

ACADEMIC ABBREVIATIONS—COURSES

AAS	African American Studies	JAPN	Japanese
ABAS	Agribusiness and Agriscience	JOUR	Journalism
ACA	Academic Success Program	LATN	Latin
ACSI	Actuarial Science	LEST	Leadership Studies
ACTG	Accounting	LIBS	Library Science
ADV	Advertising	LITS	Literacy Studies
AERO	Aerospace	LSM	Leisure and Sports Management
ANTH	Anthropology	MATH	Mathematics
ARAB	Arabic	MC	Mass Communication
ART	Art	MES	Middle East Studies
ASTL	Advanced Studies in Teaching and Learning	MGMT	Management
ASTR	Astronomy	MKT	Marketing
ATHC	Athletic Coaching	MRAT	Recording Arts and Technologies
ATHT	Athletic Training	MS	Military Science
BCEN	Business Communication and Entrepreneurship	MUAP	Applied Music
BIOL	Biology	MUED	Music Education
BLAW	Business Law	MUEN	Music Ensembles
BUAD	Business Administration	MUHL	Music History and Literature
CDFS	Child Development and Family Studies	MUPD	Music Pedagogy
CDIS	Communication Disorders	MUS	Music
CHEM	Chemistry	MUTH	Music Theory
CHIN	Chinese	NFS	Nutrition and Food Science
CIM	Concrete Industry Management	NURS	Nursing
CJA	Criminal Justice Administration	ORCO	Organizational Communication
CMT	Construction Management Technology	PHED	Physical Education
COED	Cooperative Education	PHIL	Philosophy
COMM	Communication (Speech)	PHOT	Photography
CSCI	Computer Science	PHYS	Physics
DANC	Dance	PLEG	Paralegal Studies
DYST	Dyslexic Studies	PORT	Portuguese
ECON	Economics	PR	Public Relations
ELED	Elementary Education	PRSE	Professional Seminar
EMC	Electronic Media Communication	PRST	Professional Studies
ENGL	English	PS	Political Science
EST	Environmental Science and Technology	PSCI	Physical Science
ET	Engineering Technology	PSY	Psychology
EXL	Experiential and Service Learning	QM	Quantitative Methods
EXSC	Exercise Science	READ	Reading
FCSE	Family and Consumer Sciences Education	REC	Recreation
FIN	Finance	RIM	Recording Industry
FL	Foreign Languages	RS	Religious Studies
FOED	Foundations of Education	RUSS	Russian
FREN	French	SABR	Study Abroad
GEOG	Geography	SAFE	Safety
GEOL	Geology	SOC	Sociology
GERM	German	SPAN	Spanish
GERO	Gerontology	SPED	Special Education
GRAF	Media Design/Graphics	SPSE	School Personnel Service Education
GS	Global Studies	STAT	Statistics
HEBR	Hebrew	SW	Social Work
HHP	Health and Human Performance	TELC	Education
HIST	History	THEA	Theatre
HLTH	Health	TRNS	Transportation
HSC	Human Sciences	TXMD	Textiles, Merchandising, and Design
HUM	Humanities	UH	University Honors
IDES	Interior Design	UNIV	University Seminar
IED	Industrial Education	WMST	Women's Studies
IMIC	Interdisciplinary Microanalysis and Imaging Center	YOED	Youth Education
INFS	Computer Information Systems		
ITAL	Italian		



Course Descriptions

Academic Success Program [ACA]

3000 Theory and Practice of College Peer Tutoring. One credit. Prerequisite: Consent of department. Provides training in the knowledge and fundamental skills useful to tutors in various academic disciplines. Pass/Fail.

Accounting [ACTG]

- 1110 Introduction to Accounting.** Three credits. A one-semester general course for students desiring a knowledge of accounting terms, financial statements, and the capital structures of sole proprietorships, partnerships, and corporations. (Credit not allowed in a business major or minor.)
- 2110 Principles of Accounting I.** Three credits. Prerequisites: A college-level math course; ENGL 1010; sophomore standing. Financial accounting for proprietorships and partnerships with emphasis on the accounting cycle for service and merchandising organizations. Additional topics include accounting for receivables; inventories; property, plant, and equipment; and current liabilities. (Not open to students with credit in ACTG 3000.)
- 2120 Principles of Accounting II.** Three credits. Prerequisite: ACTG 2110. A continuation of financial accounting concepts with emphasis on debt and equity structures, the statement of cash flows, and ratio analysis. Managerial accounting topics include job, standard- and activity-based costing, cost/volume/profit (CVP) analysis, and budgeting. (Not open to students with credit in ACTG 2125 or 3000.)
- 2125 Principles of Accounting II for Accounting Majors.** Three credits. Prerequisite: ACTG 2110 with a minimum grade of C. Reporting for corporations with emphasis on issues relating to debt and equity, the Statement of Cash Flows, reporting for manufacturing companies, and other issues related to the profession of accounting. (Not open to students with credit in ACTG 2120.)
- 3000 Survey of Accounting for General Business.** Three credits. Accounting cycle given minor emphasis; financial statement analysis and managerial uses of accounting given major emphasis. May be used for general business minors or M.B.A. candidates who have had no previous accounting courses. (Not open to Accounting majors and students with credit in ACTG 2110 and 2120.)
- 3020 Managerial Accounting.** Three credits. Prerequisites: ACTG 2120 or 3000; junior standing. Analysis of costs of products and services, recognition of quantitative techniques relating to management objectives, overview of master budgeting, and planning and control techniques. Designed for nonaccounting majors. (Not open to students with credit in ACTG 3310 or Accounting majors.)
- 3110 Intermediate Accounting I.** Three credits. Prerequisites: ACTG 2125 or ACTG 3000 with minimum grade of C; MATH 1630; GPA of at least 2.00; junior standing; passing grade on departmental admission exam. Introduction to professional accounting standards and financial statement preparation. Review of the accounting cycle. Extensive coverage of time value of money concepts and accounting for and reporting of current assets; current liabilities; and property, plant, and equipment.
- 3120 Intermediate Accounting II.** Three credits. Prerequisite: ACTG 3110 with minimum grade of C. Continuation of Intermediate Accounting I with professional accounting standards and financial statement preparation. Extensive coverage of accounting for and reporting of investments, long-term liabilities, owners' equity and related issues, revenue recognition, accounting changes and errors, and cash flows.
- 3310 Cost Accounting.** Three credits. Prerequisites: ACTG 2125 or 3000 with minimum grade of C; MATH 1630; INFS 2200; junior standing. Determine costs of products or services, apply quantitative concepts relating to management objectives, prepare master budgets, and perform various techniques for planning and controlling in a business environment.
- 4310 Advanced Cost Accounting.** Three credits. Prerequisites: ACTG 3310 with minimum grade of C; QM 3620. In-depth analysis of costs; quantitative concepts relating to management objectives, control, and planning. Cost analysis and management accounting practices and problems using a variety of problem sets, statistical techniques, case studies, computer applications, and other materials.
- 4420 Accounting Internship.** Three credits. Prerequisites: Senior standing or consent of advisor; a plan of activities with the associated firm prior to registration. Active employment with an accounting firm, governmental agency, or business firm for accounting field work; credit given for experience and research upon completion of acceptable work and formal report. (Not counted as part of 24-hour Accounting major requirements.) Pass/Fail.
- 4510 Accounting Systems.** Three credits. Prerequisites: ACTG 2125 or 3000 with minimum grade of C; INFS 2200; junior standing. An introduction to accounting information systems in a variety of technological environments. Emphasis on business process modeling, accounting cycle controls, and database design and implementation.
- 4530 Individual Income Taxes.** Three credits. Prerequisites: ACTG 2125 or 3000 with minimum grade of C; junior standing. Addressed to a determination of taxable income for individuals; federal income tax returns and research methods.
- 4550 Introduction to Federal Income Tax.** Three credits. Prerequisites: ACTG 2125 with minimum grade of C. Federal income tax concepts applicable to business entities (C corporations, S corporations, partnerships, limited liability companies, and sole proprietorships) and individuals. Emphasizes the role taxes play in business and investment decisions.
- 4610 Governmental Accounting and Reporting.** Three credits. Prerequisites: ACTG 3120 with minimum grade of C. State and local government accounting principles and procedures; classifications of accounts for budgetary and financial reporting; accounting for revenues and expenditures or expenses; reporting for funds and the governmental entity; and auditing the governmental entity.
- 4620 External Auditing I.** Three credits. Prerequisites: ACTG 3120 and 4510 with minimum grade of C; QM 3620. Applications of theory and principles of external auditing. Includes gathering and evaluating evidence on accounting data, preparation of reports by public accountants, evaluation of internal controls, use of sta-

tistical sampling, legal liability and ethical requirements of public accountants. (Recommended for CPA exam candidates.)

- 4640 Internal Auditing.** Three credits. Prerequisites: ACTG 3120 and 4510 with a minimum grade of C; QM 3620. Application of internal auditing concepts. Includes gathering and analyzing company data, assessing risk, applying professional and ethical standards, performing statistical sampling, and preparing internal audit reports. (Recommended for CIA exam candidates.)
- 4650 Financial Accounting Standards.** Three credits. Prerequisite: ACTG 3120 with minimum grade of C. Analysis of propositions, axioms, theorems, controversial accounting concepts, and authoritative statements and research on accounting principles.
- 4680 Forensic Accountancy and Fraud Auditing.** Three credits. Prerequisite: ACTG 4620 or 4640 with minimum grade of C or approval of department chair. The practice of forensic accounting, i.e., nontraditional investigative aspects of accountancy (e.g., litigation support, business interruptions, etc.); emphasis on fraud prevention and the detection of fraudulent intent to obtain improper individual or group gains.
- 4980 Independent Study in Accounting.** One to three credits. Prerequisites: Senior standing, 3.00 overall GPA, and consent of department chair. Accounting research or project in contemporary problem areas under direct faculty supervision. Aggregate credits allowable toward a degree may not exceed 3 hours under 4980 courses.

Actuarial Science [ACSI]

- 4140 Mathematical Foundations of Actuarial Science.** Three credits. Prerequisites: MATH 3020 (or MATH 3110) and STAT 3150; or consent of instructor. Integrates calculus, probability, and risk management topics into fundamental tools for assessing risk in an actuarial environment. Calculus and probability topics include derivatives, integrals, partials, random variables, distributions, and conditional probability. Risk topics include frequency and severity. Insurance concepts such as retention, deductible, coinsurance, and risk premiums. For students in Actuarial Science, a preparatory course for the Society of Actuaries/Casualty Actuarial Society Course/Exam 1.
- 4200 Introduction to Mathematics of Investment.** Three credits. (Same as MATH 4200.) Prerequisites: MATH 1910 and one semester of probability/statistics; or consent of instructor. Calculus and probability/statistics used to model and analyze investments in bonds, treasury bills, stocks, and other derivatives. Topics include obtaining the price of a bond as a function of interest rate, developing formulas for duration and convexity to study the sensitivity of price to interest rate, and mathematical modeling of investor preference and attitude toward risk.
- 4220 Mathematics of Pricing Theory.** Three credits. Prerequisites: ACSI/MATH 4200 and ECON 2410, 2420; or consent of instructor. Applies calculus and theory of interest tools to intermediate topics in microeconomics. Topics include mathematics of supply, demand, and equilibrium; prices, costs, and the gains from trade; consumer behavior; elasticities; competition; monopoly; market power, collusion, and oligopoly; the mathematics of risk and uncertainty; and surplus economics. For students in Actuarial Science, a preparatory course for the Society of Actuaries/Casualty Actuarial Society Course/Exam 2.
- 4230 Mathematics of Compound Interest.** Three credits. Prerequisite: ACSI 4200 or consent of instructor. For students in Actuarial Science, offers preparation for the Society of Actuaries/Casualty Actuarial Society Exam 2. Topics include measurement of interest (including accumulated and present value factors), annuities certain, yield rates, amortization schedules, sinking funds, and bonds and related securities.
- 4240 Mathematics of Interest Theory, Economics and Finance.** Three credits. Prerequisite: ACSI 4230 or consent of instructor. Applies calculus and theory of interest tools to intermediate topics in microeconomics and macroeconomics and topics in finance. Topics include pricing activities, the simplified Keynesian model, interest and discount rates, valuation of payment streams, yield rates, amortization, cash flows and internal rate of return, stock and bond valuation, portfolio risks, the Capital Asset Pricing Model (CAPM), efficient markets, capital structure, leverage, financial performance measurement, and basic option pricing and the Black-Scholes model. For students in Actuarial Science, a preparatory course for the Society of Actuaries/Casualty Actuarial Society Course/Exam 2.
- 4280 Undergraduate Research.** One to four credits. Prerequisite: Permission of department. Independent investigation of a selected research problem under the guidance of a faculty member resulting in an oral and written report of results. May be repeated for a maximum of four credits.
- 4330 Actuarial Mathematics I.** Three credits. Prerequisites: ACSI 4230 and STAT 4190; or consent of instructor. First of a two-semester sequence; offers preparation for the Society of Actuaries/Casualty Actuarial Society Course/Exam 3. Topics include survival distributions and life tables, life insurance, life annuities, and net premiums.
- 4340 Actuarial Mathematics II.** Three credits. Prerequisite: ACSI 4330. Second of a two-semester sequence; offers preparation for the Society of Actuaries/Casualty Actuarial Society Course/Exam 3. Topics chosen from net premium reserves, multiple life functions, multiple decrement models, valuation theory and pension plans, and insurance models (including expenses and nonforfeiture benefits and dividends).
- 4600 Problems in Actuarial Science.** One to six credits. Prerequisites: Senior standing and consent of instructor. Students wishing to enroll must submit a written course/topic proposal to the department prior to the semester in which ACSI 4600 is taken. Proposal must be approved prior to taking the course. At the conclusion, each enrollee must submit a written report to the department.
- 4630 Mathematics of Risk Management.** Three credits. (Same as MATH 4630.) Prerequisite: ACSI/MATH 4200. For students in Actuarial Science, offers preparation for the Society of Actuaries/Casualty Actuarial Society Course 6. Topics include mathematical modeling of volatility; pricing of bonds, stocks, and other derivatives with uncertainty; benchmark portfolios; asset/liability management for property/casualty insurers; liability associated with a financially distressed company. Heath-Jarrow-Morton and Cox-Ingersoll-Ross models.
- 4640 Mathematics of Options, Futures, and Other Derivatives.** Three credits. (Same as MATH 4640.) Prerequisites: ACSI/MATH 4630 and 4200. For students in Actuarial Science, offers preparation for the Society of Actuaries/Casualty Actuarial Society Course 6. Topics include risk management using options, interest rate swaps, interest rate caps, Black-Scholes analysis, Taylor series expansion to obtain hedge parameters, portfolio insurance, numerical procedures, interest rate derivatives, and use of Black's model.

Advertising [ADV]

- 3020 Survey of Advertising.** Three credits. Overview of advertising principles and practices including the role of advertising in society and the marketplace, consumer behavior, advertising media, budgeting and planning, and the creation and production of advertising messages.
- 3480 Advertising Media Planning.** Three credits. Prerequisite: Admission to candidacy. Planning, implementation, and evaluation of media objectives and strategy in advertising, including media characteristics, limitations, and budgeting.
- 4160 Advertising Copywriting.** Three credits. Prerequisite: Admission to candidacy. Advanced techniques and skills in the writing and design of advertising messages, emphasizing print and electronic media.
- 4170 Advertising Campaigns.** Three credits. Prerequisites: Admission to candidacy; ADV 3480 and 4160 or permission of instructor. Planning, designing, and executing all phases of a complete advertising campaign. An opportunity for advanced students to synthesize and apply skills from previous courses.
- 4230 Advertising Management.** Three credits. Prerequisites: Admission to candidacy; junior standing; ADV 3480; ADV 4160 or permission of instructor. Problems, decisions, and decision-making processes of advertising managers. Emphasis on decision making across functional areas of advertising process.

Aerospace [AERO]

- 1010 Introduction to Aerospace.** Three credits. History of aerospace, opportunities in the field, fundamentals of flight, navigation, meteorology, and Federal Aviation Regulations. Open to all students desiring a general and practical knowledge of aviation.
- 1020 Theory of Flight.** Three credits. Basic aerodynamics with emphasis on lift, weight, thrust, and drag forces acting upon an airplane in flight. Five-hour flight demonstration required at student expense. Fee required.
- 1230 Aviation Laws and Regulations.** Three credits. Those portions of Titles 14 and 49 of the U.S. Code of Federal Regulations concerning airman certification and aircraft operations.
- 1340 Introduction to Aerospace Maintenance.** Three credits. Organization and operation of aircraft maintenance activities. Federal regulations and aviation maintenance law. Maintenance management function in practical settings.
- 1380 Aerospace Maintenance Shop Practices.** Three credits. Use of common tools, measuring devices, and special aircraft tools. Shop layout for aircraft maintenance management.
- 2010 Aviation Weather.** Three credits. Atmosphere, measurement of meteorological elements, and effects of these on air operations.
- 2140 Civil Aviation.** Three credits. Historical development and present status of air transportation facilities; state and federal regulations; legal characteristics of aerospace industry; problems and services of commercial air transportation.
- 2201 Professional Pilot Flight Lab I.** One credit. Prerequisite: AERO 2230 or simultaneous completion of AERO 2230. Flight instruction leading to the FAA Private Pilot Certificate; the first of four flight labs in the Professional Pilot concentration sequence. Private Pilot certificate must be completed during this course. Fee required.
- 2220 Navigation.** Three credits. The principles of pilotage, dead reckoning, and radio/electronic methods of navigation as applied to cross-country flight planning.
- 2230 Professional Pilot I.** Three credits. First of four classes in the Professional Pilot concentration sequence. Provides students with aeronautical knowledge required for certification as a Private Pilot. Emphasis placed on acquisition of basic knowledge in the areas of aerodynamics, performance, systems, weather, Federal Aviation Regulations, and flight planning.
- 2331 Airframe Inspection.** Three credits. Requirements, techniques, and procedures.
- 2342 Powerplant Inspection.** Three credits. Requirements, techniques, and procedures.
- 2371 Aircraft Welding.** Three credits. Various types of aircraft welding techniques and procedures.
- 2381 Non-Metallic Structures: Dope, Fabric, and Finishing.** Three credits. Aircraft fabric covering and finishing.
- 2930 Cooperative Education.** Three credits. Provides students with opportunities for on-the-job experiences related to academic major. Consult department. Pass/Fail.
- 2940 Cooperative Education.** Three credits. Provides students with opportunities for on-the-job experiences related to academic major. Consult department. Pass/Fail.
- 3020 Aerospace Materials.** Three credits. Explores materials used in aerospace applications throughout their development from the standpoint of their properties, economic impact, and future possibilities. The need for new materials to fill current requirements included.
- 3030 Propulsion Fundamentals.** Three credits. Principles of operations, major components, and important features of typical propulsion systems used in aircraft and missiles, from reciprocating to reaction.
- 3050 Women in Aviation.** Three credits. Explores the many roles of women in this nontraditional field. Research on the history of women in aviation and their political and social impact on aviation, industry, and the country.
- 3080 Aviation Weather II.** Three credits. Prerequisite: AERO 2010. Advanced weather concepts, forecasting, and applications to flight dispatch problems. Spring only.
- 3100 Aerospace in Our Lives.** Three credits. Open course for non-majors which allows exploration of the aerospace world in which we live. Credit not applicable to Aerospace major.
- 3170 Flight Safety.** Three credits. Prerequisite: AERO 1020. Addresses safety issues inherent in flight operations, including human factors, maintenance and design factors, and weather implications. Examines numerous case studies involving aircraft accidents or incidents to assist students in identifying potential risks and hazards in flight environment.
- 3202 Cross-Country Flight Lab.** One credit. Prerequisites: Private Pilot Certificate and AERO 2230 or simultaneous completion of AERO 2230. Flight instruction leading to completion of the cross country requirement for the FAA Instrument Rating-Airplane. Fee required.
- 3203 Professional Pilot Flight Lab II.** One credit. Prerequisites: Private Pilot Certificate; AERO 3210 or simultaneous completion of AERO

3210. Flight instruction leading to the FAA Instrument Rating; second of four flight labs in the Professional Pilot concentration sequence. Instrument Rating must be completed during this course. Fee required.

- 3204 Professional Pilot Flight Lab III.** One credit. Prerequisites: AERO 3203 and 3215 or simultaneous completion of AERO 3215. Flight instruction leading to the FAA Commercial Pilot Certificate-Airplane Single-Engine Land; third of four flight labs in the Professional Pilot concentration sequence. Commercial Pilot Single-Engine Land Certificate must be completed during this course. Fee required.
- 3205 Conventional Landing Gear Airplane Laboratory.** One credit. Prerequisite: Private Pilot Certificate. Flight and ground instruction leading to conventional landing gear operation endorsement. Course includes flight and ground instruction. Fee required.
- 3206 Advanced Conventional Landing Gear Flight Laboratory.** One credit. Prerequisite: AERO 3205. Flight and ground instruction in a high-performance conventional landing gear aircraft leading to a log book endorsement in this type of aircraft. Fees required. NOTE: This is not an FAA Part 141 course.
- 3210 Professional Pilot II.** Three credits. Prerequisites: Private Pilot Certificate; AERO 2230 and 2010. Second of four classes in the Professional Pilot concentration sequence. Provides students with aeronautical knowledge required for completion of the Instrument Rating. Emphasis on acquisition of basic knowledge in the area of instrument flight.
- 3215 Professional Pilot III.** Three credits. Prerequisites: AERO 3210 and 3203. Third of four classes in the Professional Pilot concentration sequence. Provides students with aeronautical knowledge required for certification as a Commercial Single-Engine and Multi-Engine Pilot. Emphasis placed on the acquisition of advanced knowledge of aerodynamics, performance, systems for single-engine and multi-engine aircraft, and Federal Aviation Regulations.
- 3222 High-Altitude Aircraft Operations Laboratory.** One credit. Prerequisite: AERO 3240. Simulator and ground instruction in an aircraft simulator leading to a high-altitude log book endorsement. Fees required. NOTE: This is not an FAA-approved Part 141 course.
- 3223 High-Performance Aircraft Flight Laboratory.** One credit. Prerequisite: AERO 3204. Flight and ground instruction in a high-performance aircraft leading to a log book endorsement in this type of aircraft. Fees required. NOTE: This is not an FAA-approved Part 141 course.
- 3225 High-Altitude Aircraft Operations.** One credit. Prerequisite: Department head or chief pilot approval. A specialized flight-related course for certifying pilots for the ground portion of high-altitude flight in accordance with Federal Aviation Administration regulations.
- 3230 Crew Resource Management.** Three credits. Augments the student's ability to understand the emotional and logical gaps in communication in the present-day aviation crew environment by developing a better understanding of the student's relational style and personality traits in himself/herself and others. Personality profile is optional and confidential.
- 3240 Professional Pilot IV.** Three credits. Prerequisites: AERO 3204 and 3261 or simultaneous completion of AERO 3261. Last class in the Professional Pilot concentration sequence; capstone experience for students in their senior year. Provides students with an experiential view of the workings of a professional pilot career. Topics include advanced aircraft systems, flight management systems, crew resource management, aeronautical decision making, and aviation safety. Reviews Part 91, 121, and 135 FARs. Examines an aircraft system (B1900 or CRJ-200) using the training format employed by the airline industry. Includes LOFT assessments with students working as crew and learning typical air carrier procedures in one of the department's flight training devices. Fee required.
- 3241 Air Charter Flight Laboratory.** One credit. Prerequisites: AERO 3203, 3204, 3223, 3240, and 3260; consent of instructor. Air charter operation. Students will be utilized as co-pilots during transportation of university personnel. NOTE: This is not an FAA-approved Part 141 course.
- 3250 Flight Simulator.** Three credits. Instruction in the use of the flight simulator and development of proficiency to fly under instrument conditions.
- 3261 Professional Pilot Flight Lab IV.** One credit. Prerequisites: AERO 3204 and 3215. Flight instruction leading to the FAA Commercial Pilot Airplane Multi-engine Land Certificate; last of four flight labs in the Professional Pilot concentration sequence. Commercial Pilot Multi-engine Land Certificate must be completed during this course. Fee required.
- 3301 Sheet Metal Structures.** Three credits. Provides practical experience in the repair of sheet metal structures, including major repairs and alterations.
- 3322 Aerospace Reciprocating Engine Overhaul.** Three credits. Completion of a major overhaul on an aircraft engine, including procedures and acceptable techniques used in engine disassembly, inspection, repair, reassembly, and operational testing.
- 3362 Advanced Aerospace Engine Systems Maintenance and Repair.** Three credits. The operation of powerplant component systems; induction, exhaust, instrumentation, engine electrical, and propeller systems.
- 3371 Aircraft Finishing and Non-Destructive Inspection.** Three credits. Fundamentals of non-destructive inspection techniques including dye penetrant, magnetic particle, eddy current, and ultrasonic inspection.
- 3392 Reciprocating Engine Maintenance Repair.** Three credits. Reciprocating engines including theory, construction, fuel metering, ignition, and operational maintenance procedures. Inspection and repair processes are applied to operating engine systems.
- 3440 Fundamentals of Aerodynamics.** Three credits. Prerequisites: MATH 1810 or 1910, PHYS 2010/2011 or 2110/2111. Aerodynamics of powered flight. Includes theories of lift and drag and fundamentals of stability and control.
- 3510 Instrument Flight Fundamentals for Non-Pilots.** Three credits. Prerequisite: AERO 2230 or 2220. (Not open to Professional Pilot majors or students who have completed AERO 3210.) Offers preparation for certification as a Flight Dispatcher and Scheduler and the Air Traffic Control Candidates. Classroom and flight simulator instruction emphasizes advanced knowledge in the areas of aerodynamics, performance, systems, Federal Aviation Regulations. No fee required.
- 3970 Cooperative Education.** Three credits. Provides students with opportunities for on-the-job experiences related to academic major. Consult department. Pass/Fail.
- 3980 Cooperative Education.** Three credits. Provides students with opportunities for on-the-job experiences related to academic major. Consult department. Pass/Fail.

