifespan.

4072 Developmental Psychology of Adulthood and Aging (3) Prereq.: PSYC 2000 or 2060. Theories, issues, and research findings in psychological changes occurring throughout adulthood and later life.

4080 Applied Behavior Analysis (3) Prereq.: PSYC 4032 or graduate standing. Methods, analysis, and intervention in the application of basic learning principles; emphasis on school applications.

4111 Intermediate Statistics (3) Prereq.: PSYC 2000 or 2060 and EKST 2291 or equivalent. LU and overall gpa of at least 2.50. Preparatory for graduate study in statistics and research design in psychology. Open to psychology majors; open to other students with permission of instructor. Emphasis on inferential statistics and hypothesis testing; familiarity with common statistical applications; interpretation of output: major topics include simple and factorial analysis of variance, linear and multiple correlation and regression.

4160 Advanced Educational Psychology (3) Prereq.: PSYC 2000 or equivalent. LU and overall gpa of at least 2.50. Preparatory for graduate study in educational psychology. Psychological theory and research as applied to the teaching-learning process.

4176 Advanced Child Psychology (3) Prereq.: PSYC 2000 or 2060 and 3 additional hrs. of psychology. Psychological theories of child development, child behavior, and research methodology.

4178 Advanced Adolescent Psychology (3) Prereq.: PSYC 2000 or 2060 and 3 additional hrs. of psychology. Psychological theories of adolescent behavior and problems.

4999 Independent Reading and Research in Psychology (1-6) Prereq.: PSU and overall gpa of at least 2.50 and consent of instructor. May be taken for a max. of 6 sem. hrs. credit. Open to juniors or seniors and graduate students with consent of instructor. May be registered with a faculty member and selected a topic of reading or research.

7020 Measurement of Behavior (3) Prereq.: PSYC 4111 or equivalent; graduate standing in psychology or consent of instructor. Techniques and theories of behavior measurement; problems of data collection; reliability, validity, design, and analysis of measurement instruments for the psychological sciences.

7030 Cognitive Basis of Behavior (3) Prereq.: graduate standing in psychology or other matriculated graduate students with consent of instructor. Cognitive processes involved in memory, language, decision making; role of cognitive variables in controlling behavior.

7034 Biological Basis of Behavior (3) Prereq.: graduate standing in psychology or other matriculated graduate students with consent of instructor. Selected biological systems and processes which are the basis of behavior and of the development of a philosophy of teaching.

7040 Social Basis of Behavior (3) Prereq.: graduate standing in psychology or other matriculated graduate students with consent of instructor. Social, organizational, and cultural influences on human behavior; research in social and organizational psychology.

7060 Ethical, Legal, and Professional Issues in School Psychology (3) Prereq.: graduate standing in psychology or equivalent. Legal issues; ethical standards for the school psychologist; legal considerations across diverse roles and settings; legal bases for the practice of school psychology and supervision in administration; legal and ethical responsibilities for psychology students and standards for practice.

7111 Advanced Statistics (3) Prereq.: PSYC 4111 or equivalent; graduate standing in psychology or consent of instructor. Machine calculation, coding, measures of central tendency, variation, correlation, prediction, probability, statistical inference, analysis of variance, multivariate techniques for the psychological sciences.

7117 Methodology and Research Design (3) Prereq.: PSYC 7111 or consent of instructor. Scientific approach to psychological questions, research, design, and methodology; logic and philosophy underlying psychological theory and research; social psychology of the psychological experiment; experimental and quasi-experimental designs; problems in observation and measurement; variables; methodological and philosophical considerations in analysis of data.

7125 Psychological Assessment I (3) Prereq.: graduate standing in clinical or school psychology or consent of instructor. Clinical assessment techniques including individual and group tests; psychological assessment including pre-service and post-service standardized tests.

7126 Psychological Assessment II (3) Prereq.: PSYC 7165 or equivalent; graduate standing in clinical or school psychology or consent of instructor. Theories, research, and contemporary issues related to normal and problem behaviors of children.

7185 Behavior Therapy (3) Prereq.: graduate standing in clinical or school psychology or consent of instructor. Modern treatment and assessment procedures based on learning theories; behavioral analysis and theoretical orientations as applied to a wide variety of clinical disorders.

7640, 7641 Practicum in Social-Industrial Psychology (1-6,1-6) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. Supervised experience in social-industrial psychology.

7660 School Psychological Consultation (3) Prereq.: graduate standing in psychology or consent of instructor. Practice and research that provide psychological consultation on short-term behavior and academic problems for teachers and other school personnel.

7686, 7689 Practicum in School Psychology (1-6,1-6) Prereq.: admission to doctoral program in school psychology. Each course may be taken for a max. of 6 sem. hrs. of credit.Fail-grading. Supervised experience in schools in which students perform psychoeducational assessments, consult with teachers, and function as members of multidisciplinary teams; cases include children with specific learning disabilities, behavior disorders, and mental retardation.

7700, 7710 Practicum in Experimental Psychology (1-6 each) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. Supervised experience in research in developmental psychology.

7888, 7889 Practicum in Clinical Psychology (1-3,1-3) Prereq.: consent of instructor and enrollment in clinical psychology training program. 12 sem. hrs. are required. Supervised experience in the application of clinical psychological assessment and intervention techniques with behaviorally disordered populations (adult, child, medical).

7900 Teaching of Psychology Practicum (3) Prereq.: PSYC 4111 or equivalent. May be taken for a max. of 6 sem. hrs. of credit. Closely supervised experience in teaching in which students will function as the instructor of record for an undergraduate course in the Psychology Department; objectives in teaching of classroom conduct, including the development and implementation of projects, the establishment and maintenance of classroom discipline, and the development of a philosophy of teaching.

7947 Advanced Seminar in Behavioral Neurology (3) Prereq.: PSYC 7125, 7171, and 7925; graduate standing in clinical psychology or consent of instructor. Common assessment methods and empirically supported treatment procedures for the major adult behavior disorders.

7949 Advanced Seminar in Behavioral Psychopharmacology (3) Prereq.: PSYC 7125, 7171, and 7925; graduate standing in clinical psychology or consent of instructor. Theories and empirical considerations relevant to psychoanalytic, humanistic, behavioral, and cognitive-behavioral approaches for treating disordered behavior.

7960 Cultural Diversity Issues in Counseling and Therapy (3) Prereq.: graduate standing in clinical psychology or consent of instructor. Issues of individual and cultural diversity training, including definitions of multicultural counseling, historical perspectives, various theories and ethical/cultural issues regarding counseling of diverse populations; practical strategies of service delivery and current research will be reviewed.

7981 Advanced Seminar in Experimental Psychology (3.3) Each course may be taken for a max. of 12 hrs. of credit when topics vary.

7984 Advanced Seminar in Behavior Analysis (3) Prereq.: graduate standing in school psychology or consent of instructor. May be taken for a max. of 12 hrs. of credit when topics vary. Theories, concepts, and research methods in behavior analysis; issues in the application of behavior analysis, including assessment and treatment behavior disorders.

7989 Industrial/Organizational Psychology Internship (1-6) Prereq.: completion of general examination. May be taken for a max. of 12 sem. hrs. of credit. Open only to graduate students nominated by the Department of Psychology and accepted by an approved internship organization. Pass-fail grading. Supervised experience in an organization in the application of personnel and organizational psychology principles.

7985, 7989 Current Problems in Industrial Psychology (3,3) Prereq.: consent of instructor. Each course may be taken for a max. of 12 hrs. of credit when topics vary.

7986 Current Problems in School Psychology (3) Prereq.: graduate standing in school psychology program or consent of instructor. Research, theoretical, and methodological issues in school psychology; topics vary.

7989 Internship in School Psychology (1-6) Prereq.: satisfactory completion of the general and language examinations and faculty approval. May be taken for a max. of 12 sem. hrs. of credit. One full academic year of supervised internship that is not less than 1,200 hours, half of which must be in a school setting; internship requirement may be fulfilled by completing one full academic year or two years of one-half time internship experience; at least one hour of direct supervision of each intern. Pass-fail grading.

7971 Advanced Techniques in Clinical Child Psychology (3) Prereq.: PSYC 7125, 7171, and 7925; graduate standing in clinical psychology or consent of instructor. Theory and principles of assessment and intervention in childhood psychopathology.
5010 Statistical Methods for Public Administration (3) Prereq.: college algebra, 2 hrs. lecture; 2 hrs. lab. Open only to students in the MPA program. Also offered as HEBR 5010. Descriptive measures for populations and samples; basic probability theory; distributions of discrete and continuous random variables; hypothesis testing and estimation; multiple regression, correlation, and analysis of association; regression analysis; index numbers; applications in public administration.

5600 Microeconomic Theory for Policy Analysis (3) Open only to students in the MPA program or by consent of instructor. Also offered as ECON 5600. Concepts and analytical tools of microeconomics; their relevance for decision and policy making in public and nonprofit sectors; theories of demand, production, cost, market structures, and market behavior; income distribution; and analysis of economic problems and policies, efficiency criteria, social impacts, and limitations of the market system.

7010 Decision Models for Public Administration (3) Open only to students in the MPA program. Also offered as I S D S 7610. Models for decision making under conditions of certainty, risk, and uncertainty; statistical decision making and their use in developing information; linear programming using graphical and simplex methods; transportation and assignment problems; project management usingPERT andCPM models; cost-benefit analysis; current topics in public administration.