- 4040 Aerospace Seminar.** One or three credits. Prerequisite: Senior status or final semester of aerospace program. A capstone course involving analysis, synthesis, and integration of relevant academic experiences. Required of all aerospace students prior to graduation.
- 4050 Aerospace Internship I.** Three credits. Prerequisites: Junior standing and consent of department chair. Student is employed by an acceptable airline, airport director, or aerospace industry for 300 hours of field work. Pass/Fail.
- 4060 Aerospace Internship II.** Three credits. Prerequisites: Junior standing and consent of department chair. A continuation of the internship program with a different employer and place of work or a significant job category change. Pass/Fail.
- 4071 Problems in Aerospace.** One to three credits. Individual directed study in the field of aerospace.
- 4100 Airline Management.** Three credits. Airline operation and implementation of sound management practice.
- 4110 Airport Management.** Three credits. Airport operations and development of airport master plan. Fall only.
- 4130 Aerospace Physiology.** Three credits. Instruction, readings, and structured experiences to insure familiarity with the various physiological and health-related factors affecting a flyer's safety and performance.
- 4140 Seminar in Airline Administration.** Three credits. Prerequisites: AERO 4100 and senior standing. Capstone course for students selecting the airline management focus within Aerospace Administration. Individually directed course on a selected topic within the airline industry. Addresses specific airline industry issues and develops solutions to these issues in the global context within which airlines operate.
- 4150 Fixed Base Operations Management.** Three credits. The FBO operator and the essential role played in general aviation.
- 4160 Aviation Law.** Three credits. Legal responsibility in the aviation industry.
- 4170 Airport Planning and Design.** Three credits. Prerequisite: Senior standing or permission of department. Capstone course for students selecting the airport management focus within Aerospace Administration. Methods utilized in airport planning and design, including the consideration of the needs of stakeholders in the design process. Students will have opportunity to apply knowledge of airport management with the planning and design of a new airport in a major project.
- 4201 Flight Instructor - Airplane Lab.** One credit. Prerequisites: AERO 4210, current FAA Commercial Pilot Certificate, and consent of instructor. Flight and ground instruction leading to the FAA Flight Instructor - Airplane Certificate. Covers all topics of the Flight Instructor - Airplane Practical Test Standards. Flight fees required. NOTE: This is not an FAA Part 141 course.
- 4202 Flight Instructor - Instrument Lab.** One credit. Prerequisites: Current FAA Commercial Pilot Certificate with an instrument rating, AERO 3210, and consent of the instructor. Flight and ground instruction leading to the FAA Flight Instructor - Instrument Certificate. Covers all topics of the Flight Instructor - Instrument Practical Test Standards. Flight fees required. NOTE: This is not an FAA Part 141 course.
- 4203 Flight Instructor - Multiengine Lab.** One credit. Prerequisites: Current FAA Commercial Pilot Certificate with an Instrument rating, AERO 3260, and consent of the instructor. Flight and ground instruction leading to the FAA Flight Instructor - Multiengine Certificate. Covers all topics of the Flight Instructor - Multiengine Practical Test Standards. Flight fees required. NOTE: This is not an FAA Part 141 course.
- 4210 Flight Instructor Fundamentals.** Three credits. Prerequisites: Commercial Pilot Certificate, Instrument Rating-Airplane. Ground instruction leading to the Certificated Flight Instructor - Airplane, Single Engine Land. At least one FAA Ground Instructor Certificate must be completed during the course. Fee required for ground instructor exams.
- 4220 Advanced Certified Flight Instructor Fundamentals.** Three credits. Prerequisite: Certified Flight Instructor Certificate. Ground and flight instruction leading to the instrument and multiengine instructor ratings. Flight training for this course is to be taken at the MTSU Flight School. The ratings must be completed during the course. Students should consult with the chief flight instructor for a scheduled flight slot. Fee required.
- 4230 Advanced Air Navigation.** Three credits. Advanced navigation equipment and operation procedures, including international, transoceanic, and polar routes, inertial navigation, GPS, and flight dispatch communications.
- 4240 Aircraft Systems Management.** Three credits. Instruction and requirements pertaining to the activities of a flight engineer.
- 4301 Advanced Aerospace Vehicle Structural Repair.** Three credits. Nontypical structures including bonded and plastic structures. Includes planning and organizing of major structural repair projects and rebuilding of severely damaged aircraft.
- 4310 Aerospace Vehicle Systems.** Three credits. Design, use, and function of typical hydraulic, mechanical, and electrical systems used on transport category aircraft. Designed for potential pilots, flight engineers, and managers.
- 4311 Aerospace Accessory Systems Maintenance and Repair.** Three credits. A laboratory course providing experience in the maintenance, inspection, and repair of aircraft system components.
- 4312 Turbine Engine System.** Three credits. Advanced course in the maintenance of complex systems.
- 4332 Reciprocating Engine Troubleshooting.** Three credits. A laboratory course providing practical experience in inspecting and troubleshooting problems with reciprocating engines and powerplant systems.
- 4340 Maintenance Management Capstone.** Three credits. Prerequisite: Students **must** be in the last 18 hours of coursework before graduation. Students assigned a specific task directly related to the knowledge and skills gained during their progress through the Maintenance Management concentration. Students expected to complete assigned project with minimum guidance from the instructor. Pass/fail; passing grade required for graduation from the Maintenance Management program.
- 4342 Turbine Engine Inspection and Troubleshooting.** Three credits. A laboratory course providing practical experience in turbine engine inspection to include hot section inspection, engine operation, and troubleshooting.
- 4371 Advanced Aerospace Vehicle Systems Overhaul.** Three credits. Complete repair and overhaul of complex aerospace vehicle

systems including hydraulics, electric, pneumatics, fuel, and oil. Shop layout and quality control procedures stressed.

- 4381 Advanced Aerospace Accessory Systems Maintenance and Repair.** Three credits. Repair and overhaul of complex accessory systems and subsystems. Practical experience in overhaul of air conditioning, pressurization, power brakes, constant speed drives, and jet fuel controls.
- 4392 Aerospace Turbine Engine Maintenance and Overhaul.** Three credits. A laboratory course in field maintenance and repair of turbine engines and components. Includes limited overhaul procedures and techniques. Management procedures stressed.
- 4400 Space.** Three credits. History of global space exploration and the successes and failures of manned and unmanned efforts in the race to the moon.
- 4440 Aircraft Performance.** Three credits. Prerequisites: AERO 3440. Determination of performance from basic lift, drag, power, and structural characteristics of the airplane. Use of flight charts. Effects of loading on performance.
- 4490 Aerospace Science for Teachers.** Three credits. An introduction to the total aviation and space effort.
- 4530 Air Traffic Control.** Three credits. FAA Air Traffic Control system used to regulate air traffic during enroute and terminal phases of flight, with emphasis on communication, navigation, control equipment, and procedures. Fee required. Fall only.
- 4560 Advanced Air Traffic Control.** Four credits. Prerequisites: AERO 2220, 3510, and 4530. Capstone course for FAA Collegiate Training Initiative. Focuses on mastery of concepts acquired in AERO 4530. Includes computer simulations conducted in high-density, high-workload conditions. Emphasizes situational analysis, decisive action, and problem-solving ingenuity in terminal and enroute ATC environments. One three-hour lecture and one one-hour laboratory. Fee required. Spring only.
- 4580 Flight Dispatch and ATP Written Preparation.** Three credits. Prerequisites: AERO 1230, 3080, and 3510. First of two classes providing students with the knowledge required for certification as an aircraft dispatcher. Topics include human factors, dispatch resource management, aircraft systems, weight and balance, and aircraft performance. The FAA computerized aircraft dispatcher (ADX) exam must be passed during this course. Fall only.
- 4590 Flight Dispatch.** Three credits. Prerequisite: AERO 4580. Second of two classes providing students with the knowledge required for certification as an aircraft dispatcher. Explores factors necessary to prepare a flight plan such as weather analysis, enroute charts, dispatch release, and emergency/abnormal procedures. Capstone course for Flight Dispatch and Scheduling concentration. Fee for required certification examination. Spring only.
- 4730 Honors Seminar in Aviation Psychology.** Three credits. Application and physiological testing and research techniques in aviation education, management, and technology.

African American Studies [AAS]

- 2100 Introduction to African American Studies.** Three credits. Introductory interdisciplinary survey course which examines the African American experience from enslavement through the present; social, religious, political, and cultural interactions evolving from that experience.

4600 Interdisciplinary Seminar in African American Studies. Three credits. Selected topics, issues, and problems in the African and African American experience. Course emphasis on primary source materials, critical reading, and critical analysis. Topics will vary. **This course may not be repeated for additional credit hours in the minor.**

4990 Independent Study in African American Studies. Three credits. Allows the examination of a specific topic within the study of Africa, the Caribbean, or America. Student conducts research and confers regularly with the instructor. Work must draw upon theories and methods applicable to African American Studies. See the program director for guidelines. **This course may not be repeated for additional credit hours in the minor.**

Agribusiness and Agriscience [ABAS]

Agribusiness and Agriscience (Agribusiness)

- 2130 Introduction to Agribusiness.** Three credits. Nature, scope, importance, and relationship to the general economy.
- 2500 Wine Appreciation.** Three credits. (Also listed under Plant and Soil Science.) The fundamentals of wine appreciation, wine label interpretation, and wine judging. Students will evaluate wine products and must be 21 years of age to enroll.
- 3130 Principles of Agricultural Economics.** Three credits. Applying the principles of economics to agricultural problems.
- 3490 Poultry Production and Marketing.** Three credits. (Also listed under Agribusiness.) Prerequisites: ABAS 1410; junior-level classification or higher. A comprehensive study of commercial chicken production. Topics include the structure of the U.S. commercial chicken industries; poultry housing and equipment; broiler, broiler breeder, hatchery, and commercial layer management; and poultry/egg processing. Field trips used to supplement course materials. Two lectures and one laboratory. Offered spring only.
- 3810 Milk Processing and Marketing.** Three credits. (Also listed under Animal Science.) Prerequisite: PSCI 1030/1031 or CHEM 1010/1011, 1020/1021. Biological, chemical, and physical properties of cow's milk and its value as an animal food source; techniques of processing and marketing; governmental regulations; dairy arithmetic and laboratory testing.
- 3850 Wine Science and Industry.** Three credits. (Also listed under Plant and Soil Science.) Prerequisites: CHEM 1020/1021, 1120/1121, or 1030/1031 or PSCI 1030/1031; ABAS 1610. The science and marketing of wine, including grape production, fruit processing, and fermentation technologies. Explores wine marketing in Tennessee, the U.S., and the world. Student must be 21 years of age to enroll.
- 4120 Alternative Fuels.** Three credits. (Also listed under Agricultural Education.) Nature, scope, and importance of alternative fuel vehicles in light, medium, and heavy applications. Topics include theory of operation and safety with an emphasis on gaseous and liquid fuels (ethanol, methanol, biodiesel, hydrogen, solar, wind, and other alternative fuels).
- 4130 Agricultural Marketing and Price Analysis.** Three credits. Prerequisite: ABAS 3130 or approval of instructor. Agricultural prices and their relationship to production and marketing. Agricultural marketing systems, functions, institutions, and structural changes.
- 4140 Economics of Agribusiness Management.** Three credits. Prerequisite: ABAS 3130 or approval of instructor. Application of economic concepts to agribusiness firms.

- 4150 Agricultural Policy.** Three credits. Prerequisite: ABAS 3130. Agricultural policy in a democratic society; relationship of farm groups to public policy; types of agricultural programs and appraisal of their results.
- 4160 Agricultural Cooperatives.** Three credits. Prerequisite: ABAS 3130. Role of agricultural cooperatives in collective bargaining for farmers; historical development, economic organization, and structural aspects.
- 4170 Equine Industry.** Three credits. Prerequisites: ABAS 2130 or 3130 and 3040 or approval of instructor. Operational strategies and management issues facing the equine enterprises. Financial, legal, and taxation issues pertaining to the U.S. and international equine industry.
- 4180 Internship in Agribusiness.** Six credits. Prerequisite: Approval of instructor. In-depth practical experience in a specific area of agribusiness. NOT OPEN TO STUDENTS WHO HAVE RECEIVED CREDIT FROM ANOTHER SCHOOL INTERNSHIP COURSE.
- 4190 International Agriculture.** Three credits. Prerequisite: ABAS 3130. The effect of international trade on the U.S. agricultural industry.
- 4200 Fruit and Vegetable Marketing.** Three credits. (Also listed under Plant and Soil Science.) Prerequisites: PSCI 1030/1031 and BIOL 1030/1031 or approval of instructor. Basic biochemistry of respiration, handling techniques and practices, quality assessment and marketing of fruit and vegetable crops. Both domestic and international marketing of fruit and vegetable products discussed. Examines the economic impact of improper handling on both the local producer and the end user.
- 4810 The Food Industry.** Three credits. An overview from production to processing to marketing. Covers the current status of the world's largest employer, including where and how foods are produced, distributed, and marketed and where the industry is heading in the future.
- 4820 Principles of Food Processing.** Three credits. Prerequisite: PSCI 1030/1031 or CHEM 1010/1011, 1020/1021. Principles used in the modern food industry, including thermal, refrigerated, frozen, and irradiation methods. Includes coverage of the techniques used to process major food commodities such as meats, cereal grains, and fats and oils.
- 4830 Food Quality Control.** Three credits. Prerequisites: PSCI 1030/1031 and BIOL 1030/1031 or approval of instructor. Quality control and sensory evaluation techniques utilized in food processing. Instrumental and physical methods of quality determination of raw and processed food products, hazard analysis and critical control point (HACCP), and quality philosophies employed in the industry. Sensory evaluation techniques and statistical analysis of evaluation results covered.
- Agribusiness and Agriscience (Animal Science)**
- 1410 Elements of Animal Science.** Three credits. Overview of domestic animal species, including reproduction, genetics, feeding, management, and product marketing. Species include beef, dairy, horses, swine, sheep, goats, and companion animals.
- 2110 Basic Horsemanship.** One credit. Preparation and orientation for students interested in taking horse science courses with an animal handling component. Topics include facility safety, horse control and handling, grooming, saddling, daily care considerations, and facility maintenance. Class consists of one two-hour laboratory each week.
- 2400 Fundamentals of Horsemanship.** Three credits. Concepts of applications of horse handling, particularly the riding horse. Understanding, communicating with, and influencing the equine athlete; development of basic control skills; development of balance and coordination; use of equipment. (First course in a three-part series.)
- 3040 Stable Management.** Three credits. Prerequisite: ABAS 2400 or approval of instructor. Business aspects of horse facility management and ownership emphasized. Practical approaches to management of horses and responsible horse ownership also covered.
- 3300 Equine Health.** Three credits. Familiarizes students with normal physiologic parameters and how to recognize and deal with health issues of horses. Topics include care of the pregnant broodmare, foal care, routine health maintenance, infectious diseases, commonly used medications, dentistry, lameness, neurological diseases, colic, parasites, ophthalmology, dermatology, reproduction, geriatrics, and alternative therapies.
- 3400 Horsemanship-Equitation.** Three credits. Prerequisite: ABAS 2400 and approval of instructor. Proper horseback riding, handling, mounting, and dismounting. Various gaits and proper equitation stressed. One lecture and two two-hour laboratory periods.
- 3410 Horse Breeds and Genetics.** Three credits. A review of the history of the horse from the prehistoric era to present day with a focus on the development and contributions of horse breeds in the U.S. and state horse industry. Roles of breed associations, principles of genetics, selection of desired traits, genetic abnormalities associated with specific breeds, and matching breeds to disciplines discussed.
- 3420 Genetics of Domestic Livestock.** Three credits. Prerequisites: ABAS 1410; BIOL 1110/1111, 1120/1121; junior-level classification or higher. Basic principles of genetics, crossbreeding, inbreeding, and molecular genetics. Animal breeding topics include use of quantitative traits, prediction of breeding value, methods of selection, and genetic evaluations. Offered fall only.
- 3430 Horse Production.** Three credits. Prerequisite: ABAS 2110 or 2400 or approval of instructor. Scientific principles relevant to production requirements of horses as related to exercise physiology and performance, growth, reproductive physiology and state, age, and clinical support. Facilities management, marketing, legal aspects of horse ownership, and career opportunities covered.
- 3440 Livestock Management.** Three credits. Prerequisite: ABAS 1410. Management practices for farm animal species. Practices include animal handling, restraint techniques, feeding, milking, castrations, identification methods, and herd health problems.
- 3450 Anatomy and Physiology of Domestic Animals.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121; ABAS 1410. The parts, functions, and anatomical relationships of various organs and systems of domestic animals.
- 3460 Farrier Science.** Three credits. Basic techniques in the science and art of making, fitting, and actual shoeing of horses according to proper methods. One lecture and two two-hour laboratory periods. (Offered at irregular times in conjunction with the College of Continuing Education and Distance Learning.)
- 3470 Beef Cattle Production.** Three credits. Prerequisites: ABAS 1410; junior-level classification or higher. Management practices essential for economic beef production including breeding, feeding, and herd health. Purebred, commercial, stocker, feedlot, and processing segments evaluated. Offered fall only.

- 3480 Swine Production.** Three credits. Prerequisites: ABAS 1410; junior-level classification or higher. Understanding management of the pig's environment and genetics to maximize profits. Includes nutrition, reproduction, genetics, housing, herd health, and management practices. Offered spring only.
- 3490 Poultry Production and Marketing.** Three credits. (Also listed under Agribusiness.) Prerequisites: ABAS 1410; junior-level classification or higher. A comprehensive study of commercial chicken production. Topics include the structure of the U.S. commercial chicken industries; poultry housing and equipment; broiler, broiler breeder, hatchery, and commercial layer management; and poultry/egg processing. Field trips used to supplement course materials. Offered spring only.
- 3500 Small Ruminant Production.** Three credits. Prerequisite: ABAS 1410. The study of efficient sheep and goat production and management in the U.S. Topics include genetics and selection, reproduction, health and parasite control, nutrition, forages and grazing management, and product quality and marketing.
- 3540 Dairy Production.** Three credits. Prerequisite: ABAS 1410; juniors and seniors only. Feeding and management, ruminant digestion, physiology of milk secretion, production testing and official records, sanitary regulations, handling and marketing of raw milk.
- 3810 Milk Processing and Marketing.** Three credits. (Also listed under Agribusiness.) Prerequisite: PSCI 1030 or CHEM 1010/1011, 1020/1021. Biological, chemical, and physical properties of cow's milk and its value as an animal food source; techniques of processing and marketing; governmental regulations; laboratory testing.
- 3900 Horses and Horsemanship.** Three credits. Basic requirements of horse ownership, care and associated expenses, inherent risks and safety around horses, and resources available in the horse industry. For non-horse-science majors.
- 4040 Equine Event and Facility Management.** Three credits. Prerequisite: ABAS 3040 or 3440 or approval of instructor. Fundamentals of managing equine and other livestock events and facilities covered. Involves active participation in preparing for and conducting equine events held on campus.
- 4090 Equine Reproduction and Breeding.** Three credits. Prerequisites: ABAS 2110 or 2400 and 3040 or 3430 or approval of instructor. Reproductive anatomy and physiology of the stallion and mare as they relate to modern breeding practices. Vocational training in semen handling, artificial insemination, and neonatal care. Two hours lecture and two hours laboratory.
- 4170 Equine Industry.** Three credits. Prerequisites: ABAS 2130 or 3130 and 3040 or approval of instructor. Operational strategies and management issues facing the equine enterprises. Financial, legal, and taxation issues pertaining to the U.S. and international equine industry.
- 4260 Behavior of Domestic Animals.** Three credits. Behavior aspects of raising and managing domestic animals to include equine, swine, goats, cattle, sheep, dogs, and cats. Communication, ingestive, sexual, social, aggressive, and abnormal behaviors emphasized.
- 4400 Advanced Horsemanship-Equitation.** Three credits. Prerequisites: ABAS 2400 and 3400 and approval of instructor. Advanced techniques of horseback riding at all position seats stressing proper equitation and coordination and refinement of techniques learned in previous courses.
- 4410 Animal Nutrition and Feeding.** Three credits. Prerequisites: ABAS 1410; CHEM 1020/1021 or 1120/1121; junior-level classification or higher. Advanced study of the processes of digestion and nutrient utilization in domestic animal species. Topics include monogastric and ruminant digestive anatomy and physiology; carbohydrate, lipid, protein, vitamin, and mineral utilization; feedstuff identification; practical computer-assisted feed formulation; and feeding management for agricultural animal species. Offered fall only.
- 4430 Internship in Animal Science.** Six credits. Prerequisite: Approval of instructor. In-depth practical experience in a specific area of animal science pertinent to the individual's interest. Students work with producers and agencies that have agreed to cooperate in the program and to provide adequate salary and guidance. NOT OPEN TO STUDENTS WHO HAVE RECEIVED CREDIT FROM ANOTHER SCHOOL INTERNSHIP COURSE.
- 4440 Equine Nutrition and Feeding.** Three credits. ABAS 1410 and CHEM 1010/1011 and 1020/1021 or approval of instructor. Equine digestion and utilization of nutrients, appropriate feeds and feeding management, and diseases with a nutritional component. Nutrient requirements for the horse at various stages, including maintenance, reproduction, growth, performance, age, and clinical support discussed.
- 4450 Techniques of Teaching Horsemanship.** Three credits. Prerequisites: ABAS 2400, 3400, and 4400 or approval of instructor. Basic techniques and methods used in teaching riding discussed and applied. Two-hour lecture and one two-hour laboratory.
- 4460 Behavior and Training of Horses.** Four credits. Prerequisites: ABAS 2400, 3400, 4400, and approval of instructor. The psychology, theory, and practice of training and behavior modification in horses. Students assigned a project horse for the semester. Two hours lecture and four hours laboratory.
- 4470 Advanced Beef Production.** Three credits. Prerequisite: ABAS 3470 or approval of instructor. In-depth analysis of various systems of beef production. Extensive field trips to cow-calf, feedlot, stocker, and purebred operations. Offered spring only.
- 4480 Equine Evaluation and Selection.** Three credits. Individual parts, conformation, and gaits of the horse as they relate to selecting and judging horses for production, recreation, and sport.
- 4490 Livestock Evaluation.** Three credits. Prerequisite: Approval of instructor. Comparative evaluation of beef cattle, swine, sheep, and horses. Develops defense of placing through an organized set of reasons involving terms describing the animal's characteristics. Importance of these characteristics to the animal function stressed.
- 4510 Domestic Animal Reproductive Physiology.** Three credits. Prerequisites: ABAS 1410; BIOL 1110/1111, 1120/1121; junior-level classification or higher. Advanced study of the anatomy, physiology, and endocrinology of reproduction in domestic animal species. Topics include male and female reproductive anatomy, hormonal control of reproductive processes, reproductive development, the estrus cycle, male physiology, and lactation. Current techniques to control animal reproduction described. Offered spring only.
- 4520 Companion Animal Management.** Three credits. A comprehensive study of dog and cat management. Topics include canine and feline history; selective breeding; functional anatomy; reproductive physiology and management; nutrition and feeding management; diseases and health management; behavior, communication, and training. Service role of the dog and cat highlighted. Offered fall only.
- 4540 Equine-Assisted Therapy.** Three credits. Focuses on the effective modality of the horse/human bond as it relates to various forms of equine-assisted therapy with an emphasis on therapeutic riding for people with disabilities. Management of a NARHA-approved

therapeutic program and instructor certification also covered. One hour classroom lecture, online, and experiential learning components.

4580 Advanced Judging of Horses. Three credits. Prerequisite: ABAS 4480. Systems of judging for current horse show disciplines and exercises for students who aspire to become professional judges. Ethics, contracts with management, and procedures for becoming a judge are part of focus.

4590 Dairy Cattle Judging. Three credits. Ideal dairy cattle type and relationship to performance and longevity. Classification and evaluation according to type of the various breeds and comparative judging within the breed. Selection for genetic improvement.

4860 Meat Science and Technology. Three credits. Prerequisites: ABAS 1410 and sophomore-level classification or higher. Selecting, inspecting, grading, fabricating, packaging, preserving, and cooking red meat products. Other topics include anatomy, structure, and composition of muscle, food safety, and microbiology. Offered spring only.

4980 Seminar in Horse Science. Three credits. Familiarizes horse science majors with important current scientific investigation.

Agribusiness and Agriscience (Plant and Soil Science)

1101 Introduction to Ornamental Horticulture. Three credits. Ornamental horticulture from the scientific basis to commercial operations and management systems. Emphasis on the role of horticulture in everyday living through the introductory study of growing, maintenance, and utilization of plants to benefit people and the environment. Topics include basis of plant science and history, scope, and nature of ornamental horticulture including coverage of such diverse topics as production, craftsmanship, and business management skills.

1610 Elements of Plant Science. Three credits. Fundamental plant processes; plant tissues, structures, environment, growth, development, reproduction, and propagation.

2500 Wine Appreciation. Three credits. (Also listed under Agribusiness.) The fundamentals of wine appreciation, wine label interpretation, and wine judging. Students will evaluate wine products and must be 21 years of age to enroll.

3330 Field Crop Production. Three credits. Economic importance, adaptation, origin, and history; botanical characteristics; cultural methods, uses, breeding, and pests of field crops.

3340 Soil. Three credits. Physical, chemical, and biological properties.

3350 Soil Fertility and Fertilizer. Three credits. Prerequisite: ABAS 3340. Use of fertilizer and liming materials in soil-plant relationships. Lecture/lab.

3360 Irrigation and Drainage. Three credits. Prerequisite: ABAS 3340. Comparative evaluation and interpretation of irrigation and drainage systems; water supply development; interrelationships of the environment and plants; scheduling irrigation; examination of economic and legal factors. Lecture/lab.

3370 Soil Analysis. Three credits. Prerequisite: ABAS 3340. Analysis of soils in laboratory. Lecture/lab.

3630 Forestry. Three credits. Culture, conservation, management, and utilization of forest stands.

3640 Woody Landscape Plants. Three credits. Distribution, characteristics, relationships, and adaptation of native and exotic trees

shrubs, and vines for landscape use. One-hour lecture and four-hour lab.

3660 Vegetable Gardening. Three credits. Principles of home and commercial vegetable production; adaptation, culture, fertility, diseases, and insects of vegetables.

3700 Agricultural Chemicals in Soil Environments. Three credits. Prerequisites: BIOL 1110/1111, 1120/1121, and CHEM 1010/1011, 1020/1021 or approval of instructor. Characteristics, use, mode of action, degradation, and environmental impact of fertilizers and pesticides used in agriculture; environmental safeguards imposed by federal and state regulations on chemical use.

3850 Wine Science and Industry. Three credits. (Also listed under Agribusiness.) Prerequisites: CHEM 1020/1021, 1120/1121, or 1030/1031 or PSCI 1030/1031; ABAS 1610. The science and marketing of wine, including grape production, fruit processing, and fermentation technologies. Explores wine marketing in Tennessee, the U.S., and the world. Student must be 21 years of age to enroll.

4200 Fruit and Vegetable Marketing. Three credits. (Also listed under Agribusiness.) Prerequisites: PSCI 1030/1031 and BIOL 1030/1031 or approval of instructor. Basic biochemistry of respiration, handling techniques and practices, quality assessment and marketing of fruit and vegetable crops. Both domestic and international marketing of fruit and vegetable products discussed. Examines the economic impact of improper handling on both the local producer and the end user.

4300 Plant Protection. Three credits. Prerequisite: ABAS 1610 or 4 hours of biology. Principles of protecting crop plants from damage by weeds, insects, diseases, and other biotic factors. Pest control by chemical, cultural, and biological methods with an emphasis on integrated pest management.

4310 Forage Crops. Three credits. Adaptation, distribution, establishment, management, culture, and utilization of forage legumes and grasses.

4330 Turf Management. Three credits. Prerequisite: ABAS 1610 or BIOL 1120/1121. Establishment and management of turf grasses for lawns, golf courses, and parks.

4340 Soil Formation and Remediation. Three credits. Prerequisite: ABAS 3340. The relation of climate, plant and animal life, geological formations, and land forms to soil genesis and remediation. Lecture/lab.

4350 Soil Survey and Land Use. Three credits. Prerequisite: ABAS 3340 or approval of instructor. Soil properties used to determine suitability for land use. Lecture/lab.

4370 Soil and Water Conservation. Three credits. Principles and practices of soil and water conservation in rural and urban environments. Lecture/lab.

4380 Interior Landscaping. Three credits. Principles and practices of designing, installing, and maintaining landscapes in malls, public buildings, and other indoor environments.

4390 Urban and Sports Turf Soils. Three credits. Prerequisites: ABAS 3340 and 4330. Describe, design, manage, and evaluate urban and sports turf soils. Lecture/lab.

4500 Sustainability in Agricultural Ecosystems. Three credits. Prerequisites: ABAS 1610 or 4 hours of biology. Theories of agroecology; focuses on sustainable agricultural practices and concepts. The impact of specific agricultural technologies and land use practices

on the productivity of agricultural ecosystems, environmental quality, and human health. Examines the environmental science and agronomy of both conventional and alternative sustainable practices including benefits and limitations.

- 4610 Arboriculture.** Three credits. Prerequisite: ABAS 1610 or BIOL 1120/1121. The culture of trees, shrubs, and vines in the landscape. Planting, transplanting, fertilizing, irrigation, pruning, problem diagnosis, and damage repair included.
- 4620 Greenhouse Management.** Three credits. Prerequisite: ABAS 1610 or BIOL 1120/1121. Analysis of soils, fertilizers, irrigation techniques, container preparation, ventilation, growth regulation, and carbon dioxide enrichment for greenhouse operation. Two-hour lecture and two-hour lab.
- 4630 Floriculture.** Three credits. Prerequisite: ABAS 1610 or BIOL 1120/1121. Propagation and other cultural practices for the production and maintenance of plants and flowers in the home. Two-hour lecture and two-hour lab.
- 4640 Landscaping.** Three credits. Application of the principles of design, the use of proportionate-sized woody landscape plants, and other practices to produce low-maintenance-cost landscapes. One-hour lecture and four-hour lab.
- 4660 Nursery Management.** Three credits. Prerequisite: ABAS 1610 or BIOL 1120/1121. Principles and practices of nursery management as a business. Nursery administration, financial management, and marketing. Cultural management of field- and container-grown nursery plants.
- 4670 Plant Propagation.** Three credits. Prerequisite: ABAS 1610 or BIOL 1120/1121. Anatomical features and physiological principles involved in propagating plants from seed and by division, cutting, budding, and grafting. Use of growth regulators and environmental factors. Two-hour lecture and two-hour lab.
- 4680 Internship in Plant and Soil Science.** Six credits. Prerequisite: Approval of instructor. Practical experience in a specific area of agronomy, horticulture, or soils. Classroom material related to practical application. NOT OPEN TO STUDENTS WHO HAVE RECEIVED CREDIT FROM ANOTHER SCHOOL INTERNSHIP.
- 4690 Japanese Landscaping.** Three credits. The elements of Japanese garden design.