7610 Healthcare Organization and Finance (3) Overview of effective management of healthcare organizations, including understanding of their historical development and future opportunities; current issues relating to financing, regulation, reimbursement, managed care systems, and trends in healthcare delivery; current trends in health management; patient-provider relationships, advancing technology and medical alternatives, working with limited resources, and organizational efforts to deal with ethical issues.

7710 Public Financial Management (3) Cross-listed as FIN 7710. Financial management of public agencies, including sources of revenue, budgetary planning, and financial control. Special emphasis on state and local government agencies; issues of debt management, financial planning, and public sector budgeting.

7850 Public Administration Internship (3) Prereq.: at least 15 hrs. graduate credit; prior written approval of faculty supervising work. May be taken for a max. of 6 hrs. credit. Independent study by MPA student.

7902 Seminar in Public Policy (3) Also offered as POLI 7902. Selected topics in public policy. May be repeated for credit; a max. of 15 hrs. in this series is allowed toward doctoral requirements. Pass/fail grading. Depending on the topic, independent research, student registers for research in:

8599 Experimental Psychology
8959 Social Psychology
8979 Developmental Psychology
8985 Clinical Psychology
8999 Personality Psychology
9000 Dissertation Research (1-12 per sem.) “S”/”U” grading.

PUBLIC ADMINISTRATION • PADM

5010 Statistical Methods for Public Administration (3) Prereq.: college algebra, 2 hrs. lecture; 2 hrs. lab. Open only to students in the MPA program. Also offered as HEBR 5010. Descriptive measures for populations and samples; basic probability theory; distributions of discrete and continuous random variables; hypothesis testing and estimation; multiple regression, correlation, and analysis of association; regression analysis; index numbers; applications in public administration.

5600 Microeconomic Theory for Policy Analysis (3) Open only to students in the MPA program or by consent of instructor. Also offered as ECON 5600. Concepts and analytical tools of microeconomics; their relevance for decision and policy making in public and nonprofit sectors; theories of demand, production, cost, market structures, and market behavior; income distribution; and analysis of economic problems and policies, efficiency criteria, social impacts, and limitations of the market system.

7010 Decision Models for Public Administration (3) Open only to students in the MPA program. Also offered as I S D S 7610. Models for decision making under conditions of certainty, risk, and uncertainty; statistical decision making and their use in developing information; linear programming using graphical and simplex methods; transportation and assignment problems; project management usingPERT andCPM models; cost-benefit analysis; current topics in public administration.

7610 Healthcare Organization and Finance (3) Overview of effective management of healthcare organizations, including understanding of their historical development and future opportunities; current issues relating to financing, regulation, reimbursement, managed care systems, and trends in healthcare delivery; current trends in health management; patient-provider relationships, advancing technology and medical alternatives, working with limited resources, and organizational efforts to deal with ethical issues.

7710 Public Financial Management (3) Cross-listed as FIN 7710. Financial management of public agencies, including sources of revenue, budgetary planning, and financial control. Special emphasis on state and local government agencies; issues of debt management, financial planning, and public sector budgeting.

7850 Public Administration Internship (3) Prereq.: at least 15 hrs. graduate credit; prior written approval of faculty supervising work. May be taken for a max. of 6 hrs. credit. Independent study by MPA student.

7902 Seminar in Public Policy (3) Also offered as POLI 7902. Selected topics in public policy. May be repeated for credit; a max. of 15 hrs. in this series is allowed toward doctoral requirements. Pass/fail grading. Depending on the topic, independent research, student registers for research in:

8599 Experimental Psychology
8959 Social Psychology
8979 Developmental Psychology
8985 Clinical Psychology
8999 Personality Psychology
9000 Dissertation Research (1-12 per sem.) “S”/”U” grading.

RELIGIOUS STUDIES • REL

General education courses are marked with stars ().

*1000 Religions of the World (3) Primarily for non-majors. Survey of the religions of the world such as Hinduism, Buddhism, Judaism, Christianity, Islam, and indigenous religious traditions.

1001 Beginning Hebrew (4) See HEBR 1001.

1002 Beginning Hebrew (4) See HEBR 1002.


1004 Old Testament (3) Scholarly study of the Hebrew Bible (Old Testament) against the background of the history and religious life of ancient Israel.

1005 New Testament (3) Introduction to the history, reception, and literature of the New Testament, from about 30 to 150 CE; emphasis on the writings of the New Testament and the methods by which scholars study them.

1006 HONORS: New Testament (3) Same as REL 1005, with special honors emphasis for qualified students.

1007 HONORS: Old Testament (3) Same as REL 1004, with special honors emphasis for qualified students.

1015 HONORS: Introduction to Religion (3) Same as REL 1090, with special honors emphasis for qualified students.

2000 Introduction to the Study of Religion (3) Thematic introduction to the academic study of religion, ways of being religious, forms of religious literature, beliefs and rituals; the place of religion in human life.

2001 Faith and Doubt (3) Intellectual sources of religious doubt; responses to traditional religious judgment, and the role of individual religious experience, existentialism, Freudianism, and philosophical theism.


2006 HONORS: Jesus in History and Tradition (3) Primarily for honors students and students concentrating in religious studies. Ideas about Jesus from antiquity to the present, including the modern quest for the historical Jesus.

2027 Asian Religions (3) Survey of the history, beliefs, and practices of the major religions of Southern and Eastern Asia, focusing on Hinduism, Buddhism, and the religions of China and Japan.

2028 Philosophy of Religion (3) Same as PHIL 2028. Meaning of religion as a pervasive phenomenon in human societies; faith and reason, nature of divinity, arguments for and against God's existence, religious knowledge and experience, morality and evil, the problem of evil.

2030 Rites of the People (2) Social and cultural aspects of religious ritual and practice, the role of ritual in religious and social life.

2031 Hinduism (3) Historical development of Hinduism, current diversity within Hinduism, and some contemporary issues.

2033 Buddhism (3) Historical development of Buddhism and its forms around the world, and some contemporary issues.

2050 The Christian Tradition (3) Historical development of Christianity, current diversity within Christianity, and some contemporary issues.

2051 Judaism (3) Historical development of Judaism, current diversity within Judaism, and some contemporary issues.

2070 Aids to Study (1) Reserved for religious studies majors.

2090 Introduction to the Study of Religion (3) Thematic introduction to the academic study of religion, ways of being religious, forms of religious literature, beliefs and rituals; the place of religion in human life.

2100 Introduction to the Study of Religion (3) Thematic introduction to the academic study of religion, ways of being religious, forms of religious literature, beliefs and rituals; the place of religion in human life.

2101 Faith and Doubt (3) Intellectual sources of religious doubt; responses to traditional religious judgment, and the role of individual religious experience, existentialism, Freudianism, and philosophical theism.


2106 HONORS: Jesus in History and Tradition (3) Primarily for honors students and students concentrating in religious studies. Ideas about Jesus from antiquity to the present, including the modern quest for the historical Jesus.

2127 Asian Religions (3) Survey of the history, beliefs, and practices of the major religions of Southern and Eastern Asia, focusing on Hinduism, Buddhism, and the religions of China and Japan.

2128 Philosophy of Religion (3) Same as PHIL 2028. Meaning of religion as a pervasive phenomenon in human societies; faith and reason, nature of divinity, arguments for and against God's existence, religious knowledge and experience, morality and evil, the problem of evil.
Religious Studies

- 2029 Judaism, Christianity, and Islam (3) Survey of the history, beliefs, and practices of these three related religions.
- 3000 Women and Religion (3) An emphasis on shared literary grounds. Readings, conferences, and reports under faculty direction.
- 3002 Modern Catholicism (3) The religious and institutional development of Catholicism and the Roman Catholic Church from about the year 1500 to the present, including issues of church and state, the question of the “other” in missions and ecumenism, devotionalism and popular piety, and the challenges of an responses to modernity.
- 3004 Archaeology and the Bible (3) Also offered as ANTH 3004. Major figures and discoveries influencing the historical and literary basis on results of excavations and discovery of written documents and inscriptions.
- 3005 Paul and Early Christianity (3) Paul’s writings in historical context; assessment of his place in the development of the church; significant themes in his theology.
- 3100 Special Topics in Religious Studies (3) May be taken for a max. of 12 hrs. of credit when topics vary.
- 3105 Christian Philosophy (3) Also offered as PHIL 3015.
- 3000 Topics in Mysticism (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary. Studies of the literature and practices of particular mystical traditions, such as Christian, Kabbalistic, Sufi, Hindu, Buddhist, Taoist, Afro-Caribbean, or the shamanistic traditions of the Americas, or of Asia.
- 3103 Native American Religious Traditions (3) Survey of native North American religious traditions from prehistory to the present; including issues of conversion and Christianization, freedom of religion, and gender.
- 3051 Apocalypse: Then and Now (3) Ideas about the end of the world from antiquity to the present; emphasis on the book of Revelation and its continuing influence.
- 3090 Comparative Mythology (3) Also offered as CLST 3090.
- 3092 Fundamentalisms and Religious Nationalism (3) Also offered as INTL 3092. Investigates how the phenomenon of fundamentalism manifests itself in combinations of religion and politics in various countries around the world as a response to “modernity.”
- 3100 Judaism (3) Religious texts, faith, and practice in Judaism, from antiquity to the present.
- 3101 American Judaism (3) American Jewish history; Judaism as a cultural entity and religious faith.
- 3102 American Catholic History (3) Roman Catholicism in its North American context: the European heritage; immigration; political, intellectual, and devotional life.
- 3104 Ancient Hebrew Prophets (3) Prophetic movement in ancient Israel; different modern interpretations of prophecy.
- 3124 The Language of the English Bible (3) Also offered as ENGL 3124.
- 3201 Psychological Theories of Religion (3) Also offered as PSYC 3201. Use of various psychological theories to explain religious belief and practice, conversion experiences, ritual acts, and altered states of mind.
- 3203 Religion and Parapsychology (3) Extraordinary human experiences: death, healing and dying, exorcism, apparitions, and witchcraft. Examined from the perspective of religious phenomenology, philosophy, and psychology.
- 3236 Literature and Religion: An Overview (3) Also offered as ENGL 3236.
- 3238 Religion and Film (3) Interaction between religion and film; approaches to the analysis of religion in film; emphasis on shared literary grounds.
- 3200 Women and Religion (3) Role of women in the religions of the world.
- 3786 The Religion of Islam (3) Also offered as INTL 3786. Introduction to the major religious and cultural dimensions of the Islamic world, both those that express its diversity and those that express its continuity; emphasis on the development of classical Islamic institutions and ideas, the diverse forms of Islamic religious and cultural life over the past fourteen centuries as the Islamicate tradition has spread around the world.
- 4001 South Asian Society, Polity, and Culture (3) Also offered as INTL 4002.
- 4005 History of the Christian Church: 50-450 (3) Also offered as HIST 4005. Christianity's rise to prominence; its struggle against paganism; emphasis on institutional history of the church.
- 4006 History of the Christian Church: 450-1550 (3) Also offered as HIST 4006. Medieval Latin Christianity; emphasis on central role of the church in culture, politics, and social organization.
- 4010 Selected Topics in Religious Studies (3) May be taken for a max. of 12 hrs. of credit when topics vary.
- 4011 The Age of Reformation (3) See HIST 4011.
- 4012 History of Modern Christian Thought (3) Prereq.: one religious studies course. Also offered as HIST 4012. Major figures in the history of Christian thought from the Reformation through the 19th century.
- 4031 Comparative Religions (3) Also offered as ANTH 4031.
- 4032 Religion, Gender, and Society (3) Also offered as ANTH 4032. Examination of the link between religious ideas and gender formulations within simple and complex societies and religious communities.
- 4041 Women and Witchcraft (3) A cross-cultural examination of “witchcraft” and issues of gender in North America, Europe, and Africa.
- 4050 A History of God (3) Traces the development of the concept of God from antiquity to the present.
- 4060 Ideas of the Afterlife (3) Traces the development of ideas concerning life after death in various traditions from antiquity to the present.
- 4079 Geography of Religion (3) See GEOG 4079.
- 4095 The Middle East to 1000 (3) See HIST 4095.
- 4096 The Modern Middle East (3) See HIST 4096.
- 4097 Political Theology (3) See POLI 4097.
- 4098 Muslims of South Asia (3) See HIST 4098.
- 4124 Studies in African Diaspora Religions (3) Also offered as AAS 4124. May be taken for a max. of 6 hrs. of credit when topics vary. Analysis of religious beliefs, rituals, and practices and their roles in the lives of African Diaspora peoples.
- 4125 History of Ancient Israel (3) Also offered as HIST 4125. Israelite history from its beginnings to the Christian era; readings from biblical and other ancient Near Eastern texts.
- 4161 History of Religion in the United States (3) See HIST 4161.
- 4171 Religion in Southern Culture (3) Religion as a component of Southern history and culture; emphasis on the religious culture of Louisiana.
- 4191 Religions of China and Japan (3) See HIST 4191.
- 4227 Contemporary Christian Thought (3) Major theologies and theological movements of the 20th century.
- 4228 Major Religious Thinkers (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary. Concentrated study of the work of a religious thinker.
- 4236 Studies in Literature and Religion (3) Also offered as ENGL 4236.
- 4301 Theories of Religion (3) Theories about the origin, nature, and function of religion from the social sciences and other disciplines.
- 4350 Religious Ethics (3) Ethical issues derived from religious traditions.
- 4500 Seminar in Biblical Studies (3) Prereq.: one course in Biblical studies. May be taken for a max. of 6 hrs. of credit when topics vary.
- 4600 Hinduism (3) Prereq.: REL 2027 or consent of instructor. A survey of Hinduism from its origins to the present.
- 4800 Buddhism (3) Prereq.: REL 2027 or consent of the instructor. A survey of Buddhism from its origins to the present.
- 4850 Buddhist Psychology (3) Buddhist conceptions of mind, self, psyche, and personhood in comparison to Western views of the mind.
- 4928 Medieval Philosophy (3) Also offered as PHIL 4928.
- 4939 Kierkegaard (3) Also offered as PHIL 4939.
- 4944 Philosophical Theology (3) Also offered as PHIL 4944.

4990 Independent Reading and Research (1-3) Open to advanced students with prior approval of faculty member who will direct the course. Student is responsible for selecting area of reading and research and gaining agreement of faculty member to direct the course. May be taken for a max. of 6 hrs. of credit when topics vary.
- 7250 Seminar: Theoretical Study of Religion (3) Methodology, theory, and approaches in the study of religion; emphasis on classical and recent works in theoretical study of religion; relationship between religion and Western culture.
- 7800 Seminar: Western Religions (3) May be taken for a max. of 6 hrs. of credit when topics vary. Modern critical study of Western religious traditions; relationship between religion and Western culture.
- 7900 Seminar: Asian Religions (3) May be taken for a max. of 6 hrs. of credit when topics vary. Texts, ideas, and practices of modern Asian religions; sociological, anthropological, historical, and psychological issues.
- 7990 Independent Study (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary.

RENEWABLE NATURAL RESOURCES • RNR

General education courses are marked with stars (★).
2102 Natural Resource Measurements and GIS (3) F, S, V Prereq.: RNR 3002, 3003. Course will explore the methods of measuring, mapping, and visualizing forest attributes using GIS technology. Focus will be on applications related to forest management and natural resources.

2044 Renewable Natural Resources Field Studies I (1) Prereq.: RNR 3002, 3103. One-week field trip. Students are responsible for paying for travel expenses associated with this course. Insight into management objectives and issues in forested ecosystems not found in the West Gulf Coastal Plain. Experience gained through on-site visits and discussions with various natural resource professionals.

3103 Forest Biometrics (2) S Prereq.: RNR 2102, 2210, and 3101. Prerequisites: basic forestry, soil science, stands, stands, wood products, and other forest resources; sampling and inventory techniques; statistical inference. 8 hrs. lecture; 1 hr. lab. 8 weeks.

3105 Forest Management (3) F Prereq.: RNR 2101. This is an 8-week course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Methods include watershed management, silviculture practices, and sustainable management of forests.

3106 Timber Harvesting (2) S 3 hrs. lecture; 1 hr. lab. Students are responsible for paying for travel expenses associated with this course. This is an 8-week course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Methods of harvesting timber crops; logging equipment, planning, road layout, legal and social issues, environmental concerns, financial analysis of logging operations, and contracts; field trips and practical exercises included.

3107 Wood Procurement (2) S Prereq.: RNR 3102. 1 hr. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. This is an 8-week course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Principles related to the context, planning, design, and implementation of habitat restoration and mitigation; evaluation of habitat restoration efforts using the case study method.

4002 Fisheries Literature and Communication (3) F 2 hrs. lecture; 3 hrs. lab. Organization and communication of technical fisheries literature.

4111 Wildlife Management Techniques (4) F Prereq.: RNR 2101 and 2210. 3 hrs. lecture; 1 hr. lab. Weekend field trips. Students are responsible for paying for travel expenses associated with this course. Wildlife science and the scientific method, generating and testing hypotheses and predictions, statistical analysis of class generated data and scientific writing. Population inventories are conducted; entomological methods; methods to capture animals and determine age and sex. Immobilization methods, marking methods, radio telemetry, and assessment of habitat condition. Use of GIS and GPS in wildlife ecology.

4113 Ecology and Management of Wetland Wildlife (2) F Prereq.: RNR 2101 and 2210. 3 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Principles underlying aquaculture of fish, crustaceans, and mollusks.

4222 Principles of Aquaculture (4) S Prereq.: 8 sem. hrs. of biology, forestry, and fisheries. 3 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Principles underlying aquaculture of fish, crustaceans, and mollusks.

4223 Marine Fisheries Resources (3) S Survey of the biology, harvest, and management of one of the most important marine organisms throughout the world; emphasis on stock trends and the effects of biological and socioeconomic factors on the commercial and recreational harvest of the species.

4255 Limnology (3) Prereq.: BIOL 1201, 1208 and CHEM 1201, 1202, 1212 or equivalent. Geomorphology, physical and chemical properties of freshwater environments.

4308 Tropical Forestry (1) V Distribution and characteristics of tropical forests; conservation and sustainable management; and managing the tropical forest resources of the world.