Agribusiness and Agriscience (Agricultural Education)

- 2230 Introduction to Vocational Agricultural Education.** Three credits. Duties of the vocational agriculture teacher with special emphasis on the Future Farmers of America and Supervised Agricultural Experience Programs.
- 4120 Alternative Fuels.** Three credits. (Also listed under Agribusiness.) Nature, scope, and importance of alternative fuel vehicles in light, medium, and heavy applications. Topics include theory of operation and safety with an emphasis on gaseous and liquid fuels (ethanol, methanol, biodiesel, hydrogen, solar, wind, and other alternative fuels).
- 4210 Farm Power and Equipment.** Three credits. Gasoline engines with actual work experience in overhaul. Work also with transmissions, hydraulics, braking systems, and other farm equipment including use of shop manuals, operation manuals, and parts books.
- 4220 Methods of Teaching Agriscience and Agriculture Mechanics.** Three credits. Integrating science into agriculture emphasizing biology, chemistry, and physics. Emphasis on mechanical skills such as small gas engines, gas welding, and electricity.

- 4230 Adult Education in Vocational-Technical Education and Program Development.** Three credits. How to teach adults and administer adult programs. Emphasis on planning, organizing, and arranging courses for adults in agriculture.
- 4240 Workshops in Agricultural Education.** One to six credits. Prerequisite: Teaching experience or approval of instructor. Designed to provide vocational agriculture teachers with intensive training in selected areas of agriculture. Check with your academic advisor.
- 4241 Production Agriculture.** One to three credits. (also Animal Science and Plant Science elective)
- 4242 Ornamental Horticulture.** One to three credits. (also Plant Science elective)
- 4243 Agricultural Mechanics.** One to three credits.
- 4244 Farm Energy Alternatives.** One to three credits. (also Animal Science and Plant Science elective)
- 4245 Problems of New and Established Teachers.** One to three credits.

Agribusiness and Agriscience (General)

- 1000 Orientation in Agriculture.** One credit. Job opportunities in agriculture, departmental facilities, extracurricular activities at MTSU associated with specific phases of agriculture. Pass/Fail.
- 2210 Introduction to Agricultural Engineering.** Three credits. Prerequisite: MATH 1710 or 1010 or approval of instructor. Basic principles, mechanics, combustion engines, electricity, building construction, and machinery with applications of problem solving techniques.
- 3010 Agri-Media Skills.** Three credits. Applications of oral and written skills in communicating about agricultural research, shows, and sales.
- 3600 Horticulture in Our Lives.** Three credits. Emphasis on the role of horticulture in everyday living, through principles of growing plants in the home, floral design, home landscaping, and gardening.
- 4100 Microcomputer Applications in Agriculture.** Three credits. Includes use of agricultural software, agricultural communications networks, computer dairy feeding systems, and farm records.
- 4250 Leadership in Agricultural Industries.** Three credits. Prerequisite: Junior or senior standing or consent of instructor. A capstone course to enhance students' leadership and human relation skills in the workplace. Topics include leadership styles, theories, characteristics of leaders (conceptual, technical, human relations), communication styles, group dynamics, conducting successful meetings, problem solving, goal setting, attitudes, motivation, self-concept, learning styles, time management, and employability skills.
- 4700 Agriculture in Our Lives.** Three credits. National and international importance of U.S. agriculture. Emphasis on food production and marketing, land conservation, and agriculture-related recreation. Accepted as a natural science elective for education majors. NO CREDIT GIVEN TOWARD A MAJOR IN THE SCHOOL OF AGRIBUSINESS AND AGRISCIENCE.
- 4910 Problems in Agriculture.** One to six credits. Problem or problems selected from one of the major disciplines. May involve conferences with instructor, library work, field study and/or laboratory activity. Students can take from one to three credits with a maximum of three per semester.
- 4990 Seminar.** One credit. Students required to research and give an oral report on a current agricultural topic.

Anthropology [ANTH]

- 2010 Cultural Anthropology.** Three credits. **Counts toward General Education Social/Behavioral Sciences requirement.** A comparative examination of the cultural organization of human behavior in societies around the world. Practical applications and the importance of intercultural understanding stressed.
- 2105 Introduction to Latin American Studies.** Three credits. (Same as SPAN 2105, PS 2105, SOC 2105, ART 2105, GEOG 2105.) A multidisciplinary, team-taught introduction to Latin America. Covers the cultures and societies of the region: pre-history, history, geography, politics, art, languages, and literatures. Required course for all Latin American Studies minors.
- 2210 Introduction to World Prehistory.** Three credits. **Counts toward General Education Humanities/Fine Arts requirement.** Cultural change over the past four million years as interpreted through archaeology. The development of hunting and gathering through the origins of agriculture and the appearance of the world's first civilizations.
- 2230 Tennessee Archaeology.** Three credits. Archaeology of prehistoric and historic Tennessee. Based on archaeological research; presents an overview of human occupation in Tennessee with emphasis on local sites.
- 2240 Sunken Continents, Lost Tribes, and Ancient Astronauts.** Three credits. Critical examination of popular theories of prehistory including Atlantis, Bigfoot, extraterrestrial visitors, and others with a focus on the nature of the scientific method.
- 2517 Introduction to the Portuguese World.** Three credits. The diverse peoples and cultures of Portugal and its former colonies in Latin America, Africa, and Asia. History, sociocultural systems, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 2740 Magic, Witchcraft, and Religion.** Three credits. Symbolic and ritual expression in indigenous and urban societies from an anthropological perspective including interpretations of myth, religious healing, cults, taboo, witchcraft, sorcery, and religious specialists and non-specialists.
- 3010 Ethnology.** Three credits. Examines different approaches in anthropology to the study of contemporary world cultures. For upper-division anthropology majors and minors. Addresses various theoretical approaches in the study of culture, use of ethnographic methods, ethical role of the anthropologist in research, and current issues in ethnology. Readings will focus on ethnographies from around the world.
- 3040 Research Methods.** Three credits. (Same as SOC 3040.) Issues and strategies in the scientific study of social phenomena.
- 3050 Data Analysis.** Four credits. (Same as SOC 3050.) Data analysis and interpretation. Laboratory required.
- 3210 Archaeology.** Three credits. Introduces methods used to study the nature and development of prehistoric societies. Approaches to survey, excavation, analysis, and interpretation explored through lectures, case studies, and problem assignments.
- 3240 Ancient Civilizations.** Three credits. Prerequisite: 3 hours of anthropology. Comparative study of archaeological evidence on the origins, development, and collapse of the early civilizations of the world. The transformation of human societies from the first settled villages to urban states in Mesopotamia, Egypt, India, Central Asia, Mesoamerica, and Peru.
- 3310 Human Origins.** Three credits. The origin and development of human life, its primate roots, ecology, and diversity.
- 3410 Linguistic Anthropology.** Three credits. Language in its anthropological contexts with a focus on language as one element of culture, including how a language fits into the cultural system, how language is distinguished from other components of culture, how culture and language interrelate, and what techniques and methods can be used to infer nonlinguistic facts from linguistic material.
- 3509 Peoples and Cultures of China and Japan.** Three credits. Prerequisite: Junior standing; ANTH 2010 recommended. The diverse peoples and culture of China and Japan. Overview of East Asia as a region and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3510 Peoples and Cultures of Southeast Asia.** Three credits. The diverse peoples and cultures of Southeast Asia (Indonesia, Philippines, Brunei, Singapore, Malaysia, Thailand, Myanmar, East Timor, Laos, Cambodia, Vietnam). History, sociocultural system, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3511 Peoples and Cultures of Oceania.** Three credits. The diverse peoples and cultures of Oceania. History, sociocultural system, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3514 Peoples and Cultures of Africa.** Three credits. (Same as AAS 3514.) The diverse peoples and cultures of Africa. History, sociocultural system, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3515 Peoples and Cultures of Native North America.** Three credits. The diverse peoples and cultures of Native North America (often called American Indians or Native Americans). History, sociocultural system, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3516 Peoples and Cultures of Europe.** Three credits. The diverse peoples and cultures of Europe. History, sociocultural system, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3517 Peoples and Cultures of Brazil.** Three credits. The diverse peoples and cultures of Brazil. History, sociocultural systems, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3518 Peoples and Cultures of Latin America.** Three credits. The diverse peoples and cultures of Latin America. History, sociocultural systems, and contemporary issues and impacts resulting from globalization from an anthropological perspective.
- 3520 North American Prehistoric Archaeology.** Three credits. A comprehensive presentation including archaeological findings concerning the initial settlement of North America some 14,000 years ago; the origins, adaptations, and development of major North American cultural traditions through European contact and colonization; and the major theoretical contributions of North American archaeology.
- 3521 Mesoamerican Archaeology.** Three credits. Prerequisite: 3 hours anthropology. Archaeology of Mesoamerica to include the findings of archaeology of the initial settlement of Mesoamerica; the origins, adaptations, and development of major prehistoric Mesoamerican cultural traditions such as the Olmec, Maya, and Aztec; and the major theoretical contributions of Mesoamerican archaeology.

- 3610 Archaeological Methods.** Three credits. Prerequisite: ANTH 3210 or permission of instructor. Methods of identifying, excavating, recording, analyzing, reporting, and interpreting archaeological sites. Focus on technical aspects of archaeological research, including a substantial component of classroom simulations of the practical applications of these methodologies.
- 3640 Visual Anthropology.** Three credits. Prerequisites: 3 hours anthropology or permission of instructor. Photography and film as tools and products of ethnography. Researching, analyzing, and presenting behavioral and cultural ideas through visual means. Cultural and political biases presented through photography and film.
- 3650 Forensic Anthropology.** Three credits. Prerequisite: Junior standing. An intensive overview of forensic anthropology—an applied field of physical anthropology that seeks to recover, identify, and evaluate human skeletal remains within a medicolegal context.
- 3710 Topics in Anthropology.** Three or six credits. An in-depth study of a special topic which is significant in current anthropological literature.
- 3720 Environmental Anthropology.** Three credits. Prerequisite: 3 hours anthropology or geography. Comparative study of ecological systems utilized by tribal, peasant, and industrialized peoples of the world. Special attention on theoretical approaches examining the interface of the environment and culture, the evolution of modes of subsistence, and contemporary development and indigenous people.
- 3730 Medical Anthropology.** Three credits. A cross-cultural survey of health-related beliefs and behavior. Includes etiologies, treatments, patients, and practitioners as they interact in an environmental, biological, and cultural context.
- 3750 Race, Class, and Gender.** Three credits. Prerequisites: 3 hours anthropology or women's studies; ANTH 2010 recommended. An anthropological examination of the biological and cultural aspects of human identity as expressed through the concepts of race, ethnicity, gender, and sexuality. Focus on ways in which regional, ethnic, and gender identities are celebrated, contested, and regulated cross-culturally.
- 3752 Cultural Images of Gender.** Three credits. Prerequisites: ANTH 2010 or SOC 1010 or WMST 2100; or permission of instructor. Global perspectives of gender through exploration of the experiences of men and women of various backgrounds worldwide. Special attention to mediums and writing styles presented; critical examination of creation and perpetuation of cultural images.
- 3990 Field Experience and Study Abroad.** Three to twelve credits. For students participating in Study Abroad courses for the existing consortium agreements. Credits depend on the number of hours of study in the foreign country (e.g., a four-week, six-week, or semester program).
- 4120 Practicing Anthropology.** Three credits. Culture change theory and the practical dimensions of anthropology in research and planned change implementation.
- 4130 Anthropology of Globalization.** Three credits. Prerequisites: Junior standing; ANTH 2010, 3010, or GS 2010, or permission of instructor. Explores the phenomenon of globalization anthropologically including competing understanding of transnational flow of capital, goods, people, images, and ideas around the world.
- 4140 Immigrants and Globalization in the American South.** Three credits. Prerequisites: Junior standing; ANTH 2010 or 3010 or permission of instructor. ANTH 4130 recommended. Explores anthropologically the specific effects of globalizing forces in the southern United States. Relations between global and local communities explored taking into account immigration, particularly of Latinos and Asians; local industry in a time of globalization; power and confrontation between rural and urban worlds; issues of race and ethnicity; and the assimilation of foreign-born professionals into Southern social and cultural systems.
- 4300 Human Osteology.** Three credits. Prerequisites: BIOL 1030/1031 or 1110/1111; ANTH 2210 or 3210 or 3310; or permission of instructor. Lab-intensive. Explores methods used in physical anthropology to study individual skeletal remains including human skeletal anatomy and bone physiology. Emphasis on identification of fragmentary remains from archaeological sites.
- 4310 Bioarchaeology.** Three credits. Prerequisites: BIOL 1030/1031 or 1110/1111; ANTH 2210 or 3210, or 3310; or permission of instructor. ANTH 4300 recommended. Human skeletal remains interpretation from an archaeological perspective to understand past human culture through the lens of health, nutrition, and activity patterns. Emphasis on technical aspects of bioarchaeological research including a substantial component of case studies, issues, and ethics.
- 4360 Zooarchaeology.** Three credits. Prerequisites: BIOL 1030/1031 or 1110/1111; ANTH 3210; or permission of instructor. Lab-intensive. Explores methods used by zooarchaeologists to identify, quantify, and summarize nonhuman animal remains from archaeological contexts using comparative collections. Emphasis on implications for human subsistence, environmental reconstruction, and human behavior.
- 4520 Archaeology of the Southeastern United States.** Three credits. Prerequisites: ANTH 2230 or 3210 or 3520, or permission of instructor. A comprehensive presentation of the archaeology of the southeastern United States, to include historical overviews of southeastern archaeology; a consideration of geography, geomorphology, and environment; theoretical contributions of southeastern archaeology; the finds of southeastern archaeology concerning the initial settlement of the region; the origins, adaptations, and development of major prehistoric southeastern cultural traditions through historic contact and colonization.
- 4620 Environmental Archaeology.** Three credits. Prerequisite: 3 hours from the following: ANTH 2210, 3210, 3310, 3520, or 4950. The interdisciplinary reconstruction of prehistoric environments using archaeological methods with a focus on geoarchaeology, zooarchaeology, and archaeobotany. How past environments affect human adaptation and how humans impact the environment.
- 4730 Economic Anthropology.** Three credits. The ways people produce, distribute, and consume goods, how such systems are organized, how they operate, how they develop, and how they relate to other systems, especially the family, political, and ideological. Draws on case material for household economies, the transition to capitalist economies, and the world economic system.
- 4740 Law and Politics in Traditional Societies.** Three credits. A cross-cultural perspective on concepts of politics and law in non-Western societies and the application of anthropological concepts in the study of legal and political systems in the contemporary global community.
- 4750 Anthropology of Religion.** Three credits. Prerequisite: ANTH 2010 or 2740 or 3010 or permission of instructor. Cross-cultural exploration of religion, including beliefs in the supernatural, the use of ritual in secular and sacred context, and the roles of ceremonial practitioners. Focus on how people interpret and control their worldviews through religion and ritual.

- 4860 Historical Archaeology.** Three credits. (Same as HIST 4860.) Disciplines of historical archaeology, including examination of archaeological evidence, historical documentation, and interpretation of evidence.
- 4890 Seminar in Anthropological Theory.** Three credits. Prerequisites: 18 hours of anthropology, including ANTH 3010, 3210, 3310, and 3410. The major anthropological theories within their historical, cultural, and political context.
- 4910 Anthropology Undergraduate Research.** One to six credits. Field experience or reading courses through which special interests or needs of the student may be pursued under individual supervision. No more than three hours may be used in the major. Arrangements must be made with an instructor prior to registration.
- 4920 Anthropology Senior Thesis.** Three credits. Prerequisite: Permission of Anthropology Thesis Committee. Focuses on a specific research topic chosen with the consent of the thesis committee and with the potential for original discovery or creative development. Independent pursuit of research objectives outlined in a research proposal results in a written thesis, the approval of which will include an oral defense.
- 4940 Ethnographic Field School.** Three to six credits. Field experience in a cross-cultural setting. Training in ethnographic research techniques.
- 4950 Archaeological Field School.** Three to six credits. Course may be taken for three to six credits after consultation with instructor. The basic techniques of archaeology and paleoecology through participation in actual excavation and laboratory work.
- 4960 Anthropology Internship.** One to six credits. Supervised independent study in which student is placed in an organization on a contractual basis as a means of applying the principles of his/her training in preparation for eventual employment. Arrangements must be made with the intern supervisor prior to registration. No more than six hours may be used in the major.
- 1620 Drawing I.** Three credits. Develops observational drawing skills and a formal drawing vocabulary; introduces various drawing materials. **Six-hour studio course.**
- 1630 Three-Dimensional Design.** Three credits. Prerequisite: ART 1610. Emphasis on elements of design as they operate in the three-dimensional environment.
- 1640 Drawing II.** Three credits. Prerequisites: ART 1610 and 1620. A continuation of ART 1620 with specific emphasis placed on drawing processes and expression. **Six-hour studio course.**
- 1910 Art History Survey I.** Three credits. Survey of the non-Western arts of Africa, the Americas, Asia, and Oceania from ancient to modern times.
- 1920 Art History Survey II.** Three credits. Survey of the arts of the Western tradition from the Paleolithic era through the Gothic period.
- 1930 Art History Survey III.** Three credits. Prerequisite: ART 1920. Survey of the arts of the Western tradition from the late Gothic period to the present. **Six-hour studio course.**
- 2105 Introduction to Latin American Studies.** Three credits. (Same as SPAN 2105, PS 2105, SOC 2105, ANTH 2105, GEOG 2105.) A multidisciplinary, team-taught introduction to Latin America. Covers the cultures and societies of the region in terms of pre-history, history, geography, politics, art, languages, and literatures. Required course for all Latin American Studies minors.
- 2130 Silkscreen.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640 or permission of instructor. An introduction to printmaking, including photo-silkscreen using water-based inks. Handmade stencils used as well as those generated by computer and copy machine. **Six-hour studio course.**
- 2200 Introduction to Art Education.** Three credits. Examines the recent history and contemporary theories of art education, with special emphasis on the essential content of discipline-based art education (aesthetics, criticism, history, and production); introduces general curricular concerns, assessment, and advocacy issues.

Arabic [ARAB]

- 1010 Elementary Arabic I.** Three credits. Foundation course in reading, writing, speaking, and aural comprehension.
- 1020 Elementary Arabic II.** Second semester. Three credits. Prerequisite: ARAB 1010 or permission of instructor.
- 2010 Intermediate Arabic I.** Three credits. Prerequisite: ARAB 1020 or permission of instructor. An intermediate course designed to improve language skills in Arabic, including reading, writing, speaking, and aural comprehensive.
- 2020 Intermediate Arabic II.** Second semester. Three credits. Prerequisite: ARAB 2010 or permission of instructor. Continuation of ARAB 2010.

Art [ART]

- 1030 Orientation to Art.** Three credits. An introduction to art structure and styles of art; relationships between past ideas and current trends.
- 1610 Two-Dimensional Design.** Three credits. The principles and techniques of design and their application to two-dimensional art forms. **Six-hour studio course.**
- 2310 Graphic Design Technologies.** Three credits. Prerequisites: ART 1610 and 1620. Procedures involved in the production of graphic design materials by means of computer. Basics of word processing, drawing, and page layout programs for graphic design. **Six-hour studio course.**
- 2325 Typographic Design.** Three credits. Prerequisites: ART 1610, 1620, 2310, and permission of instructor. An introduction to typography including the history, usage, and anatomy of letterforms. Projects focus on creative problem-solving using type as image as well as a means of communication. Projects range from word interpretation to page layout using industry-standard applications. **Six-hour studio course.**
- 2510 Sculpture I.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640 or permission of instructor. Processes and techniques used in sculpture including modeling, welding, and wood construction. **Six-hour studio course.**
- 2620 Color Drawing.** Three credits. Prerequisites: ART 1610, 1620, and 1640. A culmination of the foundation sequence with emphasis on formal and expressive solutions to color and compositional drawing problems. **Six-hour studio course.**
- 2710 Painting I.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640 or permission of instructor. Introduction to painting techniques in particular media with emphasis on basic representational skills, awareness of formal issues, and vocabulary specific to particular media. **Six-hour studio course.**

- 2810 Throwing.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640. Basic processes and techniques of creating three-dimensional clay forms on the wheel (cylinders, bowls, and mugs). Some basic hand-building methods introduced. **Six-hour studio course.**
- 3140 Etching and Intaglio.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640 or permission of instructor. A printmaking course introducing etching, aquatint, soft-ground, drypoint, photoetching (intaglio-type). A non-toxic approach is stressed, substituting high-quality acrylic resists, vegetable oils, salts, and film for traditional toxic grounds, solvents, acids, and chemicals. **Six-hour studio course.**
- 3200 Art Education for Teachers.** Three credits. Lecture class with hands-on component designed to inform about the role of art in the life of the child; exposure to art history and appreciation; children as image makers; the importance of curiosity, observation, and imagination to the child and classroom; and methodology related to the integration of visual art into the classroom.
- 3210 Elementary Art Education Methods.** Three credits with lab. Prerequisite: ART 2200. Investigates child development theories and concerns related to children, the elementary school culture, curriculum development and implementation, and teaching and management strategies. Materials and processes appropriate to K-6 art education explored in studio lab.
- 3220 Secondary Art Education Methods.** Three credits. Prerequisite: ART 2200. Focuses on the nature of middle and high school students, the secondary school culture, curriculum development and implementation, and teaching and management strategies. Materials and processes appropriate to 7–12 art education explored in studio lab. **Six-hour studio course.**
- 3230 Art Education Practicum.** Three credits. Prerequisites: ART 2200, 3210, and 3220. Participation in the K–12 art classroom setting with class discussions and readings about the teaching experience. Advanced art curriculum development for the K–12 level. **Six-hour studio course.**
- 3240 Curriculum Design for Aesthetics and Criticism in Art Education.** Three credits. Prerequisite: ART 2200. Effective strategies for teaching aesthetics and art criticism to K–12 students through curriculum development, research-based learning, and classroom teaching opportunities.
- 3325 Word and Image.** Three credits. Prerequisites: ART 2325 and permission of instructor. Explores the relationship between word and image. Projects focus on visual language, concept, formation, and technical skills. Various design methodologies covered using industry-standard applications. Current designers and design trends introduced. **Six-hour studio course.**
- 3330 Portfolio I.** Three credits. Prerequisites: ART 2325, 3325, and portfolio review after both 2325 and 3325 (or for transfer students, permission of instructor and portfolio review). The beginning of portfolio-based problems, more advanced and complex conceptual skills, production techniques, and an introduction to the offset printing process. **Six-hour studio course.**
- 3520 Sculpture II.** Three credits. Prerequisites: ART 1620, 1630, 1640, and 2510 or permission of instructor. Introduction to the processes and techniques used in sculpture, including casting techniques; subtractive and constructive experiences with a variety of materials. **Six-hour studio course.**
- 3530 Sculpture III.** Three credits. Prerequisites: ART 2510 and 3520 or permission of instructor. Development of concepts and techniques with primary emphasis on wood sculpture. Wood construction, carving, laminating, and subordinate use of other sculpture materials. **Six-hour studio course.**
- 3550 Book Arts I.** Three credits. Prerequisites: ART 1610, 1620, and 1630 or permission of instructor. An introduction to basic processes involved with papermaking, bookbinding, and using paper as a creative medium. **Six-hour studio course.**
- 3560 Drawing III.** Three credits. Prerequisites: ART 1610, 1620, 1630, 1640, and 2620. An advanced course in drawing with an emphasis on the creation of original imagery and the development of the ability to render images objectively using a variety of methods and media. **Six-hour studio course.**
- 3610 Introduction to Computer-Assisted Art.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640 or permission of instructor. Explores the use of the computer in relation to art and design concepts in two- and three-dimensional media. **Six-hour studio course.**
- 3620 Intermediate Computer-Assisted Art.** Three credits. Prerequisites: ART 1610, 1620, 1630, 1640, and 3610. Computer-generated or assisted art work. Development of original work in art or design. **Six-hour studio course.**
- 3650 Figure Drawing.** Three credits. Prerequisite: ART 2620. Introduction to concepts. Specific concepts include gesture and expression, spatial structure and proportion, and the effects of light and drapery on the human form. **Six-hour studio course.**
- 3720 Painting II.** Three credits. Prerequisite: ART 2710. A continuation of ART 2710 with additional attention paid to individual expression and art historical perspectives. **Six-hour studio course.**
- 3730 Painting III.** Three credits. Prerequisite: ART 3720 or permission of instructor. The creative process, idea development, and project planning in painting. **Six-hour studio course.**
- 3760 The Age of Chivalry.** Three credits. Prerequisite: ART 1920 or permission of instructor. Art from the age of the Crusades and Pilgrimages and Romanesque and Gothic periods as viewed from both European and Islamic perspectives.
- 3770 Letterpress I.** Three credits. Prerequisite: ART 3550 or permission of instructor. Introduction to hand papermaking processes and letterpress printing using raised type to form text and relief printing processes to create images. **Six-hour studio course.**
- 3820 Handbuilding.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640. Studio experiences in designing and creating three-dimensional ceramic forms emphasizing techniques of hand construction. Some basic techniques introduced on the wheel. **Six-hour studio course.**
- 3830 Intermediate Clay I.** Three credits. Prerequisites: ART 2810, 3820, and permission of instructor. Studio experiences in designing, forming, and decorating functional/non-functional forms. Introduction to some basic materials processes (clay and glaze formulation, and firing techniques). **Six-hour studio course.**
- 3860 Northern Renaissance.** Three credits. Prerequisite: ART 1930 or permission of instructor. Art of Northern Europe from the late fourteenth century through the sixteenth century focusing on architecture, sculpture, and painting from England, France, Germany, and the Low Countries.
- 3870 Native American Art.** Three credits. Prerequisite: ART 1910 or permission of the instructor. Survey of the arts of indigenous cultures of North America.
- 3871 Mesoamerican Art.** Three credits. Prerequisite: ART 1910 or permission of the instructor. Survey of pre-Columbian arts of Mesoamerica from the Olmec to the Mexica.

- 3872 Andean Art.** Three credits. Prerequisite: ART 1910 or permission of the instructor. Survey of the pre-Columbian arts of Peru from the Chavin to the Inca.
- 3880 Latin American Art.** Three credits. Prerequisite: ART 1930 or permission of instructor. A survey of the art of Latin America from the period of Independence (1821) to the present, focusing on architecture, sculpture, and painting from Mexico through South America. Impact of these cultural expressions on Hispanic/Chicano/Latino arts of the United States.
- 3910 Italian Renaissance Art History.** Three credits. Prerequisite: ART 1930 or permission of instructor. Examination of the visual arts of the Italian Renaissance (c. 1300–1600 CE).
- 3920 Art History Visual Resources Practicum.** Three credits. Prerequisites: ART 1910, 1920, 1930, and 3940; Art History majors only. Practical visual resources management course for students in a professional setting. Theory, standards, techniques, and management of digital and analog image collections in academic or not-for-profit settings.
- 3930 Interactive Design I.** Three credits. Prerequisites: ART 1610, good working knowledge of digital imaging, and permission of instructor. Multimedia design, including the design, planning, and creation of web sites. *Six-hour studio course.*
- 3940 Art History Methods.** Three credits. Prerequisite: ART 1930 or permission of instructor. Considers the historical and philosophical foundations of art history as a modern discipline as well as the various interpretive methods used by art historians.
- 3960 The Art of Books.** Three credits. Prerequisite: ART 1930 or permission of instructor. Interdisciplinary investigation of the forces which have conditioned the composition, production, and consumption of the Western book from antiquity to the present. Emphasis on such transitional phases as the replacement of the roll by the codex in the fourth century and the fifteenth-century advent of printed book which replaced handwritten ones.
- 3990 Art of the United States.** Three credits. Prerequisite: ART 1930 or permission of instructor. Survey of American painting, sculpture, and architecture from the Colonial period to the Armory Show (1913).
- 4000 Workshop.** One to three credits. Subject matter and credit to be determined by the instructor. The workshop may be conducted in the area of art education or any art discipline. (A maximum of 9 credits may be applied toward a degree.) *Depending on topic, may be six-hour studio course.*
- 4100 Lithography.** Three credits. Prerequisites: ART 1610, 1620, and 2130. An intermediate course in printmaking. The making and printing of lithographic images on stones and plates, including both traditional and contemporary techniques such as photolithography, transfer lithography, and color lithography. *Six-hour studio course.*
- 4110 Advanced Book Arts.** Three credits. Prerequisite: ART 3550. Further work with papermaking, bookbinding, and the production of artist's books. *Six-hour studio course.*
- 4120 Intermediate Printmaking.** Three credits. Prerequisites: ART 2130, 3140, and 4100 or permission of instructor. Further work in one or more of the following media: silkscreen, intaglio, lithography, or relief printmaking. *Six-hour studio course.*
- 4130 Advanced Printmaking.** Three credits. Prerequisite: ART 4120. Advanced work in one of the printmaking media as described in ART 4120. *Six-hour studio course.*
- 4140 Advanced Study in Printmaking.** Three credits. Prerequisite: ART 4130. Intensive independent research in one of the areas chosen by the student and planned in consultation with the instructor. *Six-hour studio course.*
- 4280 Digital Illustration.** Three credits. Prerequisites: ART 1610, 1620, 1640, and 2310; permission of instructor required. Vector software and the conceptualization, technical skills, and professional practices of digital illustration. *Six-hour studio course.*
- 4290 Beginning Illustration.** Three credits. Prerequisites: ART 1610, 1620, 1630, and 1640; ART 3330 for graphic design majors. Introduces basic methods, materials, and business practices of illustration, with an emphasis on development of rendering skills. *Six-hour studio course.*
- 4300 Advanced Illustration.** Three credits. Prerequisite: ART 4290 or permission of the instructor. Continued exploration of methods and materials with an emphasis on development of a personal style. *Six-hour studio course.*
- 4310 Portfolio II.** Three credits. Prerequisite: ART 3330. Continued production of portfolio-based problems with increased emphasis on advanced design skills related to the specific needs of the workplace. Includes basic collateral problems, ad campaigns, corporate identity, signage, plus a self-promotional package. *Six-hour studio course.*
- 4320 Senior Project.** Three credits. Prerequisite: ART 4310 or permission of instructor. Following a portfolio review, each class member will devise a project that conceptually and visually addresses his or her design/illustration goals. *Six-hour studio course.*
- 4330 Internship.** Three credits. Prerequisites: Senior standing and permission of the internship coordinator. Advanced students gain practical experience in a professional setting as an intern. Approximately 150 work hours required for the semester.
- 4390 Interactive Design II.** Three credits. Prerequisites: ART 3930 and permission of instructor. An intermediate interactive design class with an emphasis on interface design. Focuses on design, planning, and creation of Web sites using industry-standard Web design applications. *Six-hour studio course.*
- 4400 Interactive Design III.** Three credits. Prerequisites: ART 3930 or 4390 and permission of instructor. An advanced interactive design class that emphasizes the design and implementation of visually engaging, immersive environments. Students work individually and as teams using industry-standard Web design applications to create stand-alone and Web projects. *Six-hour studio course.*
- 4510 Sculpture IV.** Three credits. Prerequisites: ART 2510 and 3520 or permission of instructor. Development of concepts and techniques with primary emphasis on metal sculpture. Gas and electric welding, fabricating, grinding, finishing, and subordinate use of other sculpture materials. *Six-hour studio course.*
- 4520 Sculpture V.** Three credits. Prerequisites: ART 2510 and 3520 or permission of instructor. Development of concepts and techniques with primary emphasis on casting activities in the foundry; covers various metal casting techniques and subordinate use of other materials. *Six-hour studio course.*
- 4530 Sculpture VI.** Three credits. Prerequisites: ART 3530, 4510, and 4520 or permission of instructor. Problems in sculpture selected by the student after approval by the instructor. *Six-hour studio course.*
- 4640 Advanced Art Problems.** One to three credits. Structure and content determined by the art faculty on the basis of individual need. The student should be prepared to do independent research and experimentation in the area selected. (A maximum of 9 credits may be applied to a degree.) *Depending on topic, may be six-hour studio course.*

- 4710 Painting IV.** Three credits. Prerequisite: ART 3730 or permission of instructor. Projects in painting; content of the course is planned by the student under supervision of the instructor. A final paper is required. **Six-hour studio course.**
- 4720 Painting V.** Three credits. Prerequisite: ART 4710 or permission of instructor. Independent studies course in painting which continues the concerns of Painting IV. A final paper is required. **Six-hour studio course.**
- 4730 Painting VI.** Three credits. Prerequisite: ART 4720 or permission of instructor. Directed individual study; a continuation of Painting IV at a more advanced level. A final paper is required. **Six-hour studio course.**
- 4770 Letterpress II: The Tulip Poplar Press.** Three credits. Prerequisite: ART 3770. An advanced course in letterpress printing with an emphasis on the creative process of collaboration and on designing for the marketplace. Students work as apprentices for the Tulip Poplar Press to design and produce limited edition publications for the marketplace. **Six-hour studio course.**
- 4810 Intermediate Clay II.** Three credits. Prerequisites: ART 3830 and permission of instructor. Directed individual studies of problems mutually agreed upon by the student and course instructor. **Six-hour studio course.**
- 4820 Advanced Clay.** Three credits. Prerequisites: ART 4810 and permission of instructor. Further work as described in Intermediate Clay II. **Six-hour studio course.**
- 4830 Advanced Study of Clay.** Three credits. Prerequisites: ART 4820 and permission of instructor. Further work as described in Intermediate Clay II. Written paper and exhibition required. **Six-hour studio course.**
- 4870 African Art.** Three credits. Prerequisite: ART 1910 or permission of instructor. Survey of visual art from the African continent and an examination of selected artists of the African diaspora. Discussion of ancient through contemporary artistic production, with focus upon nineteenth and twentieth centuries.
- 4880 African American Art.** Three credits. Prerequisite: ART 1930 or permission of instructor. An art historical survey of African American culture and visual arts, beginning with eighteenth century expressions in painting, sculpture, and the decorative arts, but focusing on the twentieth century expressions.
- 4900 Nineteenth-Century Art.** Three credits. Prerequisite: ART 1930 or permission of the instructor. Examines visual arts of the nineteenth century from Europe, the United States, Africa, or the Americas. Topics will vary according to areas of expertise of the professor.
- 4905 Survey of Women Artists: Renaissance to Modern.** Three credits. Prerequisite: ART 1930 or permission of instructor. Painting and sculpture produced by women artists from Europe and the Americas during the period from the Renaissance (1400) to the Modern era (1945).
- 4910 Women in Art.** Three credits. Prerequisite: ART 1930 or permission of instructor. An examination of the contributions of women to the art world from a feminist perspective. Specific course content varies.
- 4920 Contemporary Art.** Three credits. Prerequisite: ART 1930 or permission of instructor. Western visual art movements and issues in American painting and sculpture in the twentieth century.
- 4940 Special Studies in Art History.** Three credits. Prerequisite will vary. Content varies. When offered, particular topics addressed are indicated by the course title in the schedule book. Depending

on the nature of the material to be covered, prerequisites may be imposed by the instructor. Can be repeated for up to 9 hours.

- 4960 Independent Studies in Art History.** One to three credits. Prerequisites: ART 1910, 1920, 1930 and permission of instructor. Senior thesis and other investigations into art history under the direction of one of the art history faculty. The topic(s) of investigation must be agreed upon by both student and instructor prior to registration. Can be repeated for up to 10 hours.

Astronomy [ASTR]

- 1030 Exploring the Universe.** Three credits. A general introduction to astronomy through an overview of planets, stars, systems of stars, and the overall structure of the universe. Topics will be discussed by answering questions such as "How do you weigh stars?" and "Will the universe die?"
- 1031 Observing the Universe.** One credit. Prerequisite or corequisite: ASTR 1030. Introduction to observational astronomy through laboratory exercises and outdoor observing activities. Topics include telescopes, the analysis of starlight, and observations of stars and planets.
- 2030 Solar System Astronomy.** Three credits. Prerequisite: MATH 1710. Comprehensive study of the solar system including models of solar and planetary formation. Analysis of the chemical makeup and physical nature of the Sun, planets, moons, and comets using mathematics and the scientific method. Focus on planetary interiors, surfaces, atmospheres, solar-planetary interactions, and solar system evolution. Discussion of spacecraft missions, future solar system exploration, and possibilities of extraterrestrial life.
- 2040 Stars, Galaxies, and Cosmology.** Three credits. Prerequisite: MATH 1710. A comprehensive study of stellar, galactic, and cosmological astronomy. Analyzes the basic theories of stellar and galactic formation and evolution using mathematics and the scientific method. Includes the cataclysmic topics of supernovae, neutron stars, pulsars, and black holes as well as the nature of galaxies including the Milky Way galaxy, active galaxies and quasars, and the formation and evolution of our universe, the big bang theory, and the possibility of other life in the universe.
- 3050 Directed Study in Astronomy.** One to four credits. Prerequisite: PHYS 2021 or 2120 and approval of department chair. Individualized intensive study of a specific topic in astronomy or astrophysics not normally covered to the extent desired in the standard curriculum. Arrangements must be made with an approved faculty member prior to registration.
- 3400 Fundamentals of Astrophysics.** Three credits. Prerequisite: PHYS 2021 or 2120 and MATH 1910. Modern astronomical knowledge and techniques using classical and modern physical principles. Possible topics include star formation, black holes and neutron stars, galaxy structure and evolution, formation of planetary systems, and large-scale structure of the universe.
- 3401 Experimental Astronomy.** One credit. Prerequisite: Consent of instructor. Principles and techniques of astronomical data acquisition and reduction. Possible research topics involve photometry, spectroscopy, astronomical applications of electronic detectors, and computer modeling.
- 4800 Special Topics in Astronomy.** Three credits. Prerequisites: PHYS 3150 and approval of department chair. In-depth, organized study of a contemporary topic of interest not normally covered in the undergraduate physics and astronomy curriculum. Possible topics include planetary geology, radio astronomy, stellar atmospheres or interiors, space physics, pulsating stars, dark matter and energy, galactic evolution, and general relativity and cosmology.

- 4850 Astronomy Research.** Two credits. Prerequisite: Consent of instructor. Independent study of a selected research problem in astronomy. Includes experimental and/or theoretical investigation of an important yet unexplored problem or experimental design. Includes literature research and experimental design/problem formulation and execution resulting in oral and written presentation of results suitable for submission/presentation to a suitable journal/conference.
- 4900 Astronomy Senior Thesis.** Two credits. Prerequisites: ASTR 4850 and consent of department chair. Focuses on a specific research/experimental design problem chosen with the consent of the thesis committee and with the potential for original discovery or for creative development of a tool, technique, or instrumentation applicable to scientific research. Independent pursuit of research objectives outlined in a research proposal results in a written thesis, the approval of which will include an oral defense.

Athletic Coaching [ATHC]

- 2710 Coaching and Officiating Fall Intramurals.** Two credits. Terminology, rules, strategies, and skills for players, coaches, and officials in flag football, outdoor soccer, volleyball, dodge ball, and 3-on3 basketball. Officiating mechanics, positioning, and signals emphasized. Students will work a minimum of 20 hours officiating flag football or outdoor soccer plus one other sport or game. Practicum hours included.
- 2720 Coaching and Officiating Spring Intramurals.** Two credits. Terminology, rules, strategies, and skills for players, coaches, and officials in basketball, indoor soccer, arena football, softball, and dodge ball. Officiating mechanics, positioning, and signals emphasized. Students will work a minimum of 20 hours officiating basketball or indoor soccer plus one other sport or game. Practicum hours included.
- 3600 Coaching and Officiating Football.** Three credits. Fundamentals of football coaching and officiating. Students will teach and analyze the fundamental skills, especially offensive and defensive, as well as understand, interpret, and apply the rules of football. Practicum hours included.
- 3610 Coaching and Officiating Basketball.** Three credits. Prerequisite: PHED 1210 or permission of instructor. Fundamentals of basketball coaching and officiating. Students will teach and analyze the fundamental skills, especially offensive and defensive, as well as understand, interpret, and apply the rules of basketball. Practicum hours included.
- 3620 Coaching and Officiating Golf.** Three credits. Prerequisite: PHED 2020 or permission of instructor. The fundamental skills of golf coaching and officiating. Students will teach and analyze the fundamental skills, especially the swing, as well as understand, interpret, and apply the rules of golf. Practicum hours included.
- 3630 Coaching and Officiating Wrestling.** Three credits. Prerequisite: PHED 2000 or permission of instructor. The fundamentals of wrestling coaching and officiating. Students will teach and analyze the fundamental skills, especially offensive and defensive moves, as well as understand, interpret, and apply the rules of wrestling. Practicum hours included.
- 3640 Coaching and Umpiring Softball.** Three credits. Prerequisite: PHED 2410 or permission of instructor. The fundamental skills of softball coaching and umpiring. Students will teach and analyze the fundamental skills, especially hitting and fielding, as well as understand, interpret, and apply the rules of softball. Practicum hours included.
- 3650 Coaching and Officiating Tennis.** Three credits. Prerequisite: PHED 1040 or permission of instructor. The fundamental skills of tennis coaching and officiating. Students will teach and analyze the fundamental skills, especially the ground strokes, as well as understand, interpret, and apply the rules of tennis. Practicum hours included.
- 3660 Coaching and Officiating Volleyball.** Three credits. Prerequisite: PHED 2270 or permission of instructor. The fundamental skills of volleyball coaching and officiating. Students will teach and analyze the fundamental skills, especially offensive and defensive, as well as understand, interpret, and apply the rules of volleyball. Practicum hours included.
- 3670 Coaching and Umpiring Baseball.** Three credits. The fundamental skills of baseball coaching and umpiring. Students will teach and analyze the fundamental skills, especially hitting and fielding, as well as understand, interpret, and apply the rules of baseball. Practicum hours included.
- 3810 Directing Intramurals.** Two credits. The organization and administration of intramural programs. Actual participation in developing and supervising intramural activities.
- 3910 Athletic Coaching and Officiating.** Three credits. Pre- or corequisite: ATHC 2710 or 2720. An overview of the professions of athletic coaching and officiating. Numerous roles coaches and officials play in the athletic environment emphasized: philosophy of athletics, ethical behavior of participants, safety, teaching and communicating with all publics, successful organization and administration of competition, and evaluation of performances.
- 4000 Strength, Conditioning, and Human Performance.** Three credits. (Same as ATHT 4000.) Prerequisites: BIOL 2020/2021 or BIOL 2030/2031; PHED 4910; weight training; or by permission of instructor. Theories and principles of strength training and conditioning and techniques used to become a strength and conditioning specialist or personal fitness trainer.
- 4060 Sport Psychology.** Three credits. (Same as PSY 4060.) The application of behavioral principles, motivational research, personality factors, social/psychological findings, cognitive processes, dysfunctional behavior knowledge, and psychometric assessment procedures to the arena of sports. Introduces students to this discipline and provides knowledge to help enhance their own performances and the performances of others.
- 4180 Coaching Speed/Strength Conditioning for Sports.** Three credits. Organizing and developing speed and strength conditioning programs for sports. Setting up and supervising proper methods and techniques in running, weight lifting, and conditioning exercise for athletics today.
- 4220 Coaching and Officiating Soccer.** Three credits. Prerequisite: PHED 1220 or permission of instructor. The fundamental skills of soccer coaching and officiating. Students will teach and analyze the fundamental skills, especially offensive and defensive, as well as understand, interpret, and apply the rules of soccer. Practicum hours included.
- 4600 Intermediate Coaching and Officiating Football.** Three credits. Prerequisite: ATHC 3600. Incorporates multiple drills to refine football skills and fundamentals. Emphasizes offensive, defensive, and special team strategies as well as the application of rules, officiating mechanics, signals, and positioning for coaching and officiating interscholastic and intercollegiate competition in football. Practicum hours included.

4620 Intermediate Coaching and Officiating Basketball. Three credits. Prerequisite: ATHC 3610. Incorporates multiple drills to refine basketball skills and fundamentals. Emphasizes offensive, defensive, and special situations as well as the application of rules, officiating mechanics, signals, and positioning for coaching and officiating interscholastic and intercollegiate competition in basketball. Practicum hours included.

4640 Intermediate Coaching and Umpiring Baseball. Three credits. Prerequisite: ATHC 3670. Incorporates multiple drills to refine baseball skills and fundamentals. Emphasizes offensive, defensive, and special situations as well as the application of rules, umpiring mechanics, signals, and positioning for coaching and umpiring interscholastic and intercollegiate competition in baseball. Practicum hours included.

4650 Coaching and Officiating Cross Country/Track and Field. Three credits. The fundamental of coaching and officiating cross country and track and field. Students will teach and analyze the fundamental skills, especially distance running, sprints, relays, and field events, as well as understand, interpret, and apply the rules of cross country and track and field. Practicum hours included.

4690 Psychology of Coaching and Officiating. Three credits. Prerequisite: ATHC 3910. The applications of psychological principles to the coaching, officiating, and playing of athletics at various levels. Emphasis will be on the motivation of and communication with and between all participants in athletic competition at a variety of levels.

4800 Administration of High School and College Athletics. Three credits. Deals with administrative concerns of athletic eligibility, contest management, equipment, finances, budgets, safety, layout and maintenance of facilities, public relations, publicity, and current athletic trends.

Athletic Training [ATHT]

3000 Clinical A in Athletic Training. Three credits. Prerequisites: ATHT 3570, 3580. Psychomotor skills used in the application of protective equipment, emergency procedures, care and treatment of athletic injuries, and use of basic modalities. A minimum of 200 clinical hours under the direct supervision of an approved clinical instructor required.

3001 Clinical B in Athletic Training. Three credits. Prerequisite: ATHT 3000; corequisite: ATHT 3950. Psychomotor skills used in the evaluation and assessment of injuries to the lower extremities. A minimum of 200 clinical hours under the direct supervision of an approved clinical instructor required.

3002 Clinical C in Athletic Training. Three credits. Prerequisite: ATHT 3001; corequisite: ATHT 3960. Psychomotor skills used in the evaluation and assessment of injuries to the upper extremities and thorax. A minimum of 200 clinical hours under the supervision of an approved clinical instructor required.

3003 Clinical D in Athletic Training. Three credits. Prerequisite: ATHT 3002; corequisite: ATHT 4960. Psychomotor skills used in the rehabilitation of musculoskeletal injuries. A minimum of 200 clinical hours under the direct supervision of an approved clinical instructor required.

3570 Psychomotor Skills in Athletic Training. Three credits. Various athletic training topics with emphasis on the application of supportive and protective taping. A minimum of 60 directed clinical hours of observation and experiential learning required.

3580 Prevention and Care of Athletic Injuries. Three credits. Modern principles in the care, prevention, and management of sports injuries.

3590 Athletic Training Medical Documentation and Terminology. Two credits. Athletic training medical terminology and how to utilize appropriately for medical records and documentation, medical insurance and reimbursement, allied/medical health teams, case studies, and medical referrals. **Not a substitute class for HUM 2130.**

3950 Evaluation and Assessment of Injuries to the Lower Extremities. Three credits. Prerequisites: ATHT 2580; BIOL 2010/2011. Corequisite: ATHT 3001 or permission of instructor. Evaluation and assessment of athletic injuries to the lower extremities and lumbar spine.

3960 Evaluation and Assessment of Injuries to the Upper Extremities and Thorax. Three credits. Prerequisites: ATHT 2580, 3950; BIOL 2010/2011, 2020/2021. Corequisite: ATHT 3002 or permission of instructor. Evaluation and assessment of athletic injuries to the upper extremities and thorax.

4000 Strength, Conditioning, and Human Performance. Three credits. (Same as ATHC 4000.) Prerequisites: BIOL 2020/2021 or BIOL 2030/2031; PHED 4910; and weight training; or by permission of instructor. Theories and principles of strength training and conditioning and techniques used to become a strength and conditioning specialist or personal fitness trainer.

4080 Alternative Therapies in Athletic Training. Three credits. Examines the didactic and psychomotor concepts of various alternative and complementary therapies as they relate to the profession of athletic training.

4200 Acute Trauma and Emergency Care in Athletic Training. Three credits. Prerequisite: ATHT 3580. Competencies and proficiencies used in the identification, management, and prevention of acute traumatic conditions in sports requiring emergency care.

4430 Practicum in Athletic Training. Three credits. Prerequisites: ATHT 3003, 4960, and 4970. Athletic training internship in a nontraditional athletic training setting. A minimum of 150 clinical hours under the direct supervision of a clinical instructor required.

4500 Therapeutic Medications and Ergogenic Aids in Sports. Three credits. Principles, theories, and issues of the physiological and psychological response to pharmacological use and abuse of therapeutic medications and ergogenic aids in sports. Taught Fall semester, odd years.

4820 Organization and Administration of Athletic Training. Three credits. Provides the basic knowledge necessary to organize and manage an allied health care professional setting, specifically in athletic training. Information on current laws, professional standards, ethics, and issues of confidentiality addressed. Taught Fall semester, even years.

4920 Independent Study. One, two, or three credits. (Same as EXSC/HLTH/PHED/REC 4920.) Independent study topics based on a study plan prepared in cooperation with a faculty supervisor. Culminates in a formal paper and/or comprehensive examination. Application forms must be completed and approved prior to enrollment. A maximum of three credit hours may be applied toward degree.

4950 Pathology of Sport Illness and Consideration of Special Populations. Three credits. Pathology of special problems and general medical conditions of athletes and others involved in physical activity. Includes an athletic training field experience.

- 4960 Rehabilitation Techniques.** Three credits. Prerequisites: BIOL 2010/2011, 2020/2021; ATHT 3950, 3960. Corequisite: ATHT 3003 or permission of instructor. Methods and techniques in the selection and application of rehabilitation techniques.
- 4965 Aquatic Exercise and Therapeutic Rehabilitation Techniques.** Three credits. (Same as EXSC/REC 4965.) Examines the various uses of the aquatic environment to develop, maintain, and improve physical performance with practical development of skills and techniques and aquatic exercise programming. Combines both didactic and laboratory activities in an experiential learning environment.
- 4970 Therapeutic Modalities.** Three credits. Prerequisites: BIOL 2010/2011, 2020/2021; ATHT 3950, 3960. Principles, theories, methods, and techniques in the application of selected therapeutic modalities. Includes a laboratory experience of psychomotor skills used in the application of therapeutic modalities.
- 4990 Senior Seminar in Athletic Training.** Three credits. Prerequisites: ATHT 4960, 4970. Offers preparation for the BOC examination and discussion of current research in athletic training and sports medicine. Engages students in the process of reviewing, analyzing, discussing, and synthesizing research. Includes an athletic training field experience.

Biology [BIOL]

- 1030 Exploring Life.** Four credits. Corequisite: BIOL 1031. Designed for non-majors. Offers understanding, experiences, and skills related to common biological issues. Includes class discussions, small group activities, lectures, selected readings, and laboratory investigations. Three hours lecture and one two-hour laboratory.
- 1031 Exploring Life Lab.** Zero credits. Corequisite: BIOL 1030.
- 1110 General Biology.** Four credits. Corequisite: BIOL 1111. Primarily for Biology majors and minors and other science-oriented students. Biological principles and processes, including introduction to the nature of science, cells (structure, function, metabolism, division), genetics, evolution, viruses, bacteria, protists, and fungi. Three hours lecture and one three-hour laboratory. **While BIOL 1110 can be used to fulfill half the 8-hour General Education requirement for Natural Sciences, it is the first semester of a two-semester sequence primarily designed for science majors.**
- 1111 General Biology Lab.** Zero credits. Corequisite: BIOL 1110.
- 1120 General Biology.** Four credits. Prerequisite: BIOL 1110/1111. Corequisite: BIOL 1121. Primarily for Biology majors and minors and other science-oriented students. Survey of plants and animals emphasizing evolution, structure, function, reproduction, growth, and ecology. Three hours lecture and one three-hour laboratory.
- 1121 General Biology Lab.** Zero credits. Corequisite: BIOL 1120.
- 2000 Orientation to the Medical Lab.** Two credits. Corequisite: BIOL 2001. Open to anyone in medical and allied medical careers, but may not be taken as part of Biology major. Survey of medical lab careers, curricula, and affiliated laboratory programs; experience in medical laboratory testing procedures. One hour lecture and one two-hour laboratory.
- 2001 Orientation to the Medical Lab Field Experience Lab.** Zero credits. Corequisite: BIOL 2000.
- 2010, 2020 Human Anatomy and Physiology I and II.** Four credits each. Prerequisites: BIOL 2010/2011 - C or better in high school chemistry and biology within the last five years or consent of instructor; BIOL 2020/2021 - C or better in 2010. Strongly recommend BIOL 1030/1031 prior to BIOL 2010/2011. Corequisite: BIOL 2011 or 2021. Meets requirements for many pre-health professional programs including nursing. Structure and function of humans covered. Three hours lecture and one three-hour laboratory.
- 2011, 2021 Human Anatomy and Physiology I and II Lab.** Zero credits. Corequisite: BIOL 2010 or 2020.
- 2030 Anatomy and Physiology.** Three credits. Prerequisite: BIOL 1030/1031 or 1110/1111. Corequisite: BIOL 2031. General structure and physiological activities of human systems. Two hours lecture and one two-hour laboratory.
- 2031 Anatomy and Physiology Lab.** Zero credits. Corequisite: BIOL 2030.
- 2230 Microbiology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121 or 2010/2011, 2020/2021; background in general chemistry strongly recommended. Corequisite: BIOL 2231. Morphology, physiology, isolation, and cultivation of bacteria, fungi, and viruses. Three hours lecture and one two-hour laboratory.
- 2231 Microbiology Lab.** Zero credits. Corequisite: BIOL 2230.
- 3000 Life Science for Elementary Teachers.** Four credits. Prerequisites: 8 hours of science including BIOL 1030/1031 or equivalent. A process-oriented approach to the study of life with emphasis on execution and analysis of activities and experiments suited to the elementary school classroom. Six hours lecture and laboratory. (May not be used for Biology majors or minors.)
- 3010 Embryology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 3011. Early development of the frog, chick, pig, and human. Living material, whole mounts, and serial sections are used for studying cleavage, germ layer formation, histogenesis, and organogenesis. Three hours lecture and one three-hour laboratory.
- 3011 Embryology Lab.** Zero credits. Corequisite: BIOL 3010.
- 3020 Comparative Anatomy of the Vertebrates.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 3021. Vertebrate morphology and the development and function of systems and organs. Three hours lecture and one three-hour laboratory.
- 3021 Comparative Anatomy of the Vertebrates Lab.** Zero credits. Corequisite: BIOL 3020.
- 3030 Non-Flowering Plants.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Structure, physiology, methods of reproduction, and classification of the algae, fungi, liverworts, mosses, and ferns. Six hours lecture/laboratory.
- 3040 Entomology.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121. Morphology, classification, evolution, life histories, and economic importance of insects. Five hours of lecture and laboratory.
- 3050 Parasitology.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 3051. Life histories, host-parasite relationships, and control measures of the more common parasites of humans and domesticated animals. Two hours lecture and one three-hour laboratory.
- 3051 Parasitology Lab.** Zero credits. Corequisite: BIOL 3050.