4302 Forest Fire Protection and Use (2) S 1 hr. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Principles of fire protection and use; management of fire in forest ecosystems.

4314 Silviculture and Natural Resources Field Studies (4) S Prereq.: RNR 3002 or consent of instructor. 3 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Principles of headwater forest management; improvement, conversion, and management of forest products, wildlife habitats, and other amenities.

4305 Ecology and Management of Upland Wildlife (3) F 2 hrs. lecture; 3 hrs. lab. Extended field trips. Students are responsible for paying for travel expenses associated with this course. Ecology and management of wildlife in upland ecosystems; forest habitat; current issues related to upland wildlife.

4306 Forest Management (4) Prereq.: ECON 2010 or equivalent. 3 hrs. lecture; 3 hrs. lab. 8 weeks. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Management of a single stand, even-aged and uneven-aged management, decision criteria, and decision variables, multiple use, and tradeoff analyses; management of multiple stands; harvesting scheduling.

4317 Biology of Fishes (3) S Prereq.: RNR 2143 or consent of instructor. 3 hrs. lecture; 3 hrs. lab. Introduction to life cycles, structure, and functional anatomy of fishes; relationships between fish biology and fisheries management.

4308 Forest Resource Economics (3) S Prereq.: ECON 2930 or AECE 2933 or equivalent. Economic theory applied to forest resource management; structure of the forest products market, demand of forest products, timber supply and stumpage price; resource conservation and endangered species protection; taxation and government programs; international trade of forest products; demand for non-timber resources.

4309 Renewable Natural Resources Policy (3) S History of forestry and forest legislation; development and evaluation of policies in forestry, wildlife, and fisheries; current issues.

4310 Firefighter Management (3) F Characteristics of fire officers; dynamics of stock options; socioeconomic aspects of fishery; fisheries management and research techniques; managing wild fisheries stocks.

4302 Forest Fire Protection and Use (2) S 1 hr. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Principles of fire protection and use; management of fire in forest ecosystems.

4314 Silviculture and Natural Resources Field Studies (4) S Prereq.: RNR 3002 or consent of instructor. 3 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Principles of headwater forest management; improvement, conversion, and management of forest products, wildlife habitats, and other amenities.

4305 Ecology and Management of Upland Wildlife (3) F 2 hrs. lecture; 3 hrs. lab. Extended field trips. Students are responsible for paying for travel expenses associated with this course. Ecology and management of wildlife in upland ecosystems; forest habitat; current issues related to upland wildlife.

4306 Forest Management (4) Prereq.: ECON 2010 or equivalent. 3 hrs. lecture; 3 hrs. lab. 8 weeks. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Management of a single stand, even-aged and uneven-aged management, decision criteria, and decision variables, multiple use, and tradeoff analyses; management of multiple stands; harvesting scheduling.

4317 Biology of Fishes (3) S Prereq.: RNR 2143 or consent of instructor. 3 hrs. lecture; 3 hrs. lab. Introduction to life cycles, structure, and functional anatomy of fishes; relationships between fish biology and fisheries management.

4308 Forest Resource Economics (3) S Prereq.: ECON 2930 or AECE 2933 or equivalent. Economic theory applied to forest resource management; structure of the forest products market, demand of forest products, timber supply and stumpage price; resource conservation and endangered species protection; taxation and government programs; international trade of forest products; demand for non-timber resources.

4309 Renewable Natural Resources Policy (3) S History of forestry and forest legislation; development and evaluation of policies in forestry, wildlife, and fisheries; current issues.

4310 Firefighter Management (3) F Characteristics of fire officers; dynamics of stock options; socioeconomic aspects of fishery; fisheries management and research techniques; managing wild fisheries stocks.

4302 Forest Fire Protection and Use (2) S 1 hr. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Principles of fire protection and use; management of fire in forest ecosystems.
4101 Integrated Natural Resources Management and Policy (4) Prereq.: RNR 2051, 3040 and senior status in School of Renewable Natural Resources. 2 hrs. lecture; 4 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Development of problem solving skills for the management of renewable natural resources; integration of renewable natural resource management theory, policy and practices; analysis of management and policy decisions.


4103 Coasts and Marine Environments (3) Prereq.: Biol 1201 and 1202. Application of genetic theory to the management of renewable natural resources; emphasis on fragmented populations, endangered species, maintenance of genetic variation.

4104 Forest Products Manufacturing (4) Prereq.: RNR 2041. 3 hrs. lecture; 3 hrs. lab. Principles and techniques in the manufacture of forest products including lumber, treated materials, furniture, adhesive, and composite materials such as plywood, particleboard, medium density fiberboard, oriented strandboard, and engineered lumber.

4105 Aquaculture Production Systems (3) S Prereq.: Biol 1201, 1208 or equivalent. General biology and culture techniques of the major global finfish, crustacean, mollusk, and shellfish species. Research in whole-plant physiological ecology; presentation and use of selected field methods and instrumentation for eco-physiology and physiological plant ecology; presentation and use of selected field methods.

4106 Techniques in Limnology and Fisheries (2) Prereq.: junior, senior, or graduate standing and permission of instructor; only: 1 hr. lecture; 1 hr. lab. Students are responsible for paying for travel expenses associated with this course. Quantitative techniques of field and laboratory investigations of aquatic plant and fish population assessment in freshwater ecosystems.

4107 Human Dimensions in Natural Resources (3) F Prereq.: RNR 2043 or equivalent. Human behavior as related to management and use of natural resources.

4108 Ichthyology (4) Prereq.: RNR 2001 or equivalent. Marine and freshwater fishes of the world; behavior of fishes and their environment; behavioral adaptations of fishes.

4109 Advanced Aquaculture (3) Su Prereq.: RNR 4022 or equivalent. 4 hrs. lecture; 6 hrs. lab. Occasional extended field trips. Students are responsible for paying for travel expenses associated with this course. Systems and practices for maximizing production and profit of cultured aquatic species; emphasis on international aquaculture systems, exotic species, and preparation of management plan for commercial aquaculture.

4110 Methods of Population Modeling (4) F Prereq.: RNR 4022 or equivalent. 3 hrs. lecture; 3 hrs. lab. Principles and practices of breeding for genetic improvement of commercially important finfish.

4111 Advanced Topics in Renewable Natural Resources (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4112 Advanced Topics in Forest Biometrics and Forest Management (3) V Prereq.: EXST 7041 and RNR 4036, or equivalent. Theory and practices involved in predicting growth and yield of forest stands; applications of linear and goal programming, biometrics, and capital budgeting to timber and multiple-use management.

4113 Forestry and Land Use (3) F Prereq.: RNR 2043. 3 hrs. lecture; 3 hrs. lab. Topics in wood science, including review of selected literature; anatomical, physical, and chemical properties of wood, emphasis on wood products.

4116 Water Quality Management and Policy (3) See ENV 7501.

4170 Graduate Seminar in Fisheries (1) F,S,Su Prereq.: consent of instructor. 2 hrs. lab. Graduate seminar course taken for credit in Spring semester.

4171 Advanced Topics in Aquatic Ecosystems (1-4) F,S,Su Prereq.: consent of instructor. 3 hrs. lab. Graduate seminar course taken for credit in Spring semester.

4175 Advanced Topics in Natural Resource Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4181 Advanced Topics in Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4182 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4183 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4184 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4185 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4186 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4187 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4188 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4189 Advanced Topics in Fish and Wildlife Management (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4190 Graduate Seminar in Aquatic Sciences (1) F,S,Su Prereq.: consent of instructor. 2 hrs. lab. Graduate seminar course taken for credit in Spring semester.

4191 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4192 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4193 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4194 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4195 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4196 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4197 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4198 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4199 Advanced Topics in Aquatic Sciences (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4200 Thesis Research (1-12 per sem.) *S"/"U" grading.

4201 Research Problems in Natural Resources (1-3) F,S,Su May be taken for a max. of 6 sem. hrs. of credit.

4202 Dissertation Research (1-12 per sem.) *S"/"U" grading.

RUSSIAN • RUSS

Native speakers of Russian will not receive credit for courses marked with an asterisk (*).

**1001 Elementary Russian I (5) Hearing, speaking, reading, and writing Russian; elementary grammar, translation.

**1002 Elementary Russian II (5) Prereq.: RUS 1001 or equivalent. Hearing, speaking, reading, and writing Russian; completion of elementary grammar; translation.

1020 Russian for Reading Knowledge (5) Specialized course intended to satisfy departmental foreign language requirement for graduate students, but carrying no graduate credit. Undergraduates may enroll on pass-fail basis only. Does not count toward satisfying foreign language requirement for undergraduate degrees. Total of 12 credit hours may count toward baccalaureate. Credit will not be given for both this course and introductory Russian courses.

**2001 Intermediate Russian I (3) Prereq.: RUS 1002 or equivalent. Hearing, speaking, reading, and writing Russian; development of practical command of Russian grammatical categories unfamiliar to English speakers; translation.

**2002 Intermediate Russian II (3) Prereq.: RUS 2001 or equivalent. Hearing, speaking, reading, and writing Russian; development of practical command of Russian grammatical categories unfamiliar to English speakers; translation.

2075 Introduction to Russian Culture and Civilization (3) Taught in English; knowledge of Russian not required. Also offered as HIST 2155. Geography, history, religion, literature, music, art, architecture, and scientific and technological achievements of Russia.