- 3070 Biology Seminar on Environmental Problems.** Three credits. Causes, effects, and solutions of environmental problems. Three hours per week.
- 3100 History and Philosophy of Biology.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121. Historical development of biology; the philosophy, ideas, and contributions of outstanding biologists. Three hours lecture.
- 3160 Social Issues and Genetic Technology.** Three credits. Prerequisite: BIOL 1030/1031 or 1110/1111 or 1120/1121. Exploration of genetic principles related to contemporary issues. Provides students with the background needed to evaluate topics such as the release of genetically engineered plants and animals, the use of DNA fingerprinting techniques, the relationship between race and IQ, and others which impact their lives. Impact of genetics on society as well as society's influence on the science will be explored. Role of genetics in medicine and agriculture also emphasized. Three hours lecture.
- 3200 Internship in Biology.** Two to four credits. Prerequisite: Permission of department. Practical experience for students in a professional setting.
- 3210 Environmental Microbiology.** Three credits. Prerequisite: BIOL 2230/2231. Corequisite: BIOL 3211. Deals with microorganisms commonly found in air, water, and soil. Two hours lecture and one three-hour laboratory.
- 3211 Environmental Microbiology Lab.** Zero credits. Corequisite: BIOL 3210.
- 3220 Environmental Regulations and Compliance.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121. An in-depth review and application of governmentally established regulations concerning environmental quality. Emphasis on major federal acts. Three hours lecture.
- 3230 Introduction to Biological Literature.** Two credits. Prerequisites: BIOL 1110/1111, 1120/1121. Application of methods of literature research in the biological sciences and techniques of scientific presentation and writing. Two hours lecture.
- 3240 Introduction to Evolution.** Three credits. Prerequisites: BIOL 1110/1111 and 1120/1121 or 1030/1031. Scientific principles and concepts formulating the biological theory of evolution. Includes historical development of modern theory; Darwin's natural selection theory; and problems in speciation, systematics, and geographical distribution of species. Three hours lecture.
- 3250 Genetics.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 3251. An introductory course in genetics. Surveys and explores the sub-disciplines of genetics, including classical, molecular, and evolutionary genetics. Emphasis on the experiments, techniques, and theories forming the foundation of modern genetic research and its applications. Three hours lecture and one two-hour laboratory.
- 3251 Genetics Lab.** Zero credits. Corequisite: BIOL 3250.
- 3340 Pathophysiology.** Three credits. (Same as NURS 3010.) Prerequisites: BIOL 2230/2231, 2010/2011, 2020/2021. Basic mechanisms of disease processes and their role in disrupting normal physiology. Three hours lecture.
- 3350 Principles of Radiation in Medicine.** Three credits. Prerequisites: PHYS 2010/2011 and 2020/2021. Basic concepts and theories of radiation physics. Detailed analysis of the structure of matter, properties of radiation, nuclear transformations, x-ray production, and interactions of ionizing radiation emphasized. Treatment units used in external radiation therapy, measurement and quality of ionizing radiation produced, absorbed dose measurement, dose distribution, and scatter analysis presented.
- 3400 General Ecology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121; CHEM 1110/1111. Corequisite: BIOL 4241. Basic concepts of the ecosystem and community aquatic and terrestrial habitats, and population ecology; complemented by field and laboratory activities. Three hours lecture and one three-hour laboratory.
- 3401 General Ecology Lab.** Zero credits. Corequisite: BIOL 4240.
- 3500 Evolution.** Three credits. Prerequisite: BIOL 3250/3251. Evolutionary biology for majors. Topics include history of evolutionary thinking, mechanisms of evolution, basic quantitative and population genetics, life-history theory, evolution of sex, correlated responses to selection, speciation, macroevolution, molecular evolution, fossil record and geologic time scale, phylogenetic inference, and the emergence of life. Three lectures.
- 3890 Biology Instruction Internship.** One credit. Prerequisites: Successful completion of target courses and permission of instructor. A course to refine thinking, communication, and interpersonal skills through exposure to on-the-spot technical questions and a laboratory teaching experience as an assistant in a biology laboratory. Credits will not count toward a major or minor in Biology. May be repeated for up to three credits.
- 4060 Dendrology.** Three credits. Prerequisite: BIOL 1120/1121. Woody plants with emphasis on important timber trees of North America. Five hours lecture/laboratory.
- 4070 Economic Botany.** Three credits. Prerequisite: BIOL 1120/1121. Useful plants which have shaped civilization. Topics include origin of agriculture, fruits and nuts, grains and legumes, vegetables, spices and herbs, oils and waxes, medicinal plants, psychoactive plants. Three hours lecture.
- 4080 Mycology.** Four credits. Prerequisite: BIOL 1120/1121. Corequisite: BIOL 4081. Emphasizes taxonomy, morphology, and culture of fungi and their importance to humans. Three hours lecture and one three-hour laboratory.
- 4081 Mycology Lab.** Zero credits. Corequisite: BIOL 4080.
- 4110 General Physiology.** Four credits. Prerequisites: BIOL 3250/3251; CHEM 2030/2031 or 3010/3011. Corequisite: BIOL 4111. Physiological and chemical properties of life processes in animals using an organ systems approach. Emphasis on mammalian physiology. Three hours lecture and one three-hour laboratory.
- 4111 General Physiology Lab.** Zero credits. Corequisite: BIOL 4110.
- 4120 Flowering Plants.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Structure and classification of seed plants; a survey of local flora. Six hours lecture/laboratory.
- 4130 Histology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, 3250/3251; CHEM 1110/1111, 1120/1121. Corequisite: BIOL 4131. Microscopic anatomy of vertebrate cells, tissues, and organs. Three hours lecture and one three-hour laboratory.
- 4131 Histology Lab.** Zero credits. Corequisite: BIOL 4130.
- 4140 Invertebrate Zoology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 4141. Morphology, classification, evolution, life histories, and economic importance of invertebrate phyla. Three hours lecture and one three-hour laboratory.
- 4141 Invertebrate Zoology Lab.** Zero credits. Corequisite: BIOL 4140.

- 4150 Radiation Biology.** Three credits. Prerequisites: PHYS 2010/2011 and 2020/2021. Types and properties of ionizing radiation, isotopes and tracer study techniques, and the biological effects of ionizing radiations on living things.
- 4170 Endocrinology.** Three credits. Prerequisites: BIOL 3250/3251, 4110/4111 or 2020/2021; CHEM 2030/2031 or 3010/3011. Study of hormones and other chemical messengers including synthesis, secretion, transport, receptors, cellular, and physiological activity. Focus on humans and other vertebrates. Three hours lecture.
- 4180 Vertebrate Zoology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 4181. Structure, life history, and classification of fish, amphibians, and mammals. Local representatives emphasized. Three hours lecture and one three-hour laboratory.
- 4181 Vertebrate Zoology Lab.** Zero credits. Corequisite: BIOL 4180.
- 4200 Biology Senior Seminar.** Two credits. Prerequisites: BIOL 2230/2231, 3250/3251, 3400/3401, and 3500. Readings and discussions from scientific literature on a particular theme that will incorporate and integrate cellular biology and energetics; genetics and molecular biology; organismal biology of plants, animals, and microbes; evolution; and ecology. Majors are advised to take this course during the semester of graduation. See schedule for specific topics. Two hours lecture.
- 4210 Cell and Molecular Biology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, 2230/2231, 3250/3251; CHEM 2030/2031 or 3010/3011. Cellular morphology and function. Three hours lecture and one three-hour laboratory.
- 4211 Cell and Molecular Biology Lab.** Zero credits. Corequisite: BIOL 4210.
- 4220 Ichthyology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 4221. The morphology, physiology, taxonomy, and ecology of fishes. Three hours lecture and one three-hour laboratory.
- 4221 Ichthyology Lab.** Zero credits. Corequisite: BIOL 4220.
- 4250 Limnology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121; CHEM 1110/1111. Corequisite: BIOL 4251. Biological, chemical, and physical aspects of lakes and streams. Three hours lecture and one three-hour laboratory.
- 4251 Limnology Lab.** Zero credits. Corequisite: BIOL 4250.
- 4260 Nature Study.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121. Identification of local plants and animals and a consideration of the ecological principles governing them. Four hours lecture/laboratory.
- 4270 Transmitting Electron Microscopy.** Four credits. Prerequisite: Permission of department. Tissue fixation, dehydration, embedding, and thin sectioning for examination and development of micrographs using a Zeiss electron microscope. Seven hours lecture/laboratory.
- 4280 Undergraduate Research in Biology.** One to four credits. Prerequisite: Permission of department. Selection, design, and conduction of projects typically allied with an instructor's research program. May be repeated for a total of four credits.
- 4290 Scanning Electron Microscopy.** Four credits. Prerequisite: Permission of department. Preparation of biological and non-biological materials for examination and development of micrographs using an ISI electron microscope. Seven hours lecture/laboratory.
- 4300 Immunology.** Four credits. Prerequisite: BIOL 2230/2231. Corequisite: BIOL 4301. Humoral and cellular mechanisms of immunity. Three hours lecture and one three-hour laboratory.
- 4301 Immunology Lab.** Zero credits. Corequisite: BIOL 4300.
- 4320 Seminar: Advancements in Biology.** Two credits. Prerequisite: Senior standing. A broad overview of biological principles and recent research developments. Two hours lecture.
- 4330- Biome Analysis.** One to four credits. Prerequisite: Permission of department and junior or senior standing. An intensive classroom and on-site study of a specific biome. Special emphasis on data collection and analysis. Consult the department chair for specific credits and costs.
- 4331 Cedar Glade**
4332 Marine
4333 Desert
- 4350 Biometry.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, 3250/3251. Corequisite: BIOL 4351. Statistical methods utilized in biological research. Three hours lecture and one three-hour laboratory.
- 4351 Biometry Lab.** Zero credits. Corequisite: BIOL 4350.
- 4360 Energy Dispersive X-Ray Analysis.** One credit. Prerequisite: BIOL 4290. Elemental analysis of materials using an energy dispersive x-ray system with scanning electron microscopy. One three-hour laboratory.
- 4390 Ethology.** Four credits. Prerequisite: BIOL 1110/1111. Corequisite: BIOL 4391. Innate and learned animal behavior in primitive and advanced animals including behavior associated with space, reproduction, and food getting. Three hours lecture and one three-hour laboratory.
- 4391 Ethology Lab.** Zero credits. Corequisite: BIOL 4390.
- 4400 Medical Botany.** Three credits. Prerequisite: BIOL 1120/1121. Plants affecting human health. Included are poisonous and psychoactive as well as remedial plants; both ethnobotanical and modern medicinal uses treated. Three hours lecture.
- 4430 Diagnostic Microbiology.** Four credits. Prerequisite: BIOL 2230/2231. Microorganisms that cause disease in humans and other animals, their isolation and identification, mechanisms of disease causation, and methods of control. Six hours lecture/laboratory.
- 4440 General Virology.** Four credits. Prerequisites: BIOL 2230/2231; CHEM 1110/1111, 1120/1121. Viruses, with emphasis on their clinical importance and impact on biotechnology. Six hours lecture/laboratory.
- 4450 Molecular Genetics.** Four credits. Prerequisites: BIOL 2230/2231, 3250/3251; CHEM 1110/1111, 1120/1121. Basic techniques of microbial genetics and gene manipulation with emphasis on the application of molecular genetics in basic and applied research. Six hours lecture/laboratory.
- 4460 Human Genetics.** Three credits. Prerequisite: BIOL 3250/3251. Corequisite: BIOL 4461. Application of the fundamental laws of inheritance to humans. Two hours lecture and one two-hour laboratory.
- 4461 Human Genetics Lab.** Zero credits. Corequisite: BIOL 4460.

- 4500 Plant Physiology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, 3250/3251; CHEM 2030/2031 or 3010/3011. Plant growth, development, and metabolism at the cellular and whole plant levels. Three hours lecture and three hours laboratory.
- 4510 Food/Industrial Microbiology.** Four credits. Prerequisite: BIOL 2230/2231. Interaction between microorganisms and food; industrial processes of importance to humans. Six hours lecture/laboratory.
- 4520 Plant Anatomy and Development.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, and 3250/3251. Explores plant cells, tissues, and organs from seed to fruit. Covers organization of cells and tissues and the dynamic nature of these structures, and whenever appropriate, molecular mechanisms responsible for their development and nature. Six hours lecture/laboratory.
- 4540 Topics in Environmental Education.** One to four credits. Prerequisite: Junior standing or above. An intensive classroom and field study of natural science and resources in Tennessee. Special emphasis on data collection, analysis, and problem solving. Target groups are upper-division students in biology and education. Consult the department chair for specific credits and costs. THIS COURSE DOES NOT APPLY TO THE BIOLOGY MAJOR OR MINOR.
- 4550 Biotechnology.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121, 2230/2231. Instruction in both theory and application of current research methodologies in biology and molecular biology. Topics include immunochemistry, polymerase chain reaction, restriction enzyme analysis, and electrophoresis. Five hours lecture/laboratory.
- 4560 Neurobiology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 4561. Introduces comparative neurobiology. Topics include the basic structure and function of the nerve cell and organization of nervous systems of representative species of invertebrate and vertebrate animals. Two hours lecture and one three-hour laboratory.
- 4561 Neurobiology Lab.** Zero credits. Corequisite: BIOL 4560.
- 4570 Principles of Toxicology.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121; CHEM 1110/1111, 1120/1121, 3010/3011. Corequisite: BIOL 4571. Study of adverse effects of chemical agents on living organisms; current toxicological techniques used in the laboratory. Two hours lecture and one three-hour laboratory.
- 4571 Principles of Toxicology Lab.** Zero credits. Corequisite: BIOL 4570.
- 4580 Marine Biology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121; CHEM 1110/1111, 1120/1121. Corequisite: BIOL 4581. Introduction to the biological, chemical, and physical characteristics of major marine environments and their associated flora and fauna. Three hours lecture and one three-hour laboratory.
- 4581 Marine Biology Lab.** Zero credits. Corequisite: BIOL 4580.
- 4590 Principles of Environmental Toxicology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121; CHEM 1110/1111, 1120/1121, 3010/3011. Ecological effects of chemicals in the environment and techniques currently utilized to assess these effects. Lab includes current environmental assessment techniques, including biomonitoring. Six hours lecture/laboratory.
- 4700 Principles of Plant-Animal Interactions.** Three credits. Prerequisites: BIOL 1110/1111, 1120/1121. Corequisite: BIOL 4701.
- Evolutionary and ecological perspectives on how plants attract and repel organisms that influence their ability to survive and leave progeny. Topics include angiosperm evolution; the coevolution of plants with pollinators, herbivores, mycorrhizae, and N-fixing bacteria; how plant secondary metabolites facilitate or mitigate these interactions. Two hours lecture and three-hour laboratory.
- 4701 Principles of Plant-Animal Interaction Lab.** Zero credits. Corequisite: BIOL 4700.
- 4720 Animal Development.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, and 3250/3251; BIOL 4210 recommended. Corequisite: BIOL 4721. Processes and underlying molecular mechanisms by which a single fertilized egg develops into an adult organism, focusing on vertebrate development, but including insights gained from other model organisms. Three hours lecture and two hours lab.
- 4721 Animal Development Lab.** Zero credits. Corequisite: BIOL 4720.
- 4730 Microbial Physiology and Biochemistry.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, and 2230/2231; CHEM 1110/1111, 1120/1121, and 2030/2031 or 3010/3011. Survey of the physiology and biochemistry of prokaryotic and eukaryotic microorganisms. Six hours lecture/laboratory.
- 4750 Plant Biotechnology.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, 3250/3251. Processes and reasoning behind the human manipulation of plant species for agricultural and technological purposes. Topics include traditional breeding techniques, tissue culture, plant cell transformation, and general plant molecular biology techniques as well as current debate over genetically modified organisms. Six hours lecture/laboratory.
- 4760 Introduction to Bioinformatics.** Four credits. Prerequisites: BIOL 1110/1111, 1120/1121, and CSCI 1170 or consent of instructor. Application of computer science to biological questions. Specifically applies to the computational aspects of data gathering, processing, storage, analysis, and visualization methods for use in revising and testing biological hypotheses. Students should have a strong background in either computer science or biology, be willing to learn about the other field in an accelerated fashion, and be willing to work cooperatively as part of an interdisciplinary team. Four hours of lecture/problem-solving per week.

Business Administration [BUAD]

- 4000 Senior Seminar.** Three credits. Prerequisites: Senior standing; open to Management, Marketing, or Business Administration majors. (Cannot be substituted for MGMT, MKT, or BUAD courses in these majors or minors.) Designed to facilitate the transition from college to career and enhance the student's personal marketing skills in the job search. Two segments focus on management and marketing skills for the professional environment.
- 4980 Business Policy.** Three credits. Prerequisites: Must be taken after completion of the business requirements (see items 3 and 7, introductory section of the Jennings A. Jones College of Business) and in the semester in which the student graduates. Development of top management perspective with emphasis on policy and strategy formulation and evaluation through the demonstration of competence in handling multifunctional business problems. Transfer credit not allowed; must be taken in residence.

Business Communication and Entrepreneurship [BCEN]

- 1310 Keyboarding.** Three credits. Development of manipulative ability; information essential to effective use of a computer keyboard; rapid and controlled application of ability and information to communication problems involving personal correspondence and simple business materials.
- 1400 Introduction to Business.** Three credits. Survey of business economic units of our society; the problems of business such as ownership, social responsibility, physical factors, personnel, marketing, and managerial controls. Includes exploration and analysis of business careers.
- 2320 Document Production.** Three credits. (BCEN 1310 recommended.) Extension and refinement of fundamental manipulative abilities and keyboarding knowledges; development of production capacity through the completion of increasingly involved problems.
- 2330 Word Processing Concepts.** Three credits. (BCEN 2320 recommended.) Familiarization with word processing equipment, implications, and applications in business operations.
- 2340 Microcomputer Word Processing Applications.** Three credits. Prerequisite: BCEN 2330. Advanced word processing and computer applications, including formatting and preparation of lengthy documents such as company newsletters and databases.
- 2350 Advanced Document Formatting.** Three credits. Prerequisite: A grade of C or higher in BCEN 2320. Development of keyboarding/typewriting skills and decision making as demonstrated in the production of quantities of material in usable form.
- 2600 Business Applications of Desktop Publishing.** Three credits. Prerequisites: Keyboarding skills and knowledge of computer. Topics include terminology, technology, design, use of graphics, and applications for desktop publishing.
- 2900 Entrepreneurship.** Three credits. (BCEN 1400 recommended.) The mechanics and operational skills needed for organizing and operating an enterprise.
- 3010 Office Management.** Three credits. Prerequisite: Junior standing. Office organization and functions; layout and equipment; selection, training, and supervision of personnel; office automation; planning, organizing, and controlling office services; cost reduction; work simplification.
- 3510 Business Communication.** Three credits. Prerequisite: Junior standing. (Keyboarding skills helpful.) A review of the theory and processes in oral and written business communication. Emphasis on the extensive functions of written and electronic communications.
- 4200 Problems in BE/ME/OM.** One, two, or three credits. Prerequisites: Junior standing and consent of department chair. Individual research, reading analysis, or projects in contemporary problems and issues in a concentrated area of study under the direction of a faculty member. This course may be taken only twice.
- 4240 Materials and Methods in Basic Business.** Three credits. Prerequisite: Junior standing. Analysis of objectives, materials, research, and appropriate instructional strategies for developing teaching strategies and delivery systems in basic business courses such as introduction to business, economics, business communication systems, American business/legal systems, business management, and marketing.
- 4250 Innovations and Problems in Administrative Business Services and Technology.** Three credits. Prerequisite: Junior standing. (BCEN 2330 recommended.) Instructional strategies in office technology including objectives, testing, audio-visuals, course content, basic programming, and standards.
- 4340 Integrated Administrative Technology.** Three credits. Prerequisites: BCEN 2330 and 2340; junior standing. Development of necessary skills for administrators of word processing centers. Word processing feasibility, development, and implementation for business using a total information processing concept. Students have the opportunity to develop a thorough knowledge and refine skills using a variety of software applications.
- 4350 Records Management.** Three credits. Prerequisite: Junior standing. Equipment and systems used for information storage, transmission, and retrieval. Filing, microfilming, tape processing and storage system design, form usage, and other information management functions in the office included.
- 4410 Managerial Media Presentations.** Three credits. Prerequisite: Junior standing. (BCEN 2330 recommended.) Skills needed to make business presentations. Emphasis on the communication process, audience analysis, planning, presentation design, delivery, and appropriate hardware and software.
- 4450 Training Strategies for Business Systems and Technology.** Three credits. Prerequisite: Junior standing. (BCEN 4410 recommended.) Corporate learning specialist activities such as design, development, delivery, and evaluation of learning programs for a business environment. Focuses on adult learning theories with emphasis on professional learning activities related to innovative corporate educational programs.
- 4510 Business Report Writing.** Three credits. Prerequisite: Junior standing. (BCEN 3510 recommended.) Nature, general function, and present need of reports in industry. Recognizing, organizing, and investigating problems preparatory to writing reports and construction and writing of distinctive business and technical reports.
- 4520 Instructional Strategies in Marketing Education.** Three credits. Prerequisite: Junior standing. Techniques of teaching with emphasis on problem-solving and demonstration procedures. Emphasizing teaching-learning evaluation.
- 4600 Organization and Administration of ME Programs.** Three credits. Prerequisite: Junior standing. Organizing marketing education programs at secondary and postsecondary levels; emphasizes youth organizations, techniques of coordination, and administrative procedures.
- 4620 Business Plan Development.** Three credits. Prerequisites: BCEN 2900; MGMT 3650; junior standing. Development of a comprehensive business plan detailing all facets of a proposed venture with an emphasis on using the plan for loan acquisition and venture implementation.
- 4640 Issues and Trends in Office Management.** Three credits. Prerequisite: Junior standing. (BCEN 3010 recommended.) Significant research of emerging problems in office management: group dynamics, workplace issues, ethics and diversity information processing, and problem solving.
- 4660 Organizational Communication.** Three credits. Prerequisite: Junior standing. (BCEN 3510 recommended.) Research and analysis of case studies of significant research; case studies in business communication; communication policies, principles, and procedures from the executive's viewpoint.

- 4670 International Business Communication.** Three credits. Prerequisite: Junior standing. Provides students with a theoretical and practical framework for understanding and conducting effective international business communication. Emphasis on the analysis and development of international business communication processes.
- 4680 Diversity in the Workplace.** Three credits. Prerequisite: Junior standing. Emphasis on developing skills essential for working effectively with a diverse work force in global and domestic settings, incorporating the value of diversity into organizations, and building multicultural work teams.
- 4710 History and Foundations of BE and ME.** Three credits. Prerequisite: Junior standing. Developments, aims, principles, and present status of business education; organization and evaluation of the business education curriculum; administration and supervision of business education.
- 4810 Internship Program.** Three credits. Prerequisite: Junior standing. A supervised program of related work experience. Provides experiential opportunities for the application of the theoretical concepts learned.
- 4900 Dimensions in Professional Development.** Three credits. Prerequisite: Junior standing. Emphasis on job acquisition process, time management, effective listening skills, oral and nonverbal communication competencies, dictation management, and assumption of professional responsibility for participative management activities.

Business Law [BLAW]

- 3400 Legal Environment of Business.** Three credits. Prerequisite: Junior standing. Legal rights and potential liabilities of business persons. Presentation of the dynamic nature of law in responding to the changing social, ethical, political, regulatory, and international environment. Includes the development and nature of the legal system; business crimes; the law of torts and product liability; constitutional limitations on regulatory powers; legislative, judicial, and administrative control of business activity through the laws of business organizations, securities regulations, antitrust laws, employment laws, labor and safety laws, and consumer protection.
- 3430 Commercial Law.** Three credits. Prerequisite: Junior standing. Legal rights and potential liabilities of business persons. Includes basic law of contracts; UCC; sales; commercial paper; secured transactions and credit; bankruptcy; personal property and bailments; real property; and wills, trusts, and estates.
- 3460 Insurance Law.** Three credits. Prerequisite: Junior standing. Risks covered by the insurance contract, their selection and control; making, constructing, and enforcing the contract; negotiation and settlement of claims; misconduct of agents. Government regulation of the insurance industry. Emphasis on current principles, policies, procedures, and practices in insurance.
- 4420 Estate Administration.** Three credits. Prerequisite: Junior standing. Legal principles applicable to accumulation, conservation, and distribution of estates. Includes gifts, trusts, insurance, powers of attorney, intestate succession, wills, the probate process, wealth transfer taxation, and health care directives.
- 4450 Unfair Trade Practices and Consumer Protection.** Three credits. Prerequisite: Junior standing. Examines and evaluates the law and ethics of unfair and deceptive trade practices, consumer protection, and intellectual property, including antitrust law, misleading advertising, and other marketing practices.
- 4470 Real Estate Law.** Three credits. (Same as FIN 4470.) Prerequisite: Junior standing. Legal rights and limitations of ownership of property, estates, titles, methods of transferring titles, abstract of titles, mortgages, leases, easements, restrictions on the use of property, real estate development and planning, application of contract law to real property, and the administration of wills.
- 4490 Industrial Relations Legislation.** Three credits. (Same as MGMT 4490 and ECON 4490.) Prerequisite: Junior standing. Economic background and effects of government regulation of labor relations; emphasis on a detailed examination of the National Labor Relations Act as amended or expanded by the Labor Management Relations Act, the Labor Management Reporting and Disclosures Act, and Title 7 of the Civil Rights Act.
- 4500 Employment Discrimination Law.** Three credits. (Same as MGMT 4500.) Prerequisite: Junior standing. A detailed examination of the legal rights and responsibilities of employers and employees with respect to fair employment practices; emphasis on significant statutes, administrative regulations, and judicial decisions forming the body of antidiscrimination law.
- 4990 Independent Study.** One to three credits. Prerequisites: Senior standing and approval of department chair. Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of an approved faculty member.

Chemistry [CHEM]

- 1010 Introductory General Chemistry I.** Four credits. Corequisite: CHEM 1011. For students with no prior courses in chemistry; to be taken before CHEM 1110/1111. Fundamental concepts of chemistry: measurements, matter, chemical bonds, chemical reactions, nuclear chemistry, states of matter, solutions, and electrolytes. Three hours of lecture and one three-hour laboratory. Will not count toward a major or minor in Chemistry.
- 1011 Introductory General Chemistry I Lab.** Zero credits. Corequisite: CHEM 1010.
- 1020 Introductory General Chemistry II.** Four credits. Prerequisite: CHEM 1010/1011. Corequisite: CHEM 1021. Topics include hydrocarbons, organic functional groups, isomerism, carbohydrates, lipids, nucleic acids and proteins, enzymes, and metabolism. Three hours of lecture and one three-hour laboratory. Will not count toward a major or minor in Chemistry.
- 1021 Introductory General Chemistry II Lab.** Zero credits. Corequisite: CHEM 1020.
- 1030 Chemistry for Consumers.** Four credits. Corequisite: CHEM 1031. Language, development, structure, and role of chemistry as it relates to the knowledge and activities of the educated person. Examples will be taken from medicine and human health, environmental pollution, energy and its costs, etc. Understanding of the relationship between chemistry and society will be enhanced using special subtopics: lectures, demonstrations, and inquiry-based laboratory work drawing from the expertise of the individual instructor. For nonscience majors. Three hours lecture and one two-hour laboratory. **(Does not count toward any major or minor.)**
- 1031 Chemistry for Consumers Lab.** Zero credits. Corequisite: CHEM 1030.
- 1110 General Chemistry I.** Four credits. Prerequisites: High school chemistry; CHEM 1010 or equivalent. Corequisite: CHEM 1111.

Fundamental concepts of atomic structure, molecular structure and bonding, chemical reactions, stoichiometric relationships, periodic properties of the elements, thermochemistry, and properties of gases. Three hours of lecture and one three-hour laboratory.

1111 General Chemistry I Lab. Zero credits. Corequisite: CHEM 1110.

1120 General Chemistry II. Four credits. Prerequisite: CHEM 1110/1111. Corequisite: CHEM 1121. Chemical equilibrium, solid and liquid states of matter, chemistry of acids and bases, principles of chemical kinetics, precipitation reactions, elementary thermodynamics, electrochemistry, and nuclear chemistry. Three hours of lecture and one three-hour laboratory.

1121 General Chemistry II Lab. Zero credits. Corequisite: CHEM 1120.

1121 General Chemistry II Lab. Zero credits. Corequisite: CHEM 1120.

1130 Contemporary Issues in Science. Zero credits. (Same as PHYS 1130.) Corequisite: CHEM 1131. Lecture emphasizing the application of basic concepts in science to topics of contemporary interest to the general citizenry. Covers basic science related to selected topics. Specific topics will vary. For nonscience majors. Does not count toward any major or minor. **Two one-hour lectures per week.**

1131 Activities for Contemporary Issues in Science. Four credits. (Same as PHYS 1131.) Corequisite: CHEM 1130. Laboratory and activity emphasizing the application of basic concepts in science to topics of contemporary interest to the general citizenry. Includes laboratory activities, group-oriented problem-solving using computers and class discussion of selected contemporary issues in science. Two two-hour laboratory sessions. For nonscience majors. Does not count toward any major or minor.

2030 Elements of Organic Chemistry. Four credits. Prerequisite: CHEM 1020/1021 or 1120/1121. Corequisite: CHEM 2031. Aspects of organic chemistry fundamental to an understanding of reactions in living organisms. Three hours lecture and one three-hour laboratory.

2031 Elements of Organic Chemistry Lab. Zero credits. Corequisite: CHEM 2030.

2230 Quantitative Analysis. Five credits. Prerequisites: CHEM 1120/1121. Corequisite: CHEM 2231. Gravimetric and volumetric determinations, an introduction to optical and electrical methods of analysis, and the stoichiometry of analytical chemistry. Three hours lecture and two three-hour laboratories.

2231 Quantitative Analysis Lab. Zero credits. Corequisite: CHEM 2230.

2880 Undergraduate Research I. One to four credits. Prerequisite: Permission of the instructor. Student research allied with the instructor's research or designed specifically for the particular student. Minimum of three clock-hours work per week required for each credit hour. Up to four hours may count in the General Science major, but does not count for a major or minor in Chemistry. May be repeated for a total of four credits.

2930, 2940 Cooperative Education. Three credits. Provides students with opportunities for on-the-job training in conjunction with on-campus academic experiences. Department chair should be consulted. Pass/Fail.

3010 Organic Chemistry I. Four credits. Prerequisite: CHEM 1120/1121 or equivalent. Corequisite: CHEM 3011. Types of carbon compounds, their nomenclature, reactions, and physical properties. Three hours lecture and one three-hour laboratory.

3011 Organic Chemistry I Lab. Zero credits. Corequisite: CHEM 3010.

3020 Organic Chemistry II. Four credits. Prerequisite: CHEM 3010. Corequisite: CHEM 3021. A continuation of CHEM 3010. Three hours lecture and one three-hour laboratory.

3021 Organic Chemistry II Lab. Zero credits. Corequisite: CHEM 3020.

3530 Principles of Biochemistry. Four credits. Prerequisite: CHEM 2030/2031 or 3020/3021. Corequisite: CHEM 3531. Structure, properties, and functions of carbohydrates, lipids, proteins, and nucleic acids and their reactions in living organisms. Three-hour lecture.

3531 Principles of Biochemistry Lab. Zero credits. Corequisite: CHEM 3530. Lab to accompany CHEM 3530. One three-hour laboratory per week.

3880 Undergraduate Research II. One to four credits. Prerequisites: CHEM 2230 recommended and permission of the instructor. Student research allied with the instructor's research or designed specifically for the particular student. Minimum of three clock-hours work per week required for each credit hour. Summary report or some other form of presentation required. A total of no more than four hours of research credits may be counted toward a major in chemistry. May be repeated for a total of four credits.

3890 Chemistry Instruction Internship. One to three credits. Prerequisites: Successful completion of target courses and permission of instructor. A course to refine thinking, communication, and interpersonal skills through exposure to on-the-spot technical questions and a laboratory teaching experience as an assistant in an introductory chemistry laboratory. Course credits will count toward a major in General Science but will not count toward a major in Chemistry. May be repeated for a total of three credits.

3970, 3980 Cooperative Education. Three credits. Provides students with opportunities for on-the-job training in conjunction with on-campus academic experiences. Department chair should be consulted. Pass/Fail.

4000 Medicinal Chemistry. Three credits. Prerequisites: CHEM 3010/3011 and 3020/3021 or CHEM 2030/2031 with permission of instructor. Drug design and development including structural changes involved in making drug analogs. Drug interaction with macromolecular targets including receptors, enzymes, and DNA. Various classes of drugs and their mechanisms for the treatment of specific therapeutic areas.

4100 Organic Spectroscopy. Three credits. Prerequisite: CHEM 3020/3021. Theory of and practice in the interpretation of mass, infrared, Raman, ultraviolet-visible, and nuclear magnetic resonance spectra. Three hours lecture.

4230 Instrumental Analysis. Four credits. Prerequisite: CHEM 2230/2231. Corequisite: CHEM 4231. Potentiometric titration, polarographic, coulometric, gas chromatographic, ultraviolet, visible and infrared absorption, and atomic absorption techniques of analysis. Requirements and limitations of each technique for obtaining quantitative measurements; applications to various chemical systems from both theoretical and experimental standpoints. Three hours lecture and one three-hour laboratory.

4231 Instrumental Analysis Lab. Zero credits. Corequisite: CHEM 4230.

4330 Physical Chemistry Fundamentals I. Four credits. Prerequisites: PHYS 2020/2021; CHEM 2230/2231; MATH 1910. Corequisite:

CHEM 4331. Basic study of physical chemistry including modern theories of atomic and molecular structure, chemical thermodynamics, electrochemistry, chemical kinetics, and related theoretical topics. Three hours lecture and one three-hour laboratory.

4331 Physical Chemistry Fundamentals I Lab. Zero credits. Corequisite: CHEM 4330.

4340 Physical Chemistry Fundamentals II. Four credits. Prerequisite: CHEM 4330/4331. A continuation of CHEM 4330/4331. Corequisite: CHEM 4341. Three hours lecture and one three-hour laboratory.

4341 Physical Chemistry Fundamentals II Lab. Zero credits. Corequisite: CHEM 4340.

4350 Physical Chemistry I. Four credits. Prerequisites: CHEM 2230/2231; MATH 1920; PHYS 2020/2021 or 2120/2121. Corequisite: CHEM 4351. Quantitative principles of chemistry involving extensive use of calculus. Thermodynamics, phase changes, chemical equilibria, electrochemistry, reaction kinetics, quantum chemistry, molecule structure, and statistical mechanics. Three hours lecture and one three-hour laboratory.

4351 Physical Chemistry I Lab. Zero credits. Corequisite: CHEM 4350.

4360 Physical Chemistry II. Four credits. Prerequisite: CHEM 4350/4351. Corequisite: CHEM 4361. A continuation of CHEM 4350/4351. Three hours lecture and one three-hour laboratory.

4361 Physical Chemistry II Lab. Zero credits. Corequisite: CHEM 4360.

4400 Inorganic Chemistry. Three credits. Prerequisites: CHEM 1120 or equivalent; CHEM 2030 or 3010 recommended. The basic concepts and theories of inorganic chemistry and how these are used to predict and understand the physical and chemical properties of compounds of the elements other than carbon. Inorganic compounds in the air, water, earth, and in the laboratory and in biochemistry, geochemistry, and industrial materials and processes.

4410 Advanced Inorganic Chemistry. Three credits. Prerequisites: CHEM 3020 and 4400; prerequisite or corequisite: CHEM 4360. Atomic theory for chemical periodicity; symmetry and group theory; molecular orbital theory; coordination, organometallic, and bioinorganic chemistry of the transition metals.

4430 Advanced Synthetic Laboratory Techniques. Two credits. Prerequisite: CHEM 3020/3021. Corequisite: CHEM 4431. Techniques for synthesis and purification of organic, organometallic, and inorganic compounds. Practice in the measurement of NMR and IR spectra. Skills in library use for research. Four hours laboratory and one-hour lecture.

4431 Advanced Synthetic Laboratory Techniques Lab. Zero credits. Corequisite: CHEM 4430.

4500 Biochemistry I. Three credits. Prerequisite/corequisite: CHEM 3020/3021; not open to those who have had CHEM 3530/3531. Chemical properties of biological molecules such as amino acids, proteins, enzymes, and carbohydrates. Chemical basis of enzyme catalysis and reactions of carbohydrate metabolism. Three hours lecture per week.

4510 Biochemistry II. Three credits. Prerequisite: CHEM 4500. Structure and metabolism of lipids, amino acids, nucleotides, and nucleic acids at the molecular level. Emphasis on chemistry of metabolic reactions. Three hours lecture per week.

4530 Biochemical Techniques. Two credits. Prerequisite/corequisite: CHEM 4500 or consent of instructor. Laboratory in biochemical

techniques with emphasis on protein purification, enzyme kinetics, carbohydrate and lipid analysis, and manipulation of DNA. Six hours of laboratory per week.

4550 Bioanalytical Chemistry. Four credits. Prerequisite: CHEM 2030/2031 or 3020/3021; corequisite: CHEM 4551. Survey of basic quantitative, qualitative, and purifying methods with specific emphasis on molecules of interest to biochemistry. **Three hours lecture and one three-hour laboratory per week.**

4551 Bioanalytical Chemistry Laboratory. Zero credits. Corequisite: CHEM 4550. Laboratory to accompany CHEM 4550. One three-hour laboratory per week.

4580 Medical Technology Clinical Practicum. Six credits. Intensive classroom and laboratory studies covering principles and techniques in the areas of clinical chemistry, microbiology, immunohematology, bloodbanking, and related areas. Pass/Fail.

4600 Introduction to Environmental Chemistry. Three credits. Prerequisites: CHEM 1120/1121; CHEM 2030/2031 or 3010/3011; CHEM 2230/2231 strongly recommended. Quality of environment and of chemical changes in the environment through contaminations or modification of the air, water, and soil as they are affected by agricultural, industrial, and social activities. Three hours lecture.

4610 Environmental Chemistry. Three credits. Prerequisites: CHEM 2230/2231 and 3020/3021. Fundamental chemical principles applied to the fate and behavior of organic and inorganic contaminants in the soil-water environment. An overview of the soil-water chemistry will be presented, followed by contaminant reactions, including adsorption.

4630 Detection of Chemical Pollutants. Four credits. Prerequisites: CHEM 2230/2231 and one semester of organic chemistry or consent of instructor. Corequisite: CHEM 4631. Theory and practice of analytical chemistry methods used in pollution measurement. Three hours lecture and one three-hour laboratory.

4631 Detection of Chemical Pollutants Lab. Zero credits. Corequisite: CHEM 4630.

4700 Polymers, an Introduction. Three credits. Prerequisite: CHEM 3020/3021; physical chemistry strongly recommended. Chemistry of polymers; their structure, properties, and applications. Three hours lecture.

4730 Advanced Physical Chemistry. Four credits. Prerequisite: CHEM 4360/4361 or permission of instructor. Corequisite: CHEM 4731. Modern chemical concepts as applied to the areas of thermodynamics, electrochemistry, and chemical kinetics. Three hours lecture and one three-hour calculation laboratory.

4731 Advanced Physical Chemistry Lab. Zero credits. Corequisite: CHEM 4730.

4780 Polymer and Materials Chemistry Laboratory. One credit. Prerequisite: Organic chemistry; physical chemistry strongly recommended. Laboratory introduction to synthesis, kinetics, characterization, engineering, and applications of polymers and other modern materials. To be taken concurrently with CHEM 4700.

4800 Technical Writing for Chemists. One credit. Prerequisite: Completion of undergraduate English requirements. Emphasis on improving communication skills using writing exercises. Students will develop writing skills necessary to transmit technical information effectively, construct persuasive proposals and resumes, and produce clearly written reports of laboratory results.

4880 Research. Four credits. Prerequisites: 24 hours of ACS-approved chemistry courses. Student research allied with the instructor's research or designed specifically for the particular student. Minimum of twelve (12) hours a week. Student must write a formal report which is approved by the instructor to receive credit for this course.

Chemistry (Chemical Instrumentation Techniques)

4190 Mass Spectrometry. One credit. Prerequisite: CHEM 2230/2231 or consent of instructor. Mass spectrographic analysis emphasizing the use of the instrument in obtaining mass spectral data. Technique of obtaining spectra using gas chromatographic effluents as well as normal sampling procedures. Routine maintenance and an introduction to the interpretation of simple spectra.

4380 Nuclear Magnetic Resonance Experimental Methods. One credit. Prerequisite: CHEM 3020/3021 or 2030/2031. NMR measurements, operation of the spectrometer, and evaluation of the quality of spectra produced.

Child Development and Family Studies [CDFS]

2350 Human Development I. Three credits. Child development theories. Physical, cognitive, psychosocial development of the child, conception to three years of age. Diversity issues affecting development addressed. One hour observation per week required.

3300 Caring Across Generations. Four credits. Prerequisite: Permission of instructor. A service learning course in which students are trained as certified nurses' assistants (CNAs) including basic care skills as well as interaction with the elderly and their families. Designed to help students assess their level of interest in pursuing careers in working with children and/or the elderly in a medical setting.

3310 Human Development II. Three credits. Prerequisite: CDFS 2350 or permission of instructor. Physical, cognitive, psychosocial development of the child, from three years of age through middle childhood. Diversity issues affecting development addressed. One hour observation per week required.

3320 Family Relations. Three credits. Family systems, giving consideration to interpersonal relationships. The structure, function, and development of families in a changing society and in relation to other social institutions.

3330 Dynamics of Interpersonal Relationships. Three credits. Skills and knowledge essential to the development and maintenance of interpersonal and work relationships analyzed. Topics focus on self-awareness, communication in various types of relationships, and managing feelings and conflict.

3340 Life Span Human Development. Three credits. Emotional, social, physical, and intellectual growth and development of the individual over the life span with a family-oriented emphasis. **Not available to Early Childhood Education and/or Family and Consumer Studies: Child Development and Family Studies majors.**

3390 Child Development and Family Studies Professional Seminar. Three credits. Prerequisites: Junior standing in the CDFS program and approval of the instructor. A prerequisite to HSC 4101 Internship in CDFS. Professional issues of ethics, networking, social

change and public policy relating to children and families to be covered in 50-hour seminar format. Also, a site-approved, 100-hour field placement to be completed. Offered fall only.

4110 Directed Teaching, Grades K-3. Twelve credits. Prerequisites: Successful completion of professional education requirements of FOED 1110, 2110; ELED 3050, 3150; CDFS 4375; SPED 3010; major requirements in Human Sciences; senior or graduate standing; minimum grade point average of 2.5 overall; admission to teacher education; passing score on the NTE-PRAXIS I-PPST. Full-time semester of supervised teaching experience in two placements in the public schools. Pass/Fail.

4140 Violence in the Family. Three credits. (Same as SOC 4140.) The causes, dynamics, and consequences of violence in the family. Includes the discussion of violence toward children, spouses, dating partners, siblings, and elders. Emphasizes the social conditions which lead to these types of violence.

4300 Preschool Practicum. Three credits. Prerequisites: CDFS 2350, 3310, 4370; admission to teacher education program. Corequisite: CDFS 4301. Advanced information and skills working with three- and four-year olds. Lab interaction with children; planning and implementation of curriculum. Three hours laboratory plus two-hour seminar per week. May not be taken concurrently with CDFS 4380.

4301 Preschool Practicum Lab. Zero credits. Corequisite: CDFS 4300.

4310 Human Development III. Three credits. In-depth study of physical, intellectual, social, and emotional factors influencing development during adolescence and the reciprocal influences between adolescent development and the family system. Emphasis on the ecological perspective to include the relation between adolescent development, families, and society. Offered fall only.

4320 Evaluation Strategies and Multicultural Education. Three credits. Prerequisites: CDFS 2350 and 3310 or permission of instructor. A comprehensive examination of assessment and cultural, linguistic, and developmental diversity in young children for the purpose of meeting individual and group needs. Observation and interaction with young children with diverse needs and their families included.

4330 Primary Practicum. Three credits. Prerequisites: CDFS 4300; ELED 3050; admission to teacher education program. Corequisite: CDFS 4331. Advanced knowledge and skills in working with kindergarten and primary children. Practicum students will implement developmentally appropriate curriculum in kindergarten and one other primary grade. Three hours laboratory and two hours seminar per week.

4331 Primary Practicum Lab. Zero credits. Corequisite: CDFS 4300.

4340 The Contemporary Family. Three credits. Prerequisite: CDFS 3320 or permission of instructor. An ecological approach to the study of contemporary issues, problems, questions, and life styles as they relate to families and individuals. Offered fall only.

4350 Parenting. Three credits. Knowledge of parenting, parent/child interaction, and home/school/community relationships. Theoretical and applied perspectives.

4360 Day Care Perspectives. Three credits. Prerequisite: CDFS 2350 and 3310. Examination of diverse day care settings and their influence on human development. Emphasis on the organization/administration of day care programs. Participation in day care center experiences required. One hour observation per week required.

- 4370 Effective Instruction (Birth–5).** Three credits. Prerequisites: CDFS 2350 and 3310. Must be taken concurrently with CDFS 4320 (Early Childhood Education majors only). Knowledge and skills necessary for implementing developmentally appropriate practices in programs serving children birth to age five.
- 4375 Literacy in Early Childhood.** Four credits. Prerequisites: CDFS 4320, 4370; SPED 3010; admission to teacher education program. Study of emergent literacy and literacy concepts, birth through grade three. Includes methods of teaching and assessing literacy in a diverse environment. Use of children's media and literature addressed. Three hours lecture plus two-hour morning experiential field placement weekly.
- 4380 Infant/Toddler Practicum.** Three credits. Prerequisites: CDFS 2350, 3310, 4370; admission to teacher education program. Corequisite: CDFS 4381. Advanced knowledge and skills for working with infants and toddlers (birth–3). Lab participation involving interactions with children as well as planning and implementing curriculum required. A three-hour laboratory and a two-hour seminar per week. May not be taken concurrently with CDFS 4300.
- 4381 Infant/Toddler Practicum Lab.** Zero credits. Corequisite: CDFS 4380.
- 4390 Families in Later Life.** Three credits. Prerequisites: Human Science majors - CDFS 3320; Sociology majors - SOC 2600 or permission of instructor. Examination of families in later life from an ecological approach with emphasis on family forms and relationships. Offered spring only.
- 4391 Aging Health and Development.** Three credits. Prerequisite: CDFS 4390 or SOC 2600 or permission of the instructor. A service learning opportunity that provides students with understanding of the concepts and application of aging, families in later life, assessment, and gerontological program planning and implementation. May be repeated with permission of instructor.
- 4710 Family-Centered Community Building I.** Three credits. An online survey course on family-centered community building (FCCB). Introduces advanced undergraduate and graduate students as well as community practitioners to a range of topics, issues, and frameworks to help build stronger, more cohesive, and family-centered communities. Offered fall only.
- 4720 Family-Centered Community Building II.** Three credits. A service-learning course based on the application of family-centered community building. Introduces undergraduate and graduate students as well as community practitioners to a range of issues and activities intended to help build stronger, more cohesive, and family-centered communities. Offered spring only.
- 4790 Family Life Program Development and Evaluation.** Three credits. Prerequisites: CDFS 2350, 3310, 3320, 3390, 4140, 4310, 4340, 4350, and 4390 or 4391. Addresses concepts of family life education as they apply to the development, implementation, and evaluation of programs. Incorporates developmentally appropriate criteria for individuals and families over the life span. Offered spring only.

Chinese [CHIN]

- 1010 Elementary Chinese I.** Three credits. Foundation course in reading, writing, speaking, and aural comprehension.
- 1020 Elementary Chinese II.** Second semester. Three credits. Prerequisite: CHIN 1010 or advanced placement. Continuation of 1010.
- 2010 Intermediate Chinese I.** Three credits. Prerequisite: CHIN 1020 or advanced placement. Continued study of the Chinese writing system, basic vocabulary and daily expressions, culture and society; and most importantly, the ability to use the language in communication.
- 2020 Intermediate Chinese II.** Three credits. Prerequisite: CHIN 2010 or advanced placement. Increased emphasis on using the language appropriately. Introduction of reading strategies and communication strategies.

Communication [COMM]

- 2150 Voice and Diction.** Three credits. Development of self-confidence, more articulate speech, and effective voice quality through knowledge of the vocal mechanism; classroom drills and individualized instruction.
- 2200 Fundamentals of Communication.** Three credits. Principles and processes underlying human communication. Communication models; communication purposes and breakdowns; variables related to interpersonal, small group, intercultural, and public communication. Emphasis on public oral communication including research, critical thinking, organization, presentation, and listening. **Counts as part of the General Education Communication requirement.**
- 2300 Interpersonal Communication.** Three credits. Overview and application of fundamental principles and theories. Highly participatory class in which analysis of students' skills and further development is stressed. Foundation preparation for studying other forms of human communication.
- 3020 American Religious Communication.** Three credits. A rhetorical study of the religious communication in America from colonial times to the present.
- 3210 Argumentation.** Three credits. Prerequisite: COMM 2200 or permission of instructor. Theory and practice of advocacy with emphasis on organization, refutation, reasoning, and rebuttal. In-class debating on questions of fact value and policy.
- 3220 Small Group Communication.** Three credits. Prerequisite: COMM 2200 or 2300 or permission of instructor. Theories of group dynamics and practical application. Study and practices of leadership in groups as decision-making organizations.
- 3225 Gender Communication.** Three credits. Prerequisite: COMM 2200 or 2300 or permission of instructor. Highly participatory class in which critical thinking of values, issues, decision-making paradigms, and traditions in the field of gender communication is expected. Emphasis on individual practical application in personal and professional environments.
- 3230 Advanced Public Speaking.** Three credits. Prerequisite: COMM 2200 or permission of instructor. Application of principles of public speaking through the analysis and criticism of speech structure and delivery of classroom speeches.
- 3300 Communication Theory, Culture, and Films.** Three credits. Selected communication theories and implications for culture and communication as revealed in films as cultural texts.
- 3325 Great American Speakers.** Three credits. A rhetorical study of the great American speakers from colonial times to the present. Successful students will gain an understanding of the principles of rhetorical criticism and apply these principles to selected speakers. Students will also gain an appreciation of the impact of public communication upon our society.

- 3340 Interview Communication.** Three credits. Prerequisites: Junior standing or permission of instructor. A critical study of interviewing and effective communication techniques for employment selection and informative, persuasive, exit, and appraisal interviews.
- 3350 Multicultural Communication.** Three credits. Communication and intergroup relationships between people of different ethnic/racial backgrounds in the United States.
- 3560 Intercultural Communication.** Three credits. The dynamics of the communication process as it functions in intercultural contexts; training for successful cross-cultural communication interactions.
- 3570 Communication in the Middle East.** Three credits. Prerequisite: Junior standing or permission of instructor. Examines communication in the Middle East through films, narratives, and cultural studies. Focuses on the roles and views of Middle Eastern women.
- 3580 Political Communication.** Three credits. Nature and functions of communication with political institutions and groups, including campaign communication, decision-making strategies, deliberative discourse, advocates, and interest groups.
- 3620, 3630, 4620, 4630 Applied Communication.** One credit each. Prerequisite: Recommendation by a departmental faculty member. Field and laboratory experiences for the study of communication.
- 4260 Readings in Communication.** Three credits. Prerequisites: Permission of instructor and completion of 21 semester hours in communication studies courses. Intensive study of a specific area of communication; topic is chosen in instructor-student conference.
- 4320 Theories of Persuasive Communication.** Three credits. Recent writings and research on theories of persuasion and on current practices of persuasion. Emphasis on ethical critical, cultural, and functional implications in contemporary persuasion theory and practice.
- 4650 History, Theory, and Criticism of Rhetoric.** Three credits. Prerequisite: COMM 2200 or 3230. Explores history, theory, and criticism of rhetoric from ancient times to the present.
- 4700 Senior Seminar in Communication.** Three credits. Intensive investigation of the major research methodologies in communication studies; presentation of senior projects and a synthesis of the communication discipline.
- 4800 Special Topics in Communication.** One to three credits. Meets individual and group needs for advanced study in speech communication. Topic determined at the time of scheduling. A maximum of six semester hours may be applied toward a degree.
- 4900 Internship in Communication.** One to three credits. Practical experience in a professional work setting in a field requiring communication skills. May be repeated up to a maximum of four credit hours with no more than three credit hours earned in one semester.
- 3200 Phonological Disorders.** Three credits. Prerequisites: CDIS 3050 and 3150. Speech development, etiologies of phonological/articulatory problems, and approaches for assessing and remediating speech-sound errors.
- 3250 Speech and Language Development.** Three credits. Child speech and language acquisition from birth through the early school years. Emphasizes normal linguistic development.
- 3260 Language Acquisition and Analysis.** Three credits. Language development and procedures for analyzing child language. Semantic, syntactic, and pragmatic development explored through examining child language transcripts.
- 3300 Clinical Methods in Communication Disorders.** Three credits. Prerequisites: CDIS 3050, 3150, 3200, 3260, and academic criteria established by the faculty. Planning and implementing treatment programs for individuals with speech-language disorders. A foundation for clinical practicum.
- 3350 Hearing Problems and Testing.** Three credits. The etiologies and diagnoses of hearing problems; practical experience in administering audiometric examinations.
- 3400 Anatomy and Function of the Speech Mechanism.** Three credits. Prerequisite: CDIS 3050 or permission of instructor. The structures and function of the speech mechanism.
- 3450 Fluency Disorders.** Three credits. Prerequisite: CDIS 3050. Etiologies, assessment, and treatment of fluency disorders.
- 4400 Introduction to Neurogenic Communication Disorders.** Three credits. Prerequisites: CDIS 3050, 3300, 3400, and senior standing. Structures and function of the central nervous system, the peripheral nervous system, and their constituent parts. Focus on function as it impacts human communication. Includes historical perspectives in the study of the brain and development of imaging techniques.
- 4500 Intervention for Individuals with Hearing Loss.** Three credits. Prerequisites: CDIS 3050, 3260, and 3350. Materials and methods employed in programs for persons with hearing loss.
- 4550- Practicum in Speech-Language Pathology I.** Three credits each.
- 4580** Prerequisites for 4550: CDIS 3300, prior semester application, and completion of academic and professional criteria established by the faculty. Prerequisites for 4560, 4570, and 4580: CDIS 4550, 4560, and 4570 respectively. Supervised clinical practice in the University clinic.
- 4600 Practicum in Speech-Language Pathology II.** Three credits. Prerequisites: CDIS 4550 and 4560, prior semester application, and approval by faculty. Advanced supervised clinical practice in an off-campus clinical facility.
- 4620, 4630 Applied Speech.** One credit each. Prerequisite: Recommendation by a departmental faculty member. Study of a specific area of communication disorders to be completed through instructor-student conferences.
- 4650 Practicum in Speech-Language Pathology III.** Six credits. Prerequisites: CDIS 4550 and 4560; prior semester application; and approval by faculty. Organization, management, and implementation of public school speech-language and hearing programs. Advanced supervised clinical practice in a public school setting. The School Speech-Language Teacher license requires completion of this course.

Communication Disorders [CDIS]

- 3050 Introduction to Communication Disorders.** Three credits. Overview of the professions of speech-language pathology and audiology, with emphasis on the common disorders of speech, language, and hearing and their treatment.
- 3150 Phonetics.** Three credits. Training in the recognition and production of the sounds of speech with an analysis of their formation; extensive practice in phonetic transcription.

4700- Practicum in Audiology. One credit each. Prerequisites for 4700: 4730 CDIS 3350 and 4550 or permission of instructor. Prerequisites for 4710, 4720, and 4730: 4700, 4710, 4720 respectively. Laboratory course in applying principles of audiology.

4750 Advanced Audiology. Three credits. Prerequisites: CDIS 3300 and 3350 or permission of instructor. The development of advanced skills in the evaluation and remediation of hearing problems.

4800 Speech and Language Disorders in the Adult Population. Three credits. Overview of the impact of age on communication. Identification and remediation of communication problems associated with the aging process.

4850 Speech and Language Disorders in Childhood. Three credits. Prerequisites: CDIS 3400 and 4550 or permission of instructor. A comprehensive study of the speech, language, and voice difficulties experienced by children.

4900 Diagnostic Procedures in Speech Pathology. Three credits. Prerequisite: CDIS 4550 or permission of instructor. Basic concepts of measurement and application of diagnostic procedures used in speech-language pathology.

4950 Special Topics in Communication Disorders. Three credits. Prerequisite: CDIS 3300 or permission of instructor. Advanced reading and discussion about selected topics in speech-language pathology or audiology. Content varies from semester to semester. A maximum of six semester hours may be applied toward a degree.

Computer Science [CSCI]

1000 Computer Literacy. One credit. An introduction to computers at the non-professional level. Major topics include historical development; impact on society; ethics, applications, languages, and terminology with emphasis on personal computers; productivity tools: word processor, spreadsheet, and Internet. Does not count for Computer Science major or minor.

1150 Computer Orientation. Three credits. A general introduction to computers with an emphasis on personal computing, database, word processing, presentation graphics, spreadsheets, and Internet tools. Does not count for Computer Science major or minor.

1160 Multimedia Computation. Three credits. Prerequisite: Sufficient background in algebra. Computer science concepts and computer software development using a multimedia approach to program development. Algorithms, programming, and documentation of media computation problems including modifying, editing, and creating picture and sound files. Computer science hardware and software terminology. Counts toward a Computer Science major or minor upon successful completion with a grade of A or B and approval by Computer Science chair.

1170 Computer Science I. Four credits. Prerequisite: Sufficient background in algebra and trigonometry. The first of a two-semester sequence using a high-level language; language constructs and simple data structures such as arrays and strings. Emphasis on problem solving using the language and principles of structured software development. Three lectures and one two-hour laboratory.

2170 Computer Science II. Four credits. Prerequisite: CSCI 1170 or equivalent. A continuation of CSCI 1170. Topics include introductory object-oriented programming techniques, software engineering principles, records, recursion, pointers, stacks and queues, linked lists, trees, and sorting and searching. Three lectures and one two-hour laboratory.

3031- Computer Languages. One to three credits. Prerequisite: CSCI 2170 or consent of instructor. An opportunity for a Computer Science major or minor to gain experience and training in a secondary language. Covers the syntax, advantages, disadvantages, limitations, and selected applications of a language. Credit will not be given toward a Computer Science major or minor if credit has been received for the same language in another course. May be repeated for up to three hours credit in the major or minor.

3031 C-Language. Two credits.

3032 FORTRAN. Two credits.

3033 Java. Three credits.

3034 Pascal. Three credits.

3035 Smalltalk. Two credits.

3036 UNIX C-Shell Programming. One credit.

3037 Visual Programming. Three credits.

3038 Python. Three credits.

3080 Discrete Structures. Three credits. Prerequisites: CSCI 1170 and MATH 1910 or consent of instructor. Topics include formal logic, proof techniques, matrices, graphs, formal grammars, finite state machines, Turing machines, and binary coding schemes.

3110 Advanced Data Structures. Three credits. Prerequisite: CSCI 2170; corequisite: CSCI 3080. Topics include additional object-oriented programming techniques, algorithm design, analysis of algorithms, advanced tree structures, indexing techniques, internal and external sorting, graphs, and file organizations.

3130 Introduction to Computer Architecture. Four credits. Prerequisite: CSCI 3160. Organization and basic architecture of computer systems. Topics include hardware components of digital computers, microprogramming, and memory management. Laboratory exercises involve logical, functional properties of components from gates to microprocessors. Three lectures and one two-hour laboratory.

3150 Technology Tools. One to three credits. Prerequisite: CSCI 1000 or equivalent or permission of instructor. The use, history, and impact of technology tools. Hands-on laboratory exercises. Does not count for Computer Science major or minor.