3001 Advanced Russian Discourse I (3) Prereq.: RUS 2002 or equivalent. Vocabulary building and readings in modern Russian; drill in oral and written original composition; attention to style, syntax, idioms, and inflections.

3062 Advanced Russian Discourse II (3) Prereq.: RUS 3001 or equivalent. Vocabulary building and readings in modern Russian; drill in oral and written original composition; attention to style, syntax, idioms, and inflections.

3075 19th Century Russian Literature I (3) Prereq.: RUS 2002 or equivalent. Russian literature from the beginning to the 19th century.

3076 19th Century Russian Literature II (3) Prereq.: RUS 2002 or equivalent. Russian literature of the 19th century; study of literary texts; grammatical and cultural analysis; practice in listening and writing.

3081 The Fairy Tale (3) Taught in English; knowledge of Russian not required. Structure and substance of the traditional fairy tale; examples from German and Russian sources.

3501 Russian Film (3) Knowledge of Russian not required. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Selected topics in Russian film.

3502 Russian Literature: Novel (3) The Russian novel from its beginning to the end of the 19th century.

3503 Russian Literature: Novel (3) Special works of Turgenev, Dostoevsky, Tolstoy.

4061 Soviet Literature (3) Russian literature from 1917 to the present.

**4081 Russian Literature in Translation: 19th Century (3) Knowledge of Russian not required. Masterpieces of 19th century Russian literature; reading the works of Turgenev, Dostoevsky, and Chekhov.
SOCIOLGY • SOCL

In this department, the second digit of the course number denotes the subject area of the course, as follows:
0—general courses; 1—theory; 2—methods and statistics; 3—sociological organization; 4—social institutions; 5—social issues; 6—social interaction; 7—population and ecology; 8—not used; and 9—reading and research (except for thesis research and dissertation research that are numbered 8800 and 9800, respectively).

General education courses are marked with stars (*)..

1001 Human Societies (3) Comparative and historical analysis of human societies; major patterns of social change.

1005 Social Life in the United States (3) Open only to international students. An orientation course on people, culture, social institutions, and processes.

1411 Introduction to Science, Technology, and Society (3) Sociological analysis of knowledge generation, institutions of science and technology, and public understanding of science.

1701 Population Issues (3) Social demography; interrelationships between population and society.

2001 Introductory Sociology (3) Major subject areas and principles of sociology.

2002 HONORS: Introductory Sociology (3) Same as SOCL 1001 with a special honors emphasis qualified for students.

2901 Selected Topics in Sociology (3) May be taken for a max. of 6 hrs. of credit when topics vary.

2211 Methods of Sociological Research (3) Prereq.: majors only and credit for or concurrent registration in SW 7501, 7502, 7503, 7504, and 7506. Advanced methods of effective individual, family, and group treatment of systemic issues in a holistic perspective.

7506 Community and Agency Contexts for Direct Practice (3) Prereq.: majors only and credit for or concurrent registration in SW 7501, 7502, 7503, 7504, and 7506. Community, organizational, and social aspects of social work practice; indirect practice skills associated with effective social work practice in multiple service environments.

7710 Task-Oriented Group Interaction in Social Work (3) Interaction of small groups in social work practice; emphasis on understanding barriers to goal-directed interaction and on helping groups accomplish tasks.

7801 Family Violence (3) Topics in family violence; their relevance to social work practice; program development and interventional and approves issues.

7803 Grant and Proposal Writing for Human Service Organizations (3) Prereq.: completion of all foundation courses; majors only and credit for or concurrent registration in SW 7501, 7502, 7503, 7504, and 7505. Community, organizational, and social aspects of social work practice; indirect practice skills associated with effective social work practice in multiple service environments.

7807 Special Topics in Social Work (3) Prereq.: consent of instructor. May be taken for a max. of 12 sem. hrs. of credit when topics vary. Selected topics on social work and social welfare theory, practice, and policy.

7905 Independent Reading and Research in Social Work Practice (3) Prereq.: consent of instructor. May be repeated up to 30 hrs. for PhD students if topics vary.

7906 Independent Reading and Research in Social Welfare Policy (3) Prereq.: consent of instructor. May be repeated once by PhD students if topics vary.

7907 Public Policies and the Aging (3) Public policies that affect quality of life for the elderly; Older American's Act, Social Security Act, Medicare and Medicaid policies.

7908 Social Development: International Perspectives (3) Concepts of social development; extent of social under-development in the modern world; theories and normative perspectives; social and national planning.

7999 Research in Sociology (1-12 per sem.) Prereq.: completion of foundation courses and consent of instructor. Pass-fail grading. Research project, state of knowledge paper, or position paper.

8000 Thesis Research (1-12 per sem.) Prereq.: completion of all foundation courses and consent of instructor. "S" or "U" grading.

9000 Dissertation Research (1-12 per sem.) Prereq.: successful completion of the comprehensive examination. "S" or "U" grading.
340 Spanish

4002 Spanish for Reading Knowledge (5) Su Specialized course intended to satisfy departmental foreign language reading requirement for graduate students. This course will not count toward a graduate degree. Undergraduates may enroll on consent of instructor. Does not count toward satisfying foreign language requirements for undergraduates, although hours may count toward baccalaureate degree credits given for this course and introductory Spanish courses.

4003 Instructional Strategies for the Second Language Spanish Classroom (3) Prereq.: EDCT 3002, SPAN 3002, and concurrent enrollment in EDCT 4001. 1 hrs. lab/field experiences in multicultural settings. Teacher candidates will study and participate in activities that incorporate different classroom interactional structures, including teacher-to-whole class, task-based group activities, and student-to-student (pair work); candidates will design and conduct Spanish language lessons using learner-centered activities.

4004 Critical Issues in Teaching Spanish as a Second Language: Capstone Course (3) Prereq.: EDCT 4003, SPAN 4003, and concurrent enrollment in EDCT 4004. Teacher candidates should be in the last two semesters in completion of the requirement for a major in Spanish. Taught in Spanish. Focus on the consolidation of knowledge about the Spanish language, literature, and culture with respect to the teaching of subject content to middle or high school level learners.

4005 Structure of the Spanish Language (3) Prereq.: SPAN 3010 or equivalent. Spanish morphology and syntax; structuralist, sociolinguistic, and generative-transformational analyses and applications.

4007 Spanish Medieval Literature (3) Spanish literature from its beginnings to the end of the 14th century; emphasis on the master’s works by Cervantes, Pérez Galdós, Unamuno, Carpenter, and Borges.

4034 Special Topics in 10th and 11th Century Literature (3) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

4035 Special Topics in Old Spanish Prose (3) V May be taken for a max. of 6 sem. hrs. of credit when topics vary. Spanish Renaissance and Baroque prose.

4054 Special Topics in Golden Age Lyric and Dramatic Poetry (3) V May be taken for a max. of 6 sem. hrs. of credit when topics vary. Spanish drama and lyric poetry of the 16th and 17th centuries.

4063 Spanish Literature from 1900 to 1936 (3) Prereq.: SPAN 3071 or 3072. Literature in all genres from the early Modernists to the Avant Garde.

4064 Spanish Literature Since 1936 (3) Prereq.: SPAN 3071 or 3072. Literature in all genres since the Spanish Civil War.

4081 Modern Spanish Prose Fiction in Translation (3) Taught in English; knowledge of Spanish not required. Selected outstanding novels and short stories of modern Spanish literature from the 16th and 17th century Golden Age to the present; includes The Life of Lazarillo de Tormes and other works by Pérez Galdós, Unamuno, Valero-Valle-Inclán, Pérez de Ayala, Cela, Lafoor, and Gironella.

4082 Modern Spanish-American Prose Fiction in Translation (3) Taught in English; knowledge of Spanish not required. Selected outstanding Spanish-American prose works by García Márquez, Cortázar, Fuentes, Carpenter, and Borges.

4100 Women Writers in the Hispanic World (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary. Examination of selected periods, themes, and genres.

4144 Latin American Literature: 1492-1810 (3) Prereq.: one literature course in Spanish at the 3000 level or consent of instructor. Topics in colonial Latin American literature from 1492-1810.

4145 Latin American Literature: 1810-1915 (3) Prereq.: one literature course in Spanish at the 3000 level or consent of instructor. Topics in Latin American literature from independence through modernismo (1810-1915).

4146 Latin American Literature: 1915-1960 (3) Prereq.: one literature course in Spanish at the 3000 level or consent of instructor. Topics in Latin American literature from the historical avant garde to 1960.

4147 Latin American Literature: 1960-1991 (3) Prereq.: one literature course in Spanish at the 3000 level or consent of instructor. Topics in Latin American literature from 1960 to the present.

4200 Literature and Culture of Hispanics in the United States (3) Texts may be in English or Spanish. Selected periods, themes, and genres; related cultural topics.

4201 Cinema in Spanish (3) F,S Prereq.: one course in film analysis or equivalent. Screening and analysis of representative films from Spain and Latin America and their interrelations with literature.

4202 Students Applied Spanish Linguistics (3) Prereq.: SPAN 3010. Structures and communicative functions of Spanish; classroom applications.