3160 Introduction to Assembly Language. Three credits. Prerequisite: CSCI 1170 or equivalent. Computer architecture and assembly language. Major emphasis on addressing techniques, macros, and program segmentation and linkage.

3180 Introduction to Numerical Analysis. Three credits. (Same as MATH 3180.) Prerequisites: MATH 1920 and CSCI 1170. Topics include series approximation, finite differences interpolation, summation, numerical differentiation and integration, iteration, curve fitting, systems of equations and matrices, and error analysis.

3210 Theory of Programming Languages. Three credits. Prerequisite: CSCI 2170; corequisite: CSCI 3080. Syntax and theory of multiple languages covered with emphasis on binding times, parsers, grammars, finite automata, regular expressions, type checking and equivalence, scope of variables, exception handling, parameter passing, and storage management.

3250 Operating Systems. Three credits. Prerequisites: CSCI 2170 and 3160. Concepts and facilities of an operating system. Major concepts in memory, processor, device, and information management are covered as well as interrelationships between the operating system and the architecture of the computer system.

3420 Social, Ethical, and Legal Implications of Computing. Two credits. Prerequisites: A three-hour course in computing, COMM 2200, and junior standing. Introduction to the impact of computers on

society and the ethical and legal issues confronting computer users and professionals. Does not count toward a minor in Computer Science.

- 4110 Advanced Commercial EDP.** Three credits. Prerequisite: CSCI 2170 or equivalent. File management in business applications. Structuring and identification of files stressed along with software engineering principles. COBOL language used as the implementation tool.
- 4130 Microprocessor Operation and Control.** Three credits. Prerequisite: CSCI 3160. Digital systems based around microcomputers, microcomputer architecture, logic replacement, memory design, timing considerations, input/output design, interfacing, robotics, and total system design.
- 4160 Compiler Design and Software Development.** Three credits. Prerequisites: CSCI 3080, 3110, and 3160. The various phases of a compiler along with grammars, finite automata, regular expressions, LR parsing, error recovery, backward and forward flow analysis, and code optimization. A term project consisting of the design and construction of a functional compiler required.
- 4250 Computer Graphics.** Three credits. Prerequisites: CSCI 2170 and 3080 or consent of instructor. Topics include vector drawing displays, raster scan displays, input devices and techniques, graphics software, transformations, projections, interpolation, and approximation.
- 4280 Undergraduate Research.** One to four credits. Prerequisite: Permission of instructor and department. Independent investigation of a selected research problem under the guidance of a faculty member resulting in an oral and written report of results. Does not count toward a minor in Computer Science. May be repeated for a maximum of four credits. A maximum of three credits in the major may come from CSCI 3970, 4280, 4600, and 4910.
- 4300 Data Communication and Networks.** Three credits. Prerequisite: CSCI 3250. Computer network architectures, protocol hierarchies, and the open systems interconnection model. Modeling, analysis, design, and management of hardware and software on a computer network.
- 4330 Parallel Processing Concepts.** Three credits. Prerequisites: CSCI 3130, 3250, and a working knowledge of either C or C++. Basic concepts in parallel processing and programming in a parallel environment. Topics include classification of parallel architectures, study of actual parallel architectures, design and implementation of parallel programs, parallel software engineering.
- 4350 Introduction to Artificial Intelligence.** Three credits. Prerequisites: CSCI 2170 and 3080 or equivalent. Principles include search strategies, knowledge representation, reasoning, and machine learning. Applications include expert systems and natural language understanding.
- 4360 Intelligent Robot System.** Three credits. Prerequisites: CSCI 2170 and 3080. Principles and applications of intelligent mobile robotics. Various architectures used in the basic AI robotics development paradigms and basic techniques used for robot navigation. Strong emphasis on hands-on mobile robot design, construction, programming, and experimentation using a variety of robot building platforms.
- 4410 Web Technologies.** Three credits. Prerequisites: CSCI 3080 and 3110. An intensive introduction into current Web technologies including basic HTML, tools for Web page design, XML, client-side methods, and server-side methods. Students will be required to implement several Web-based projects.
- 4560 Database Management Systems.** Three credits. Prerequisites: CSCI 3080 and 3110. The relational and object models of database design along with relational algebras, data independence, functional dependencies, inference rules, normal forms, schema design, modeling languages, query languages, and current literature.
- 4600 Independent Study in Computer Science.** One to six credits. Prerequisites: Senior standing and consent of instructor. Students wishing to enroll must submit a written course/topic proposal to the department prior to the semester in which CSCI 4600 is taken. Proposal must be approved prior to taking the course. At the course conclusion, each enrollee must submit a written report to the department. May count up to 3 hours toward Computer Science major. May not be used in conjunction with CSCI 3970.
- 4700 Software Engineering.** Three credits. Prerequisites: CSCI 3080 and 3110. Consists of a theoretical component and a practical component. Topics include the history of software engineering, software development paradigms and life cycles, and computer-aided software engineering (CASE). Team project developed in parallel with the theory.
- 4800 Software Testing.** Three credits. Prerequisites: CSCI 2170 and 3080. Integrates theory and applications of software testing techniques. Provides actual hands-on testing experience. Considers multiple testing paradigms.
- 4850 Neural Nets.** Three credits. Prerequisite: CSCI 3080. Various neural net architectures, theory, and applications including models such as Perceptron, back propagation, Kohonen, ART, and associative memory. Learning and conditioning methods also studied.
- 4900 Selected Topics in Computer Science.** Three credits. Prerequisite: CSCI 2170. Advanced topics in computer science to be selected and announced at time of class scheduling. May be repeated for up to six credits total.
- 4910 Internship.** One to six credits. Prerequisites: CSCI 2170 and 3160. Must be at least a junior with a minimum overall average of 2.75 and 3.00 in computer science. Employment experience in a computer-related function in a firm, governmental agency, etc. Must be approved by the department.

Concrete Industry Management [CIM]

- 1010 Introduction to Concrete Industry.** One credit. Overview of the history, career opportunities, job functions, and professional organizations in the concrete industry. Introduction to the concrete industry management curriculum, instructional exceptions, and methodologies.
- 1050 Blueprint Reading.** One credit. Provides a broad-based background in interpreting blueprints. Typical plans for both residential and commercial building reviewed.
- 3000 Fundamentals of Concrete: Properties and Testing.** Four credits. Prerequisites: CHEM 1010/1011 or 1110/1111; CIM 1010 or CMT 1000; must be a declared CIM or CMT major. Concrete testing, admixtures, placing, and finishing. Effects of concrete-making materials on properties of fresh and hardened concrete materials. Three hours lecture and three hours laboratory.
- 3050 Concrete Construction Methods.** Three credits. Prerequisites: CIM 1010, 3000. Forming and shoring, placing and reinforcing; transporting, placing, consolidating, finishing, jointing, and curing concrete for cast-in-place foundations, pavements, slabs on ground, structural frames, and other structural members; erecting precast concrete members; waterproofing concrete foundations.

- 3060 Understanding the Concrete Construction System.** Three credits. Prerequisites: CIM 1010, 3000. Detailed look at how the concrete construction industry works. Includes review of model building codes, building officials and their function, concrete industry codes and standards, concrete construction processes, quality assurance systems, contract documents, and concrete construction markets.
- 3070 Site Planning, Layout, and Preparation.** Three credits. Prerequisites: CIM 1010, 3050. Activities required to successfully prepare a site for concrete work. Includes initial site investigation, surveying, groundwork, subbase preparation, and elevations. Exposes students to modern technological tools and methods such the use of GPS, EDM, and lasers. Two hours lecture and three hours laboratory.
- 3080 Formwork Design and Computerized Drafting.** Three credits. Prerequisites: CIM 1010, 3050, and declared CIM major. Overview of costs and safety with regard to formwork selection, design, and construction. Reviews the various forming systems available and how they may be integrated for use in specific project circumstances. Includes a basic review of CAD drafting techniques and their applications.
- 3100 Applications of Concrete Construction.** Three credits. Prerequisites: CIM 1010, 3000, 3050, and declared CIM major. Details many uses of concrete in the construction of buildings, pavements, and other facilities. Emphasis on the advantages, disadvantages, and unique problems faced by materials suppliers, contractors, and design professionals when concrete is chosen for specific applications.
- 3200 Concrete Project Estimating.** Three credits. Prerequisites: CIM 1010, 3100. Project drawings to prepare both basic and detailed estimates. Activities include practice implementing the print-reading, estimating, and other skills acquired using actual sets of finished drawings. Projects will become more complicated as the semester progresses and will include below-grade, flatwork, and above-grade examples.
- 3300 Concrete Industry Internship.** Two credits. Prerequisite: CIM 1010. Opportunity for students to gain supervised, practical work experience in their particular field of interest within the concrete industry. The student will be evaluated by his/her supervisor, and a final report will be submitted by the student detailing the internship experience.
- 3600 Advanced Concrete Project Management.** Three credits. Prerequisites: CIM 1010, 3060. A continuation of the construction management concepts taught in CIM 3060. Emphasis on application of advanced project management concepts. A group activity involving management of a complex concrete construction project.
- 4010 Design and Construction Issues.** Three credits. Prerequisites: CIM 1010, 3200. A review of concrete construction materials and their physical and mechanical properties. Special emphasis placed on the concepts of mechanics of materials and resolving design/construction mismatches.
- 4030 Issues in the Concrete and Construction Industry: A Legal and Ethical Perspective.** Three credits. Prerequisite: CIM 1010. Involves a case study approach to critically analyzing historical and current events in the concrete and construction industry. Particular emphasis on developing a managerial decision-making process incorporating ethical, legal, financial, and other business perspectives.
- 4050 Management of Concrete Products: Ordering and Delivering.** Three credits. Prerequisites: ET 3910; CIM 1010, 3000, and 3050. Provides student with basic understanding on managing order and delivery processes common to all concrete products. Emphasis on planning, organizing, and controlling at both the first-line supervisory and managerial levels. Key differences in the order and delivery functions of ready mix concrete, concrete masonry, pre-cast concrete, pre-stress concrete, and concrete pipe supplemented by product-specific guest lectures and plant tours.
- 4060 Management of Concrete Products Production Facilities.** Three credits. Prerequisites: CIM 1010, 3000, and 3050; ET 3910. Provides student with basic understanding of managing the manufacturing process common to all concrete products production facilities. Emphasis on planning, organizing, and controlling at both the first-line supervisory and managerial levels. Review of key differences in manufacturing process of ready mix concrete, concrete masonry, precast concrete, pre-stress concrete, and concrete pipe explained through product-specific guest lectures and plant tours.
- 4070 Concrete Contracting Personnel Management.** Three credits. Prerequisite: Senior standing. Application of personnel management techniques in the contracting business. Emphasis on adapting management styles to various employee personality traits, training techniques, personal management, effective and efficient management of equipment and other resources, and leadership development.
- 4100 Field Management and Supervision.** Three credits. Prerequisite: Senior standing. Offers knowledge and skills to effectively manage concrete construction jobsite activities. Emphasis on safety, equipment identification and use, maintenance, contingency plans, and worksite productivity.
- 4150 Concrete Problems: Diagnosis, Prevention, and Dispute Resolution.** Three credits. Prerequisite: Senior standing and declared CIM major. Diagnosing and preventing problems related to concrete production, testing, construction, and performance. Identifying causes of fresh and hardened concrete problems such as fast and slow setting, air content variations, low strength, cracking, and scaling. Pre-job conferences and dispute resolution methods.
- 4200 Senior Concrete Lab.** Two credits. Prerequisite: Must be a declared CIM major. Opportunity for students to gain in-depth knowledge of the technical aspects of concrete and cement chemistry in a laboratory environment. The student will be evaluated by his/her ability to investigate a concrete situation and resolve the issue with a laboratory project. Graded activities include in-class exercises, written reports, and oral presentations. One hour lecture and three hours laboratory.
- 4800 Special Problems in Concrete Industry Management.** One-three credits. Prerequisite: Permission of department and declared CIM major. Opportunity to pursue projects of individual interest in concrete industry management. Projects may be technical and/or managerial in nature and may require any combination of literature reviews, lab work, field studies, and other research methods. A faculty member will approve a formally submitted proposal for the study, supervise progress, and grade a report and a presentation which are required upon completion of the project. May be repeated for up to 6 hours of undergraduate credit.
- 4910 Capstone.** Three credits. Prerequisite: To be taken semester before graduation; must be declared CIM major. Intensive study of a problem(s) appropriate to the major and the student's career interest. Solution(s) for problem(s) presented to a committee of concrete industry representatives. Presentation must emphasize depth of analysis, completeness and effectiveness of solution, and presentation skills.

Construction Management Technology [CMT]

- 1000 Introduction to Commercial Construction.** One credit. Details positions found in industry, what to expect in the commercial construction arena, possible visits to job and estimation sites, and information regarding the industry in general. Covers courses needed, requirements for graduation, and outside forces that impact the industry. Guest lecturers, tours, films and presentations arranged in seminar fashion. Required freshman year. Offered fall semester only.
- 3000 Commercial Construction and Materials.** Three credits. Blueprint reading, commercial construction materials and equipment, commercial construction systems, new materials and procedures, and fundamentals essential to knowledge of the commercial construction field. Lecture, field observations, and site/or plant visits required.
- 3150 Residential Building Construction and Materials I.** Three credits. Corequisite: CMT 3160. Blueprint reading, terminology, building materials, methods and techniques, problems, and fundamentals essential for residential construction. Recommended for those desiring general knowledge of construction or work in the construction field. Two hours lecture and three hours laboratory.
- 3155 Land Development and Residential Building.** Three credits. Prerequisite: Junior status or permission of department. Online course for land development and infrastructure layout. House plans, methods, and techniques used in building conventional structure. Recommended for those desiring general knowledge as a consumer of residential construction. (Required for Electrical Construction Management concentration. Land Development/Residential Building Construction Management major or minor students cannot use this course to replace CMT 3150.)
- 3160 Residential Cost Estimating I.** Three credits. Prerequisite or corequisite: CMT 3150. Principles and practices involved in the preparation of a cost estimate for a residential home. Topics include introduction to cost estimating, materials, and labor costs for residential building.
- 3180 Construction and Materials II.** Three credits. Prerequisites: CMT 3150 and 3190. A continuation of CMT 3150 with emphasis on new building materials and various types of construction. Light commercial construction included.
- 3190 Construction Land Development Operations.** Three credits. Topics include contractor procedures in land development, land development infrastructure, and management methods.
- 3195 Sustainable Construction.** Three credits. Prerequisite: CMT 3190 or permission of department. Current green building technologies with an introduction to LEED (Leadership in Energy and Environmental Design) and NAHB (National Association of Home Builders) Green Building Guidelines and other green build programs. Also covers the impact of the building industry on the environment and how that impact can be minimized by the use of green technology.
- 3210 Residential Codes, Regulations, Specifications, and Plan Reading.** Three credits. Prerequisite: CMT 3150. The residential and subdivision infrastructure construction language for plan reading, codes, regulations, and specifications. Lectures and hands-on activities. Industry will provide guest lecturers and show examples of some of their work in the field. Students will be required to visit architects, city and county codes department representatives, and contractors during the semester.
- 3320 Architectural Computer-Aided Drafting and Design.** Three credits. Prerequisites: ET 2310 and CMT 3190 or consent of instructor. Using computers to draw and design residential architectural plans. Specifically geared toward the construction area of concentration. Two hours lecture and three hours laboratory.
- 3500 Land Surveying.** Three credits. Prerequisites: MATH 1710 and 1720. Open to Construction Management majors only. Basic surveying operations such as chaining, differential leveling, transverse methods and calculations, structural layout, topographic mapping, and slope staking for road and utilities in subdivisions. Basic surveying instruments used include the chain, automatic level, transit, and theodolite. Environmental issues relating to land and land development covered. Two hours lecture and three hours laboratory.
- 4000 Soils, Foundations, and Earth Moving Equipment.** Three credits. Properties and testing of soils on a job site, different kinds of foundations used, and an overview of the different kinds and costs of earth moving equipment used in the commercial construction industry.
- 4010 Construction Law.** Three credits. Prerequisite: Junior standing. Practical approach to the legal system in construction. Topics include licensing requirements, business associations, hiring professionals, employment issues, insurance, worker's comp, tort liability, contracts, financing, sale of property, title issues, liens, land use, bankruptcy, and warranties.
- 4100 Mechanical and Electrical Systems.** Three credits. Prerequisite: CMT 3320. Fundamentals and computer design of mechanical, electrical, and plumbing systems used in the residential and light commercial building construction industry. Two hours lecture and three hours laboratory.
- 4110 Cost Estimating II.** Three credits. Prerequisites: CMT 4100, 4120, and 4130. Use of computer to estimate total cost of land development and housing costs for capstone project.
- 4120 Scheduling.** Three credits. Prerequisites: CMT 3190, 3320, and 4100. Flow of labor and material toward specified goal, weather, trade characteristics, and material availability in work scheduling shown by graphs.
- 4130 Construction Administration.** Three credits. Prerequisite: CMT 3320. Management and administration of construction to include contracts, office, and field work.
- 4140 Construction Management Principles.** Three credits. Detailed look at how the construction industry works. Includes review of model building codes, building officials and their functions, construction industry codes and standards, quality assurance systems, contract documents, and principles of managing construction contracts.
- 4170 Capstone—LDRB Construction Management.** Three credits. Prerequisites: CMT 4100, 4120, and 4130. Final preparation of development plans, etc., for subdivision. Basic principles of presentations. Presentation of capstone project to Building Construction Technical Committee.
- 4172 Capstone for Electrical Construction Management.** Three credits. Prerequisite: Senior status; permission of department. Taken during the last semester of coursework at MTSU. Student will develop a project(s) that relates to the material covered in concentration courses. Proposed outline(s) required and must be approved by the Electrical Construction Management advisor before starting.

4200 Commercial Cost Estimating and Bidding. Two credits. Commercial estimating including take-offs from blueprints, using preferred computer estimating programs, educational trips to Dodge Room in Nashville, actually seeing a job being estimated and bid.

4280 Commercial Construction Capstone. One credit. Construction portfolio presented to subcommittee of advisory committee. Pictures and/or projects developed in junior- and senior-level commercial construction classes included; all facets of a commercial construction project from inception to completion. Pass/Fail.

Cooperative Education [COED]

2930, 2940, 3970, 3980 Cooperative Education. Three credits. Experiential learning that occurs in real employment situations. Must be taken in sequence or approved by the director of Cooperative Education. Graded on a pass/fail basis.

Criminal Justice Administration [CJA]

1100 Introduction to Criminal Justice Administration. Three credits. Survey of the criminal justice system; philosophy and history of criminal justice agencies; analysis of the problems and needs of agencies involved in the criminal justice process; survey of professional career opportunities.

2100 Criminal Theory. Three credits. Introduction to crime theory and criminal justice policies. Topics include biological, psychological, and sociological studies of crime and policies adopted by the criminal justice system in response to crime theory.

2200 Prevention and Control of Crime. Three credits. The police function; an analysis of crime prevention and control; major problems and needs of the law enforcement segment of the criminal justice system.

2400 The Judicial Process. Three credits. The structure and function of the judicial system; the major problems and needs of the judicial segment of the criminal justice system; major emphasis on the basic concepts of criminal law and administration.

2600 Corrections. Three credits. History of the development of corrections in Europe and America; survey of current prison conditions and operations, including pre-release, probation, and parole.

2900 Practicum in Law Enforcement. Six credits. Practicum. (Specialized Instruction, Tennessee Law Enforcement Training Academy, Donelson.) In addition to normal tuition and fees, students will also be required to pay room and board costs at the Academy. Open only to pre-service seniors. Arrangements to take this course should be made with the department chair at least one semester in advance so that the student can be enrolled in the academy.

3200 Research Methods with Computer Technology. Three credits. Prerequisite: CJA 1100 or permission of instructor. Overview of scientific research methods in criminal justice with emphasis on computer technology to conduct research and interpretation and analysis on various statistical data.

3220 Ethics in Criminal Justice. Three credits. Principles of justice and ethics. Covers ethics and law, police and ethical standards, ethics and the courts, and correctional ethics.

3230 Police Organization and Administration. Three credits. Principles of organization and personnel management, line staff and auxiliary functions; the police organization and the individual; planning,

research, and development; political controls on authority and jurisdiction; professionalization of the police.

3250 Criminal Law. Three credits. Prerequisite: CJA 1100. Theories and principles of the body of substantive criminal law. Covers the elements of the range of criminal law offenses.

3400 Constitutional Issues and Criminal Justice. Three credits. Development of Constitutional and procedural controls of the administration of criminal justice. Constitutional limits on law enforcement agencies including the laws of arrest, search and seizure, admissions and confessions, and eavesdropping; on pre-trial and trial procedures, on past conviction processes. Emphasis on current U.S. Supreme Court decisions.

3450 Legal Issues in Corrections. Three credits. Prerequisite: CJA 1100 or permission of instructor. Legal issues concerning the constitutional rights of convicted offenders. Topics include impact of court decisions upon correctional personnel and administration; use of force; rights of visitation; use of mail, solitary confinement, religion, legal services; probation and parole regulations; right to treatment; and civil liabilities of correctional officials.

3500 Criminal Courts: Structure, Personnel, and Processes. Three credits. Prerequisites: CJA 1100 and 2400. Role of the criminal courts in our criminal justice system with a focus on structures, personnel, and processes. Various job opportunities and placement qualifications discussed.

3630 Probation and Parole. Three credits. An analysis of the history, theory, philosophy, and function of probation, parole, and pardon; evaluation of the effectiveness of the individual in the community; usage of pre-sentence investigation; selection, supervision, and release of probationers and parolees.

3650 Correctional Management. Three credits. Prerequisites: CJA 1100 and 2600 or permission of instructor. Comprehensive overview of management issues in both institutional and community corrections. Topics include organizational theory; planning, programming, and budgeting; policy analysis, program evaluation, information systems and technology; facilities management; offender classification systems; treatment programs; management of special offender populations; personnel issues.

3700 Women, Crime, and Justice Administration. Three credits. (Same as WMST 3700.) Explores the experience of women in the criminal justice system as victims of violence and as criminal justice employees and prisoners. Focus on gender-based differences in the experience of criminal justice from historical, economic, and professional perspectives.

3750 Terrorism and Criminal Justice. Three credits. Prerequisite: CJA 1100 or permission of instructor. Meaning, history, purposes, and incidents of terrorism. Emphasis on terrorist acts as crimes along with the unique role of law enforcement in the detection, prevention, investigation, and prosecution of the crimes. Legislative, constitutional, and legal issues surrounding law enforcement, courts, and corrections explored.

3900 Organized and White-Collar Crime. Three credits. Prerequisite: CJA 1100. Explores emergent and historical treatments of white collar and organized crime, with an emphasis on theoretical, etiological, and enforcement typologies in both the criminological and criminal justice literatures. Advent of several high-profile connections between traditionally distinct organized and white-collar crimes emphasized.

4220 Community Relations and Minority Problems. Three credits. Analysis of public hostility toward police and current community relations projects, human relations, training and education of law

enforcement officers; responsibilities of police administrators, causes of tension and conflict, dissent and disorder, positive and negative factors in the control of minority group hostilities; minority recruitment in law enforcement.

- 4260 Special Issues in Law Enforcement.** Three credits. A variety of subtopics related to the law enforcement segment of the criminal justice system such as problems in private and public morality with regard to drug use, alcoholism, and sex offenses; analysis of current police training programs; relationship between legislation and political processes which affect law enforcement.
- 4300 Criminal Justice Internship.** Nine credits. Prerequisite: Permission of instructor. (Open only to pre-service seniors, e.g., those preparing for a career in the criminal justice field who are not currently employed by a criminal justice agency and restricted to Criminal Justice Administration majors and minors.) Field placement in a criminal justice agency to provide practical understanding and experience in the field. A minimum of 320 clock hours required.
- 4330 Criminal Investigations.** Three credits. Prerequisite: For Criminal Justice Administration majors or minors or with permission of instructor. General investigative responsibilities and techniques including administration, preparation, investigative jurisdiction and responsibility, and the importance of substantive report writing.
- 4340 Crime Scene Investigation.** Three credits. Prerequisite: CJA 4330. Advanced approach to the various elements of criminal investigations. Provides simulated investigative experiences through the use of mock crime scenes. Emphasis on preparing students for a career in law enforcement.
- 4500 The Juvenile Justice System.** Three credits. The problem of juvenile delinquency and youth crime with emphasis on the history of the juvenile justice system, the court and police role within the system, rehabilitation and correction of the delinquent, and juvenile probation services. Alternatives to traditional procedures, such as community-based programs versus correctional institutions, and non-judicial and judicial adjustment examined.
- 4530 Criminal Evidence and Procedures.** Three credits. Designed to develop an understanding of the types of individuals and problems of admissibility in court proceedings, the proper treatment and disposition of evidence, the legal procedure to be followed, and the actual trial procedure.
- 4750 Seminar in Corrections.** Three credits. Each student required to select a problem area of interest for an intensive research effort. The group will be presented with a contemporary corrections issue or problem and will be required to create practical and workable strategies for coping with the issue.
- 4800 Crime in America: An Assessment.** Three credits. An in-depth survey of the impact of crime on American society; the amount and trends of crime, the economic impact of crime, professional and white collar crime, characteristics of offenders, and victims of crime.
- 4850 Private and Industrial Security.** Three credits. Examines the relationships among the criminal justice system, homeland security, and private and industrial security including historical roots and mutual concerns. Covers terrorist acts, internal theft, white-collar crime, retail security, institutional security, cargo and computer security as well as the role of the criminal justice system in prevention and investigation.
- 4860 Security Administration.** Three credits. The placement of the security function within an organization. The role of the security manager in developing a program to protect assets and reduce illegal losses, to protect against acts of terrorism, and to provide

protection for personnel. The application of management techniques to the operation of the organization's security division, including personnel recruitment and selection. Development of security survey techniques, identification of security risks, and techniques used to eliminate opportunities for theft, other crimes, and terrorist acts.

- 4870 Security Law.** Three credits. An analysis of the legal background of private and proprietary security. Critical current legal issues in the private security field including terrorism issues. Legal and cooperative relationships between private and proprietary security operations and public law enforcement agencies.
- 4900 Readings in Criminal Justice Administration.** Three credits. Prerequisite: Open only to Criminal Justice Administration majors and minors. For the advanced student who is capable of independent study. Readings in a particular area of criminal justice relevant to the individual student's interests. Preparation of an annotated bibliography and report required. Arrangements for this course should be made with the instructor prior to registration.
- 4930 International Criminal Justice.** Three credits. Prerequisite: CJA 1100 or permission of instructor. Compares the American criminal justice system with those in other countries. Examines historical origins, structural differences, and varying degrees of effectiveness and efficiency in law enforcement, courts, and corrections in selected nations. Explores challenges posed by the globalization of crime and terrorism.

Dance [DANC]

- 1000 Dance Appreciation.** Three credits. Dance as an expressive art form, a symbolic language, and an integral aspect of world cultures. Lecture/discussion course for the general student population. Not a performance or activity course.
- 1010 Modern Dance Techniques I.** Two credits. Modern dance techniques; emphasis on exploration of fundamentals of dance as a form of artistic communication. For students with little or no previous experience in modern dance. May be repeated for a maximum of 4 credits.
- 1020 Jazz Dance Techniques I.** Two credits. Contemporary jazz dance techniques; emphasis on exploration of fundamentals of dance as a form of artistic communication. For students with little or no previous experience in jazz dance. May be repeated for a maximum of 4 credits.
- 1030 Tap Dance Techniques I.** Two credits. Tap dance techniques; emphasis on exploration of the fundamentals of dance as a form of artistic communication. For students with little or no previous experience in tap dance. May be repeated for a maximum of 4 credits.
- 1040 Ballet Techniques I.** Two credits. Classical ballet techniques; emphasis on exploration of ballet as a classical art form. For students with little or no experience in ballet. May be repeated for a maximum of 4 credits.
- 1050 Dance Performance Workshop for Governor's School for the Arts.** Two credits. Prerequisite: Permission of instructor. Dance practicum for students involved with the Tennessee Governor's School for the Arts. Designed to give experience in specific areas of dance study while students prepare for the Finale production.
- 2000 Introduction to Dance Studies.** Three credits. An overview of the contemporary dance scene and its recent history in aesthetics, scholarship, and in the marketplace. Offered spring semester only.