4215 Independent Research in Spanish or Spanish-American Literature (1-3) May be taken for a max. of 3 sem. hrs. credit. Permission of department required. Readings in Spanish or Spanish-American literature directed by a senior faculty member.

4217 Independent Research in Spanish or Spanish-American Linguistics (1-3) May be taken for a max. of 3 sem. hrs. credit. Permission of department required. Readings in Spanish or Spanish-American linguistics.

9730 Articles in Medieval Spanish Literature (3) V With consent of department, may be taken for a max. of 6 hrs. of credit when topics vary.

9741 Articles in Spanish American Literature: Beginnings to 19th Century (3) V With consent of department, may be taken for a max. of 6 hrs. of credit when topics vary.

9742 Articles in Spanish American Literature: 19th Century to the Present (3) V With consent of department, may be taken for a max. of 12 hrs. of credit when topics vary.

9750 Articles in Golden Age Spanish Literature (3) V With consent of department, may be taken for a max. of 6 hrs. of credit when topics vary.

9761 Articles in Modern Spanish Literature (3) V With consent of department, may be taken for a max. of 12 hrs. of credit when topics vary.

9770 Comparative Studies in Hispanic Literature (3) V With consent of department, may be taken for a max. of 6 hrs. of credit when topics vary.

9785 Articles in Hispanic Linguistics (3) When topics vary, may be taken for a max. of 6 hrs. of credit for the master's degree and 9 hrs. of credit for the doctorate. Topics to be announced.

9787 Articles in Spanish Language Variation (3) May be taken for a max. of 6 sem. hrs. with consent of department. Sociolinguistic perspectives and methodology in the analysis of Spanish language variation.

9789 Articles in Spanish Language Acquisition (3) V Theories and discourse perspectives in second language acquisition.

9794 Articles in the United States (3) Spanish in contact with English language use, variation, and change; social and individual bilingualism.

9795 Articles in Hispanic Linguistics (3) May be taken for a max. of 6 sem. hrs. of credit with consent of department. Scholarly investigation guided by departmental graduate faculty.

9799 Articles in Hispanic Critical Studies (3) V With consent of department, may be taken for a max. of 6 hrs. of credit when topics vary.

9801 Literature and Politics in the Modern Hispanic World (3) F,S Study of Spanish and Spanish-American cultural politics through its literary manifestations.

9792 Theatre in the Modern Hispanic World (3) Study of Hispanic dramatic literature, examination of theatrical traditions and dramatic theories from a cultural perspective.

9802 Literature and Religion in the Hispanic World (3) Prereq.: SPAN 3071 and/or 3072. Study of religious and spiritual systems in literature.

8000 Thesis Research (1-12 per sem.) "S/U" grading.

SWAHILI • SWAH

Native speakers of Swahili will not receive credit for courses marked with an asterisk (*).

General education courses are marked with stars (★).

1001 Elementary Swahili Language and Culture I (4) Also offered as AAAS 1001. Introduction to Eastern Africa and its cultures; basic lexicon and structures of Swahili; emphasis on communicative language skills.

1002 Elementary Swahili Language and Culture II (4) Prereq.: SWAH 1001. Also offered as AAAS 1002. Increased emphasis on speaking, reading, writing, and deepening appreciation of Swahili's role in Eastern African socio-cultural development.

2003 Intermediate Swahili Language and Culture III (4) Prereq.: SWAH 1002. Also offered as AAAS 2003. Further mastery of grammar; development of reading skills and analysis of contemporary texts.

2004 Intermediate Swahili Language and Culture IV (4) Prereq.: SWAH 2003. Also offered as AAAS 2004. Further development of skills in reading and analyzing contemporary texts and more difficult forms of expressions, such as Swahili poetry and traditional literary texts.

SYSTEMS SCIENCE • SYSC

7090 Systems Science Design Project (1-9) Prereq.: minimum of 12 sem. hrs. earned toward the systems science degree. Individual design, development, implementation, and documentation of a project applying systems techniques, possibly involving computing, to a problem in the student's specialization.


THEATRE • THTR

General education courses are marked with stars (★).

1000 Theatre Forum (0) May be repeated. Pass-fail grading. Weekly student performance and masterclass forum.

1001 Practical Elements of Stagecraft (3) Introduction to the skills and techniques used by artists and craftsmen in realization of the technological elements of all areas of live production, including training sessions in each of the main areas and departmental productions.

1020 Introduction to Theatre (3) The arts of the theatre and its artists; acting, directing, costume and scenic design, playwriting, architecture.

1021 HONORS: Introduction to Theatre (3) Same as THTR 1020, with special emphasis for qualified student.

1025 Acting: Improvisation (3) Exploration, through theatre games and movement training, of the actor's problems of intention, listening, physical expression of emotion, concentration, and mime.

1029 Stage Movement I (3) 2 hrs. lecture; 2 hrs. lab. Beginning stage movement for the actor, including flexibility, alignment, spatial awareness, gesture and body composition, and physical characterization.

1127 Beginning Modern Dance (3) 3 hrs. lab. May be taken for a max. of 2 hrs. of credit.

1311 Beginning Ballet (1) 3 hrs. lab. May be taken for a max. of 2 hrs. of credit.

1153 Beginning Jazz Dance (1) 3 hrs. lab. May be taken for a max. of 2 hrs. of credit.

1227 Intermediate Modern Dance (1) 3 hrs. lab. May be taken for a max. of 2 hrs. of credit.

1231 Intermediate Ballet (1) 3 hrs. lab. May be taken for a max. of 2 hrs. of credit.

1253 Intermediate Jazz Dance (1) 3 hrs. lab. May be taken for a max. of 2 hrs. of credit.

1800 Introduction to Dance (3) Dance as a performing art.

1804 Dance Theatre (2) 6 hrs. lab. May be taken for a max. of 4 hrs. of credit. Admission by audition. Participation in dance theatre.
3130 Script Analysis (3) Prereq.: THTR 2028. Methods of studying and analyzing plays for their production on stage through an examination of modernist scripts.

3134 Scenery and Properties Construction (3) Prereq.: THTR 2022 and 2024. 2 hrs. lecture; 2 hrs. lab. Examination of scenic and property construction as they apply to theatrical scenery and properties.

3230 Introduction to Nonprofit Arts Management (3) Overview of the organizational structure and operations of arts and cultural institutions, specifically those organized as non-profits.

3400 Marking the Arts (3) Lecture and discussion, case analysis, service learning application of marketing concepts to not-for-profit arts organizations.

3435 Scene Painting I (3) Prereq.: THTR 2022, 2024. 1 hr. lecture; 4 hrs. lab. Contemporary scene painting for the stage; emphasis on tools, materials, basic techniques, and color theory.

3530 Stage Sound Technology (3) Prereq.: THTR 2022, 2024. 2 hrs. lecture; 2 hrs. lab. Introduction to the equipment, techniques, and methods used in stage sound and audio; includes work in the areas of computer control and editing of sound, live sound reinforcement, and recording techniques in both the analog and digital formats.

3531 Stage Lighting Technology (3) Prereq.: THTR 2022, 2024. 2 hrs. lecture; 2 hrs. lab. Introduction to the technical and mechanical elements of stage lighting technology in both analog and digital formats.

3802 Dance Composition (3) Fundamental elements and principles of choreography.

3803 Improvisation (3) Structural problems and exploration in dance improvisation.

3800 Theatre or Film Internship (3) Prereq. consent of instructor. May be repeated for a max. of 6 sem. hrs. of credit. Pass-fail grading. Study with an approved theatre or film director or producer. May be taken in one or all of the following areas: performance, directing, and design, technology, stage management, administration, box office, or casting.

3830 Technical Drafting for the Theatre (3) Prereq.: THTR 2022, 2024. 2 hrs. lab. Drawing conventions and techniques used for depicting common scenic elements.

3900 Selected Topics in Theatre (3) Prereq. consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. Consult Schedule of Classes for current offering.

4000 Writing Drama (3) See ENG 4008.

4000 Women and Theatre (3) Survey of western drama by and about women; female characters and playwrights in past and present drama of Europe and America.

4203 Advanced Costume Construction Techniques for the Stage (3) Prereq.: THTR 2024. 2 hrs. lecture. Specialized working knowledge of costume construction practices and the techniques unique to the construction of costumes for the stage; emphasis on historical construction, cutting, finishing, design analysis, and adaptations for stage performance.

4204 Directing I (3) Prereq.: THTR 2022, 2025, and 2028, or equivalent. Directors' problems of script analysis, characterization, and scene visualization.

4205 Acting: Scene Study (3) Prereq.: THTR 3025. 2 hrs. lecture; 3 hrs. lab. Open only to Theatre performance majors. Technique of developing an actor's score for a role.

4209 Special Topics in Stage Movement (3) Prereq.: THTR 3029 and permission of instructor. Theatre majors in the performance area of concentration only: 2 hrs. lecture; 2 hrs. lab. Specialized working knowledge of costume construction and clothing construction for the consumer market; historical construction, patterning, cutting, fitting, design analysis, and adaptations for stage performance.

4210 Drama from Aeschylus to Ibsen (3) Prereq.: THTR 2028.

4211 Drama from Ibsen to the Present (3) Prereq.: THTR 2028.

4212 Costume Design (3) Prereq.: THTR 2028. Design principles of costume related to stage and cinematic style, costume interpretation, and designing costumes for theatrical styles of production; insp. from the past.

4213 Scene Design (3) Basic principles of scenic design for the theatre; emphasis on color, and lighting; sketches, renderings, and models.

4215 Directing II (3) Prereq.: THTR 4024 or equivalent. Directing the play, in rehearsal, and directing plays and scenes in workshop performance.

4216 Advanced Costume Design (3) Prereq.: THTR 4124 and 4125. Continuation of THTR 4123 concentrating on the development of a body of costume design research, conceptual choices, and advanced costume design techniques.

4227 Styles of Acting (3) Prereq.: THTR 4025 and permission of department. Fundamental techniques of acting; acting styles required by plays of the Greek, neo-classical, Elizabethan, and modern periods.

4228 Mask Making (3) 2 hrs. lecture; 2 hrs. lab. Skills used in basic mask construction for theatre; includes life casting and four common mask-making techniques with their distinct properties.

4311 Seminar: Contemporary Theatre and Drama (3) May be taken for a max. of 6 hrs. of credit when Topics in the Performing Arts are not offered.

4320 Theatrical Hair and Makeup (3) Prereq.: THTR 2023 or equivalent; 6 hrs. lab. Advanced principles of makeup for stage and film, including prosthetic makeup design and execution of period makeup and hairstyles, including basic wig and facial hair construction, and wig styling.

4343 Advanced Scene Scenery Construction (3) Prereq.: THTR 3134 or equivalent. 2 hrs. lecture; 2 hrs. lab. Advanced examination into the construction of both theatrical and nontheatrical sceneries.

4355 Structures and Materials for the Stage (3) Prereq.: THTR 3134 or equivalent. A detailed study of structural methods and materials available to the theatre technician.

4356 Theatre Practicum I (1) May be taken for a max. of 3 hrs. credit. No more than a total of 5 sem. hrs. of THTR 4356 and 4358 may be taken for undergraduate credit. Participation in performance or production of a play produced by the Department of Theatre.

4414 Performance Art (3) See CMST 4144.

4420 Black Drama and Theatre (3) Also offered as ENG 4420. Study of the role of African American artists in the development of black drama and theatre, as expressed in African and New World cultures.

4500 Special Topics in Arts Administration (3) Prereq.: THTR 4024. May be taken for a max. of 9 sem. hrs. of credit when topics vary.

4520 Advanced Fundamentals of Nonprofit Arts Management (3) Prereq.: THTR 3320 or consent of instructor. Continued study of the principles of nonprofit arts management with an emphasis on the economics of the arts including the income gap, the economic impact of the industry, and the importance of arts advocacy.

4550 Advanced Development Strategies (3) Prereq.: THTR 3320 or consent of instructor. Principles of fund raising for the not-for-profit organization including grant writing, individual and corporate giving, planned giving, capital campaigns, and special events.

4800 Scene Painting I (3) Prereq.: THTR 4343 or equivalent. 1 hr. lecture; 4 hrs. lab. (IA) Contemporary scene painting for the stage; emphasis on advanced projects.

4801 History of Theatrical Design (3) Prereq.: THTR 2022. Historical survey of theatre with emphasis on the development of lighting, costume and scenic design for the Greek theatre to the present; focus on individual designer Touchstone to each discipline.

4800 Musical Theatre Production (3-1) See MUS 4500.

4830 Sound Design (3) Prereq.: THTR 1800 or consent of instructor. 2 hrs. lecture; 2 hrs. lab. Sound design principles and techniques; effect on production.

4831 Lighting Design I (3) Lighting design for the theatre; emphasis on script analysis, production concepts, and visualization.

4901 Dance History (3) Prereq.: THTR 1800 or consent of instructor. Development of dance from primitive cultures to the present.

4904 Dance Theatre (2) 6 hrs. lab. May be repeated for credit every semester. Advanced study of modern and contemporary dance and choreography.

4920 Advanced Stage Management (3) Prereq.: THTR 2020 or equivalent. Advanced training in stage management techniques, including professional experience component with departmental approval.
4831 CAD Drafting for the Theatre (3) Prereq.: THTR 3580 or equivalent; 2 hrs. lecture; 2 hrs. lab. Introduction to the fundamentals of AutoCAD drafting and its use in the theatre industry.

4901 Special Projects in Theatrical Design (1-3) Prereq.: consent of instructor. Approval of projects required by instructor prior to registration. Execution of practical production projects in theatrical design.

4902 Special Projects in Theatre Technology (1-3) Prereq.: consent of instructor. 2-6 hrs. lab. Approval of production projects required by instructor prior to registration. Execution of practical production projects in theatrical technology.

7001 Independent Projects in Performance Training (1-6) Prereq.: consent of instructor. May be repeated for a max. of 6 sem. hrs. of credit. Individual projects in performance training with close faculty supervision; emphasis is on the areas: acting, movement, voice, directing, or design.

7008 Drama Writing (3-4) See ENGL 7008.

7130 Script Analysis and Dramaturgy (3) Methods of studying playscripts in preparation for their production on stage, through Aristotelian, modern, and postmodern approaches.

7220, 7221 Acting Studio IA, IB (5.5) Prereq.: admission to MFA program; 2 hrs. lab. (IA) Intensive work in actor's basic tools; text analysis; comprehensive Stanislavskian technique and characterization. (II) Acting demands of commedia dell'arte, comedy of manners, and farce; scene work with selected plays.

7224, 7225 Acting Studio IIIA, IIB (2.2) Prereq.: THTR 7223. (III) Special acting problems and stretch roles (IIB) Problems in audition techniques and building a career as a professional actor.

7228 Voice for the Actor I (3) Prereq.: admission to the MFA program; 2 hrs. lecture; 2 hrs. lab. Development of vocal process through exercises in relaxation, alignment, and breathing; basics in speech articulation.

7229, 7230, 7231 Voice for the Actor III, IV, V (3, 3, 3) Prereq.: THTR 4228 or equivalent; 2 hrs. lecture; 2 hrs. lab. (III) Dynamics of vocal range in more complex texts; work on major periods of dramatic literature; emphasis on verse plays. (IV) Dialects and special problems in vocal characterization. (V) Individual coaching in scene study from THTR 7232 and in support of performance problems.

7233 Stage Movement III (4) Prereq.: admission to MFA program or consent of instructor. 3 hrs. lecture; 1 hr. lab. Continuation of THTR 7233 with additional work on ballet, Tai Chi, physical improvisation, and dance.

7235, 7236 Stage Movement V, VI (3, 3) Prereq.: THTR 7234 or equivalent; 2 hrs. lecture; 2 hrs. lab. (V) Unarmed and armed stage combat techniques. (VI) Period styles: manners, mores, dance forms, and social understanding in movement for major epochs of theatre from the Dark Ages through the 18th century; advanced stage combat.

7237, 7238 Stage Movement VII, VIII (3, 3) Prereq.: THTR 7236 or equivalent; 2 hrs. lecture; 2 hrs. lab. (VII) Continued movement styles with focus on Greek, commedia dell'arte, 19th century, and experimental theatre. (VIII) Exposure to major works and movement techniques as performance material.

7320, 7321 Directing Seminar IA, IB (3, 3) Prereq.: admission to program or consent of instructor. 2 hrs. lecture; 2 hrs. lab. (IA) Stage director's study of a script in preparation for creating an approach to production. (II) Translating a play's text and director's approach into dynamic images on stage; one act of a realistic play mounted on workshop level.

7322, 7323 Directing Seminar IA, IB (3, 3) Prereq.: THTR 7122. Continuation of the concepts presented in THTR 7120. Examination of fluid and gas power systems for moving scenery. Topics include fluid power calculations and formulas related to pneumatics and hydraulics as well as delivery systems, actuators and valves.

7326 Scenery Automation (3) Prereq.: THTR 7620. 2 hrs. lecture; 2 hrs. lab. Examination of scenery control systems, including PLC programing, positioning control, software and all in-one control systems.

7326, 7327 Theatre Technology Seminar IA, IB (3, 3) Prereq.: admission to MFA design technology program. (IA) Instruction in scene technology. (II) Hands-on experience with scenic shop. (IB) Techniques using electronics and optics for the stage.

7326, 7327 Theatre Technology Seminar II, III, IB (3, 3) Prereq.: admission to MFA design technology program. (IA) Emphasis on theatre architecture and theatrical consultation. (II) Emphasis on roles and responsibilities of the technical director and on preparation to enter the professional world.

7630 Directed Professional Internship (1-12) Prereq.: third-year status in theatre MFA program. 2-24 hrs. lab. Pass-fail grading. A theatre-related internship with a professional organization or business (lighting manufacturer, professional theatre, computer company).

7721 Lighting Design II (3) Prereq.: admission to MFA design technology program or consent of instructor. Process of lighting design, lighting equipment, and assistant designer skills.

7722, 7723 Lighting Design III, IV (4, 4) Prereq.: THTR 7721 or equivalent. 3 hrs. lecture; 2 hrs. lab. (III) Elements of lighting design explored through use of the light lab. (IV) Complete presentations of lighting designs for various types of productions.

7801 Properties I (3) Prereq.: admission to MFA in Theatre program or consent of instructor. 1 hr. lecture; 4 hrs. lab. A detailed examination of basic materials, techniques, and procedures used by the designer and technician in the construction of stage properties.

7802 Properties II (3) Prereq.: THTR 7801, admission to MFA in Theatre program or consent of instructor. 1 hr. lecture; 4 hrs. lab. A continuation of the concepts presented in THTR 7801.

7811 Furniture and Woodworking I (3) Prereq.: admission to MFA in Theatre program or consent of instructor. 3 hrs. lecture; 3 hrs. lab. Advanced studies in woodworking technologies including materials, construction techniques, and styles.

7822 Furniture and Woodworking II (3) Prereq.: THTR 7821, admission to MFA in Theatre program or consent of instructor. 3 hrs. lecture; 3 hrs. lab. Advanced studies in woodworking technologies including materials, construction techniques, and styles.

7802 Scene Shop Technologies and Theatre Safety II: Metalworking (3) Introduction to traditional and modern materials (primarily wood and plastic products); construction tools; techniques for executing theatrical constructs; shop organization and management; theatre safety; and occupational health.

7802 Scene Shop Technologies and Theatre Safety II: Metalworking (3) Introduction to traditional and modern materials (primarily metal products); construction tools; techniques for executing theatrical constructs; shop organization and management; theatre safety; and occupational health are covered.

7810 Structural Design for the Stage I (3) Develops student understanding and skills for analyzing loading conditions on scenic elements and engineering a structural design for executing these elements.

7810 Structural Design for the Stage II (3) Prereq.: THTR 7810. Continuation of the concepts presented in THTR 7810.

7815 Theatrical Production Planning (3) The management of theatre production through the design, construction, and maintenance of scenery and properties. Investigation of the labor and material cost budgeting for each of the production areas.

7818 Entertainment Rigging (3) Introduction to traditional rigging techniques for the stage, arena and outdoor venues.

7820 Stage Machinery Physics (3) Examination of Newtonian dynamics in aid to determining the behavior of moving scenery. Understanding how the components of a stage machine system are specified to withstand the forces encountered.

7821 Hydraulics and Pneumatics in Theatre (3) Prereq.: THTR 7620. 2 hrs. lecture; 2 hrs. lab. Examination of fluid and gas power systems for moving scenery. Topics include fluid power calculations and formulas related to pneumatics and hydraulics as well as delivery systems, actuators and valves.

7901 Seminar in Drama: Classical to Renaissance (3) May be taken for a max. of 6 hrs. of credit when topics vary.

7911 Seminar in Drama: Renaissance to Realism (3) May be taken for a max. of 6 hrs. of credit when topics vary.
7912 20th Century First-Wave Avant-Garde Drama and Theatre (3) Survey of dramatic and performance practices in the first half of the twentieth century with emphasis on European and American first-wave avant-garde.

7913 Seminar in American Drama: 18th Century to the Present (3) May be taken for a max. of 6 hrs. of credit when topics vary.

7914 Drama and Performance: World War II to the Millennium (3) Survey of war performance and drama traditions from the end of World War II to the end of the twentieth century.

7922 Seminar in Drama of the African Diaspora (3) May be taken for a max. of 6 hrs. credit when topics vary. Contextualizing forms and expressions of drama in the black cultures of the African diaspora in the New World.

7921 Practicum in Theatre Directing (3) 2 hrs. lecture; 3 hrs. lab. May be taken for a max. of 6 hrs. of credit when topics vary. Specific theatrical form and style studied through research, direction of a one-act play, and participation in a specific Department of Theatre production.

7922 Seminar: Performance Theories and Criticism (3) May be taken for a max. 6 hrs. of credit when topics vary.

7923 Seminar in Gender, Sexuality, and Performance (3) Survey of practical and theoretical approaches, attitudinal issues, and critical making issues of gender and sexuality as they relate to performance.

7924 Seminar: Evolution of Dramatic Theory (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary. Major concepts of dramatic theory and practice in classical, medieval, and Renaissance periods.

7925 Seminar: Evolution of Dramatic Theory (3) May be taken for a max. of 6 sem. hrs. of credit when topics vary. Major concepts of dramatic theory and practice in the European and American modern period.

7926 Seminar in African Drama and Theatre (3) May be taken for a max. 6 hrs. credit when topics vary. Comparative study of the form and expressions of drama among the various cultures of Africa.

7927, 7928 Problems in Theatre History (3,3) Each course may be taken for a max. of 6 hrs. of credit. Study of a selected figure, period, or trend in the history of the theatrical arts.

7929 Independent Research: Theatre (1-3) Pre req.: consent of instructor. May be taken for a max. of 6 sem. hrs. credit. For advanced graduate students who wish to pursue research on special problems outside of thesis or dissertation.

7930 Theatre Production (1-12) Pre req.: admission to MFA theatre program. 2-24 hrs. lab. Major acting, directing, and production responsibilities for one or more productions.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

8000 Dissertation Research (1-12 per sem.) "S"/"U" grading.

UNIVERSITY COLLEGE • UC

0006 Study Skills (2) For students in Student Support Services Program only. Not for degree credit. Pass-no credit grading. Permission of instructor. Basic learning principles; includes time management, goal setting, note-taking, listening skills, reading, theory and report writing, memory, and analyzing study problems.

0050 Introduction to Mentoring, Education, and Research (2) Pre req.: For students in HHHI Professors Program or LA-STEM Research Scholars Program only. Not for degree credit. Pass-no credit grading. Students will be mentored through preparation to become mentors and researchers. Introduction to college success tools, including learning strategies, time management, and organization.

0060 Pursuing Mentoring, Education, and Research (2) S Pre req.: UC 0050. For students in HHHI Professors Program or LA-STEM Research Scholars Program only. Not for degree credit. Pass-no credit grading. May be taken for a max. of 3 sem. hrs. credit. Advanced independent mentoring, research presentation skills, and focused graduate school preparation.

VETERINARY MEDICINE • VMED

Courses in the professional curriculum are designated as Veterinary Medicine (VMED) courses, rather than departmental courses, because of the integration of the disciplines. These courses, all at the 5000 level, are described in the School of Veterinary Medicine Bulletin. Prerequisite for enrollment in these courses is formal admission to the professional curriculum in the School of Veterinary Medicine. All courses must be taken in the proper sequence, as each is a prerequisite for the succeeding course. The following courses are utilized by all concentrations in the Veterinary Medical Sciences graduate program.

7001 Seminar: Veterinary Medical Sciences (1) May be taken for a max. of 8 hrs. of credit. Reports and discussions on topics of current interest in various disciplines of veterinary medicine.

7004 Introduction to Research (2) S Pre req.: consent of instructor. Concepts and methodology in developing research programs; selection of a research problem; planning, execution, and publication of original research.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

8900 Pre-dissertation Research (1-9) May be taken for a max. of 9 sem. hrs. of credit.

9000 Dissertaton Research (1-12 per sem.) "S"/"U" grading.

VETERINARY SCIENCE • VETS

2000 Anatomy and Physiology of Farm Animals (3) Anatomy and physiology of farm animals; important species differences.

2020 Herd Health and Disease Management of Domestic Farm Animals (3) S Herd health program of preventive medicine for farm livestock; disease processes, epidemiology, and rational approaches to therapeutic principles and control of diseases.

3002 Practical Work with Livestock (1) S 3 hrs. lab. Dehorning, castration, branding, methods of restraint, and methods for control of parasites.

WOMEN’S & GENDER STUDIES • WGS

General education courses are marked with stars (★).

1001 Evolution of Sex and Gender (3) Interdisciplinary course, team-taught by faculty in the physical and social sciences. Covers evolution as differential reproduction; reproduction-related earth history highlights; genetics of sex; animal reproduction strategies; anatomy and physiology of human reproductive systems; evolutionary trajectories in primates; sex and gender in human prehistory and in culture.

★ 2500 Introduction to Women’s and Gender Studies (3) Interdisciplinary study of women’s lives: work, family, sexuality, economic development, political and social change; variance in sex roles among cultural groups and in different historical periods.

★ 2900 Gender, Race, and Nation (3) The constructs of gender and sexuality across diverse racial, ethnic, cultural, and class boundaries.
3150 Survey of Feminist Theory (3) Interdisciplinary study of a range of feminist theories through which to consider the roles of women, gender, and sexuality.

3600 Women, Gender, and Leadership (3) Also offered as ELRC 1600. Interdisciplinary study of gender and leadership; with emphasis on women as leaders in a range of settings in education and society.

4028 Gender and American Politics (3) See POLI 4028.
4087 Gender, Place and Culture (3) See GEOG 4087.

4500 Special Topics in Women's and Gender Studies (3) Prereq.: WGS 2500. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Issues central to contemporary feminist inquiry.

4900 Independent Reading and Research in Women's and Gender Studies (3) Prereq.: WGS 2500 and permission of instructor and department. May be taken for a max. of 6 sem. hrs. when topics vary. Reading and research on selected topics that emphasize feminist interdisciplinary approaches.

7150 Seminar in Feminist and Gender Theory (3) Topics in recent and contemporary theory in a range of disciplines including the humanities, social sciences, natural and physical sciences, design, and education; students are encouraged to develop research projects relevant to their primary disciplines and to their research interests.

7900 Independent Reading and Research in Women's and Gender Studies (3) S May be taken for a max. of 6 sem. hrs. of credit.