- 2010 Modern Dance Techniques II.** Two credits. Prerequisite: DANC 1010 or permission of instructor. Intermediate modern dance techniques. May be repeated for a maximum of 4 credits with permission of instructor.
- 2020 Jazz Dance Techniques II.** Two credits. Prerequisite: DANC 1020 or permission of instructor. Intermediate jazz dance techniques. May be repeated for a maximum of 4 credits with permission of instructor.
- 2030 Tap Dance Techniques II.** Two credits. Prerequisite: DANC 1030. Intermediate tap dance techniques. May be repeated for a maximum of 4 credits with permission of instructor.
- 2040 Ballet Techniques II.** Two credits. Prerequisite: DANC 1040 or permission of instructor. Intermediate ballet techniques. May be repeated for a maximum of 4 credits with permission of instructor.
- 3010 Modern Dance Techniques III.** Three credits. Prerequisite: DANC 1010, 2010, or permission of instructor. Techniques, choreography, and various aspects of Labanotation for the experienced dancer and choreographer. May be repeated for a maximum of four credits.
- 3020 Jazz Dance Techniques III.** Three credits. Prerequisite: DANC 1020, 2020, or permission of instructor. Advanced jazz dance techniques. May be repeated for a maximum of 4 credits with permission of instructor.
- 3030 Tap Dance Techniques III.** Two credits. Prerequisite: DANC 1030, 2030, or permission of instructor. Advanced tap dance techniques. May be repeated for a maximum of 4 credits with permission of instructor.
- 3040 Ballet Techniques III.** Three credits. Prerequisite: Permission of instructor. Advanced ballet techniques. May be repeated for a maximum credit of 6 credits with permission of instructor.
- 3600 Teaching Creative Movement for Children.** Three credits. Prerequisites: 2000-level dance technique courses in ballet or modern dance and permission of department. Dance as a viable activity that can enhance the learning process. Explores the discipline of dance as basic to an education for all people. Educational and aesthetic theories and practices related to fashioning developmentally appropriate dance experiences for children.
- 4000- Dance Performance.** One credit each. Prerequisites: Permission of instructor and co-registration in DANC 1010, 1020, 1030, 1040, 2010, 2020, 2030, 2040, 3010, 3020, 3030, 3040, or 4040. All aspects of concert planning and production as performer and crew member. May be taken for one credit per semester for a total of four credits.
- 4000 Dance Performance I**
4010 Dance Performance II
4020 Dance Performance III
4030 Dance Performance IV
- 4040 Ballet Techniques IV.** Three credits. Prerequisite: Permission of instructor. Performance-level techniques and choreography for solo and ensemble pieces in both classical and contemporary styles. May be repeated for a maximum of 6 credits with permission of instructor.
- 4100 Choreography I.** Three credits. Prerequisite: DANC 3100 or permission of instructor. Exploration of movement, technique sequences, and choreographic forms; basic elements of notation.
- 4110 Choreography II.** Three credits. Prerequisites: DANC 3100 or 4100 or permission of instructor. Directed study of a choreographic project. Exploration of choreographic techniques to develop an original group dance and the execution of plans for costumes, lighting, make-up, and sound.
- 4130 Dance for Theatre.** Three credits. Prerequisite: Permission of instructor. Techniques of dance for musicals, comedies, operas, television, and stage and choreography for these forms.
- 4140 Internship in Dance.** Three credits. Prerequisite: Approval of chair or dance faculty. Students assigned to work with professional dance companies or arts centers. Pass/Fail.
- 4200 Women in Twentieth and Twenty-First Century Dance.** Three credits. Examines dance as a field whose content shaped the identity of women in the United States. Representation and objectification of women in dance as it evolved and changed throughout the twentieth century and into the twenty-first century.
- 4600 Theory and Practice I: The Body as the Instrument of Dance.** Three credits. Theory and practice of teaching dance as it pertains to the dancer's instrument—the human body. Acquaints the dance student with dance education, nutrition, body therapies, environmental effects on the human body, and the emerging area of dance medicine while training for classical ballet and modern dance.
- 4610 Theory and Practice II: Pedagogy for Ballet and Modern Dance.** Three credits. Prerequisites: 1000- and 2000-level course of ballet or modern dance. Theory and practice of teaching classical ballet and modern dance techniques based on sound anatomical and kinesiological principles.
- 4800 History of Dance.** Three credits. A survey of dance from primitive to the present with an emphasis on the style and techniques of dance as it was performed.
- 4950 Directed Studies.** Three credits. Prerequisites: Available only to students in Speech and Theatre who have completed 50 percent of their coursework in their major and have an overall GPA of 3.2 for their last 30 hours of study; permission of department required. Proposals must be submitted and approved by theatre and dance faculty the semester prior to the beginning of the semester of enrollment. Individualized intensive instruction for students to pursue research and creative activity in a specified area.
- 4990 Senior Seminar.** Three credits. Prerequisite: Successful completion of 75 credit hours and permission of department. A capstone to the dance student's undergraduate career and preparation for transition to the professional world or graduate study. Includes lectures, workshops, professional guest speakers, and discussion sessions. Students will complete various paper-based projects, a capstone research project, resume, and portfolio construction.

Developmental Studies

Note: All DSP 0700 courses are taught by Motlow State Community College faculty on the MTSU campus.

DSPW 0700 Basic Writing. Three credits. Prerequisite: Placement pretesting. Intensive practice in paragraph and sentence construction; intensive review of basics of spelling, grammar, and punctuation. Skills refined through individualized laboratory work.

DSPM 0700 Basic Mathematics. Three credits. Prerequisite: Placement pretesting. Intensive study of all mathematical operations with whole numbers, decimals and fractions, percent and equivalency, units of measure, word problems, geometry, graphs, elementary probability, and statistics.

DSPR 0700 Basic Reading. Three credits. Prerequisite: Placement pretesting. Intensive practice in identifying main ideas, sequencing, locating facts, using contextual clues, drawing conclusions, and making inferences.

Economics [ECON]

Economics (General)

2410 Principles of Economics, Macroeconomics. Three credits. As an aid to understanding modern economic society: economic concepts of national income and its fluctuations, inflation, unemployment, role of the banking system, monetary and fiscal policies, and international topics.

2420 Principles of Economics, Microeconomics. Three credits. As an aid to understanding modern economic society: economic concepts of consumer and firm behavior; the pricing of goods, services, and productive factors; international topics; and an overview of the American economy.

3210 The Financial System and the Economy. Three credits. Prerequisites: ECON 2410; junior standing. Basic introduction to the functions of financial institutions and markets in the conduct of domestic and international economic transactions. Within financial market context, focus on special role that money plays as an asset and a determinant of the price level, the cause of inflation and inflation's effects on interest rates and borrowing costs, and the influence of Federal Reserve actions (monetary policy) on money and interest rates.

3510 Intermediate Macroeconomic Theory. Three credits. Prerequisites: ECON 2410; junior standing. Analysis of national income, employment, and price levels. Monetary and fiscal policies; international economic relations.

3520 Intermediate Microeconomic Theory. Three credits. Prerequisites: ECON 2410 and 2420. Second semester of microeconomic theory following ECON 2420. Topics include consumer choice, the labor supply model, the life cycle model, choice under uncertainty, production and supply, the cost of production, perfect competition, monopoly, monopolistic competition, oligopoly, game theory, and the human capital model.

3540 Japanese Economy and Business. Three credits. Prerequisites: ECON 2410; junior standing. The Japanese economy and its social, physical, and trade environment in comparison with those in other countries, particularly the United States. May be used for credit toward the Global Studies minor.

3970, 3980 Cooperative Education. Three credits. (Same as FIN 3970 and 3980.) Prerequisite: Junior standing. Cooperative Education experiences provide students with opportunities for on-the-job training in conjunction with on-campus academics. These courses do not satisfy major or minor requirements. Interested students should contact the Career Development Center. Students will be selected for participation, and opportunities may be limited.

4100 Law and Economics. Three credits. Prerequisite: ECON 2420; junior standing preferred. Applies microeconomic theory to the analysis of legal rules and institutions. Examines the economics tools lawyers and experts use in analyzing antitrust issues. Topics include intellectual property rights, measuring compensatory damages in liability cases, current legal issues such as tort reform, the role of economics in bargaining and settlement, and antitrust law topics such as mergers and price-fixing.

4260 Financial Markets and Institutions. Three credits. (Same as FIN 4260.) Prerequisites: ECON 3210 with a minimum grade of C

(2.0); FIN 3010 or 3000. Examines the structure and functioning of our monetary-financial system. Emphasis on the institutional process of financial intermediation in the financial marketplace and the role that specific institutions and instruments play.

4440 International Economics. Three credits. Prerequisites: ECON 2410, 2420; junior standing. Differences between domestic trade and international trade, foundations of international trade, economic effects of free trade and restricted trade; mechanisms of international payments and structure of balance of payments; history and contemporary issues of trade policies and world monetary systems.

4470 Economic Development of the Third World. Three credits. Prerequisites: ECON 2410, 2420; junior standing. Conditions and problems of the less-developed countries; causes, processes, and consequences of economic development; introduction to basic growth models, development theories, and strategies for development. Economic as well as noneconomic factors studied.

4570 Managerial Economics. Three credits. Prerequisites: ECON 2420; MATH 1630 or 1810 or 1910; junior standing. Familiarity with time value of money, spreadsheet, and regression analysis helpful. Microeconomic theories in depth; emphasizes practical applications in economic decisions. Topics cover fundamental economic concepts, theory of demand, theory of production, theory of cost, optimization, forecasting, game strategy in oligopolistic rivalry, long-term investment, and regression analysis.

4600 Environmental and Natural Resource Economics. Three credits. Prerequisite: Junior standing preferred. Problems of environmental quality and natural resource scarcity from an economic perspective. Topics include interaction between the environment and the economy, benefits and costs of environmental regulation, use of incentives to achieve least-cost pollution control, international environmental issues such as global warming, the role of natural resources in the U.S. economy, problems associated with natural resource scarcity and depletion, and problems related to consumption of renewable resources.

4620 Econometrics and Forecasting. Three credits. Prerequisites: ECON 2410, 2420; MATH 1810 or 1910; junior standing. The application of statistical methods to economic problems; covers statistical inference, regression analysis in economics and finance, and an introduction to econometrics. Emphasis on applications to actual economic data and includes use of econometric software.

4650 Comparative Economic Systems. Three credits. Prerequisite: ECON 2410. Compares economic institutions and performance among nations; presents the historical and cultural context of economic evolution in selected nations; and examines the relationship between institutional arrangements and outcomes such as prosperity, liberty, and equality.

4660 History of Economic Thought. Three credits. Prerequisites: ECON 2410, 2420; junior standing. Background of modern economic thought; ancient economic thought; the main current of developing economic analysis through feudalism, mercantilism, and the physiocrats; Adam Smith and the classical economists; rebels and the neoclassical economists; twentieth-century contributions.

4700 Sports Economics. Three credits. Prerequisite: ECON 2410; junior standing preferred. Economic theories in the areas of public finance, labor markets, game theory, industrial organization, and price theory studied within the context of sports. Examines common misperceptions about sports-related statistical data and relates it to issues in the broader economy. Topics include benefits and costs of financing sports arenas, structure and competitiveness of sports leagues, antitrust exemptions, effects of title IX regulations,

labor bargaining and negotiations, wage and price determination. Explores issues in collegiate sports such as potential for crowding out other college programs (the prisoner's dilemma).

4890 Internship in Economics. One to three credits. Prerequisites: Junior standing and recommendation of advisor. Supervised work experience in cooperating business firms or governmental agencies together with specialized academic study relating to the work experience. Pass/Fail.

4990 Independent Study in Economics. One to three credits. Prerequisite: Junior standing. Problems for intensive study are chosen in joint consultation between student and instructor.

Economics (Labor Relations)

4390 Employee Benefits. Three credits. (Same as FIN 4390.) Prerequisite: Junior standing. Includes descriptive review and taxation, legislative, and administrative dimensions of the major components of employee benefit plans such as retirement systems, deferred compensation plans, health insurance, death benefits, disability benefits, paid and unpaid time off. Technical analysis and problem solving emphasized to develop applied skills. Social insurance and international benefits integrated.

4420 Labor and Human Resource Economics. Three credits. Prerequisites: ECON 2410 or 2420; junior standing. Current issues and theories, returns to training and education (human capital), earnings differences; union impacts and government regulation of labor relations and labor markets; human resource information system modeling, including applied PC or mainframe data analysis and integration of Internet information sources.

4490 Industrial Relations Legislation. Three credits. (Same as BLAW 4490 and MGMT 4490.) Prerequisite: Junior standing. Economic background and effects of government regulation of labor relations; emphasis on a detailed examination of the National Labor Relations Act as amended or expanded by the Labor Management Relations Act, the Labor Management Reporting and Disclosures Act, and Title 7 of the Civil Rights Act.

4510 Unions and Collective Bargaining. Three credits. (Same as MGMT 4510.) Prerequisite: Junior standing. The collective bargaining process: its evolution in the public and private sectors and its contemporary legal environment; compensation, institutional and administrative issues; strikes and impasse resolution procedures.

Economics (Public Finance)

3430 Public Finance. Three credits. (Same as FIN 3430.) Prerequisites: ECON 2410, 2420; junior standing. Economic foundations of federal tax and expenditure policies. Current issues in federal budget policy. Policy applications illustrating key concepts such as public goods, externalities, income distribution, tax incidence, tax equity, and allocative efficiency. Intergovernmental fiscal relations.

4310 Problems in Government Finance. Three credits. (Same as FIN 4310). Prerequisites: ECON 2410, 2420. Current issues in taxation, theory of income taxation, consumption taxes, property and wealth taxes. Advanced treatment of tax incidence, tax efficiency, income distribution, fiscal federalism, and state and local budget issues.

4400 Business and Government. Three credits. Prerequisites: ECON 2420; junior standing. The economics of public policy toward private business in the U.S. Many dimensions including economic theory, history, philosophical foundations of government, economic statistics, as well as applications of those disciplines to a wide variety of policy issues.

4500 Urban and Regional Economics. Three credits. Prerequisites: ECON 2410, 2420. Economic problems of urban communities, including problems resulting from population shifts to suburbia; urban planning; land utilization; revenue structures; urban renewal; transportation; problems of minority and poverty groups.

Elementary Education [ELED]

1000 Pedagogy Seminar. One credit. Introduction to computer technology used in elementary school classrooms. Students practice the skills specified by the State of Tennessee 21st Century Classroom guidelines.

3050 Creating Learning Environments K–6. Three credits. Prerequisites: FOED 1110 and 2110 and SOAR experience. Design, instruction, and evaluation of an integrated reflective curriculum in the elementary grades. Classroom experiences provided.

3070 Creating Learning Environments 5–8. Three credits. Prerequisites: FOED 1110 and 2110 and SOAR experience. The design, instruction, and evaluation of an integrated middle school curriculum with particular attention to the effect of physical, social, and emotional needs of the middle school student as they relate to middle school instruction. Classroom experiences provided.

3150 Mathematics Methodology. Three credits. Prerequisites: Admission to teacher education program; ELED 3050 or 3070; MATH 1010 or 1710, 1410, and 1420. Offers preparation to pre-service elementary and middle school teachers for teaching mathematics.

3300 Instructional Design and Technology in the Elementary School. Three credits. Principles of instructional design with an emphasis on the integration and use of instructional technology to promote effective classroom instruction. Two hours lecture and two-hour lab.

3330 Instructional Design and Technology in the Middle Grades, 5-8. Three credits. Principles of instructional design with an emphasis on the integration and use of instructional technology to promote effective classroom instruction. Two hours lecture and two-hour lab.

4000 Methods and Materials in the Teaching of Writing. Three credits. An in-depth exploration of elementary students' efforts to become writers. Specific strategies, appropriate assignments, and instructional goals as well as basic writing skills, all based on recent research, presented.

4050 Classroom Assessment. Two credits. Prerequisites: Admission to teacher education program; Interdisciplinary Studies majors must also complete ELED 3050 or 3070. Purpose of assessment and the relationship among planning, instruction, and assessment. Interpreting test scores and how those interpretations should be used.

4060 Methods of Teaching Social Studies. Two credits. Prerequisites: Admission to teacher education program; Interdisciplinary Studies majors must also complete ELED 3050 and 3070. Familiarizes students with methods, techniques, and strategies for the teaching of social studies in grades K–8.

4110 Directed Teaching, Grades K–8. Twelve credits. Full-day supervised teaching experience of 15 weeks duration in a public school classroom. Pass/Fail.

4260 Problems in Elementary Education. One to three credits. A problem-oriented course, on or off campus, planned and designed for individuals, a school faculty, school system, or other professional

groups, which will provide opportunities for in-service education related to assessed needs. Credit toward an undergraduate degree will be limited to six semester hours.

- 4350 Theory to Practice.** Three credits. Prerequisites: Admission to teacher education program; Interdisciplinary Studies majors must also complete ELED 3050; must have completed or be presently enrolled in all methods courses. Strategies and techniques for guiding the learning of elementary school children. Development and use of materials in elementary classrooms with emphasis on explanation and experimentation. Laboratory work and weekly seminar.
- 4400 Middle School Instruction.** Three credits. Prerequisites: Admission to teacher education program; ELED 3070. Strategies to teach children in the upper elementary and middle grades. Practicum experiences required.
- 4510 The Teaching Internship, Grades 1–8.** Nine credits. Supervised teaching available only to those with at least one year of paid teaching experience in the major in which endorsement is sought. Applicants must meet all prerequisites for student teaching.

Electronic Media Communication [EMC]

- 1020 American Media and Social Institutions.** Three credits. (Same as JOUR/RIM 1020.) The power of the mass media and its effect on social institutions and practices. Develops skills of qualitative and quantitative social science research in the area of mass communication processes; examines media as social, cultural, and economic institutions that shape the values of American society, its political dialogues, its social practices, and institutions.
- 2030 Visual Journalism Production.** Three credits. Prerequisites: EMC/JOUR 1020 and permission of department. Students shown how to gather information with words and pictures for the field of visual journalism by completing photojournalism assignments, producing images with still and video cameras, writing cutlines and voiceovers for images, producing images, using computer software to edit images and sound, and creating presentations for print and online media. **Lecture/lab, three-six contact hours per week.**
- 2410 Introduction to Electronic Media.** Three credits. Organization, structure and function, historical development, and social aspects. Designed to give the major, as well as the nonmajor, a general working knowledge of electronic media.
- 2500 Survey of New Media Communication.** Three credits. Developing systems and methods of new media message delivery. Explores cultural, social, ethical, historical, and legal challenges of new media.
- 3000 Introduction to Motion Pictures.** Three credits. (Same as JOUR 3000.) Prerequisite: Upper-division standing. The development and role of motion pictures in America, including the history of films and filmmakers, the influence of film on American culture, and film criticism.
- 3020 Writing for the Electronic Media.** Three credits. Prerequisite: Writing competency. Techniques of creating and writing for electronic media, including radio, television, and computer-generated programming for cable systems and studio production. Consideration of program design and technical limitations of media production for specific formats. Emphasis on readability of copy, writing style, time constraints, editing, and the integration of sound with graphic images or visual information.
- 3030 Electronic Media Advertising.** Three credits. Prerequisite: EMC 2410. Principles, techniques, and methods of electronic media advertising including commercial story boards and copywriting.
- 3040 Electronic Graphics for Television.** Three credits. Prerequisites: Admission to candidacy; EMC 3130. Two-dimensional computer-generated graphics for television. Emphasis on the aesthetics and techniques for operating systems for character and graphics generation. Develop skills in the successful compositing of these graphics with live action and videotape sequences. **Lecture/lab, three-six contact hours per week.**
- 3060 Writing for Digital Media.** Three credits. Prerequisite: JOUR/EMC 1020. Fundamental principles of writing interactively for specific audiences. Encourages students to explore content development; looks at creation of meaning in the new media while providing skills in content.
- 3110 Radio Station Operations.** Three credits. Prerequisites: EMC 2410; instructor approval. Theory and techniques of sound production, recording, microphones, taping, and board equipment. Analysis of creative efforts and responsibilities in writing, production, and direction. Laboratory required.
- 3120 Sight, Sound, and Motion.** Three credits. Prerequisites: EMC 1020; writing competency; EMC 2410, 2500, or admission to RI candidacy. Production elements and technology of the electronic media industry. Creative conceptualizations; elements of composition, the production process included. Basic visual and aural technology demonstrated.
- 3130 Television Production.** Three credits. Prerequisite: Admission to candidacy. Introduction to the techniques. Emphasis on the function and operation of the primary tools including video, audio, and lighting to develop the student's awareness and understanding of proper studio procedure. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3140 Multi-Camera Directing and Producing.** Three credits. Prerequisites: Admission to candidacy; EMC 3130. Focuses on the duties and responsibilities of the television studio director. Emphasis on actual production and directing of video material. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3150 Single-Camera Directing and Producing.** Three credits. Prerequisites: Admission to candidacy; EMC 3130. Techniques of video field production. On-location shooting of features and mini-documentaries; editing techniques, coverage, lighting, sound, and graphics. **Lecture/lab, three-six contact hours per week.**
- 3200 Still Digital Imaging.** Three credits. (Same as PHOT 3200.) Prerequisites: Admission to candidacy; PHOT 2050 and instructor approval; must have some working knowledge of the Macintosh computer system. Computerization of traditional film images and use of digital cameras allows student to use different software programs to manipulate photographic images. Ethics and law discussed along with techniques and hands-on analysis of this new medium. **Lecture/lab, three-six contact hours per week.**
- 3210 New Media Video Production.** Three credits. Prerequisite: EMC 2030, 3120, or 3200. Digital video production for the Web, cell phones, and other new media venues. Explores transformations inherent in the digital domain and the associated social and cultural ramifications. Students will create digital productions that reflect these concepts. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3300 Introduction to Digital Animation.** Three credits. Prerequisites: Admission to candidacy; ART 1610 or 1620; CSCI 1150; or permission of instructor. Two- and three-dimensional computer data and animation. Emphasis on the aesthetics and techniques for building, lighting, assigning surface attributes, and rendering of three-dimensional models to be used in designing and producing three-dimensional computer-generated animations. Includes a broad survey of the process and techniques involved with creat-

ing electronic media quality three-dimensional animations and techniques and aesthetics incorporated into traditional methods of animations for contrast and comparison. **Lecture/lab, three-six contact hours per week.**

- 3310 Intermediate Digital Animation.** Three credits. Prerequisites: Admission to candidacy; EMC 3300. Continuation of 3300 for the development of two- and three-dimensional computer data and animation. Further understanding of aesthetics and techniques for building, lighting, assigning surface attributes, and rendering of three-dimensional models, to be used in designing and producing three-dimensional computer-generated animations. Introduction to the creation and modification of customized lighting models and the development of customized surface and bump-mapped textures as well as the techniques involved in the compositing of live-action videotape, sound, and computer-generated images. **Lecture/lab, three-six contact hours per week.**
- 3320 Introduction to Digital Compositing.** Three credits. Prerequisites: ART 1610 and CSCI 1150. History, techniques, and applications of compositing in the areas of film, video, and multimedia production. Broad survey of process and techniques involved with creating composites. Techniques and aesthetics incorporated into traditional methods of compositing for contrast and comparison. Frequent review and discussion of current work from industry will occur in the form of videotape and DVD presentations. **Lecture/lab, three-six contact hours per week.**
- 3410 Electronic Media News Writing.** Three credits. Prerequisite: Admission to candidacy. Stresses reporting, writing, and presenting radio news. The history, philosophy, and regulation of electronic media news. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3420 Corporate Video.** Three credits. Prerequisite: EMC 3120 or permission of instructor. Focuses on the techniques and applications of television production for business communications and video publishing. Emphasis on writing, program design and objectives, planning and production of television materials. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3460 Media and Messages.** Three credits. Communication situations, communication needs analysis, and the application of media in solving communication problems. Involves theoretical and practical application of mass communication theories.
- 3499 Electronic Media News Videography and Editing.** Three credits. Prerequisite: EMC 3410. Essential production techniques and applied technical skills necessary to arrange, shoot, edit, and produce a television news story in the field. All facets of electronic media news field production covered, including camera work, lighting, audio, and editing. **Lecture/lab, three-six contact hours per week.**
- 3500 Electronic Media News Reporting and Producing.** Three credits. Prerequisites: Admission to candidacy; EMC 3410. Theory and practice in the gathering, editing, and writing of news for electronic media. Attention given to on-the-air presentation. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3510 Mass Media and American Culture.** Three credits. (Same as JOUR 3510.) Prerequisite: Upper-division standing. Development of American journalism and the mass media from Colonial times to the present, including the role and influence of mass media on American culture, technical advances, and contributions of individual personalities.
- 3570 Broadcast Announcing/Performance.** Three credits. Prerequisite: Admission to candidacy. Responsibilities and skills required of the individual performer in the preparing, announcing, and narrating of various types of materials for television and radio. **Lecture/lab, three-six contact hours per week.**
- 3580 Broadcast Practicum.** One to three credits. Prerequisites: Admission to candidacy; junior standing; permission of instructor. Practical experience in an on-campus mass communication setting within the College of Mass Communication. A minimum of 75 hours of work will be required for each hour of credit. **Note:** Total university credit for practicum and internship courses cannot exceed 6 credits.
- 3650 Free Expression, Mass Media, and the American Public.** Three credits. (Same as JOUR/RIM 3650.) A general introduction to the issues surrounding free expression and its relationship to mass media in contemporary America. A comprehensive analysis of the history, philosophies, cases, and controls associated with freedom of expression.
- 3740 Advanced Electronic Media News Reporting and Producing.** Three credits. Prerequisites: Admission to candidacy; EMC 3410 and 3500. Theory and practice of television journalism, including use of electronic news-gathering equipment, evaluating and processing news for broadcast, and delivery of television news. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 4000 Broadcast Internship.** One to three credits. Prerequisites: Admission to candidacy; senior standing; permission of sequence coordinator or instructor. Practical experience for advanced students in a professional setting. A minimum of 15 hours of work per week plus other assignments will be required. **Note:** Total university credit for internship and practicum courses cannot exceed 6 credits. Pass/Fail. Can be repeated with different employer for one to three credits with permission of instructor.
- 4010 Electronic Media Sales.** Three credits. Prerequisite: EMC 2410. Theories of marketing and selling the intangible products of the electronic media industries. The fundamentals of positioning, theory and use of ratings, and local, regional, and national buying and selling strategies presented.
- 4020 Advanced Scriptwriting.** Three credits. Prerequisites: EMC 1020; writing competency; EMC 3020 or permission of instructor. Scriptwriting guidelines, character development, plot design, and creation of storylines for contemporary television genre programs. Writing of original scripts conforming to the genre taught required. Topics will vary by offering. May be repeated for up to 9 hours credit for different topics.
- 4060 Photojournalism.** Three credits. (Same as PHOT 4060.) Prerequisites: Admission to candidacy; PHOT 3120 and 3810 or consent of instructor. Principles and practices of photography, including documentary, news and feature portraiture, photo stories and essays, and photo layout. Emphasis on newspaper assignments, participation in campus publications, portfolio editing and production, and internship preparation. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 4140 Electronic Media Programming.** Three credits. Prerequisite: EMC 2410. Development of techniques, program organization, audience analysis, recording, and directing through projects. Provides practical conceptual knowledge of the problems and procedures followed in planning and producing programming.
- 4150 Advanced Television Production.** Three credits. Prerequisite: EMC 3140. Preparation and development of scripted and unscripted television programming; principles and aesthetics of production and directing. **Lecture/lab, three-six contact hours per week.**
- 4210 Mass Communication and Society.** Three credits. (Same as JOUR 4210.) Prerequisite: Junior standing. Theories of the process of mass communication, how media affect society, the evolution within a social and cultural context, ethical and social dimensions. Extensive reading in theory, history, and research.

- 4250 Mass Media Law.** Three credits. (Same as JOUR 4250.) Prerequisites: EMC 1020; junior standing. Examination of legal guarantees and restrictions on the flow of information using the case study method. Focus on libel, privacy, obscenity, and the special restrictions placed on advertising, broadcasting, cable television, and the Internet.
- 4300 Advanced Digital Animation.** Three credits. Prerequisites: Admission to candidacy; EMC 3310. Continuation of 3310 for the development of two- and three-dimensional computer data and animation. Further understanding of the aesthetics and techniques for visually communicating information for television journalism, advertising, and entertainment. Serves as a final classroom laboratory in preparation for the required internship and offers greater understanding of complete animation production and more complex methods for the integration of composited computer-generated images with live-action videotape and sound. **Lecture/lab, three-six contact hours per week.**
- 4430 Electronic Media Management.** Three credits. Prerequisite: EMC 2410. An analysis of the problems involved in operating an electronic media facility including personnel, internal control systems, business ethics, community relations, sales, and promotion. Involves case study method.
- 4460 Digital Communication Applications.** Three to six credits. Prerequisite: EMC 3060 or permission of instructor. Solving communication problems through digital communication applications. Involves working with outside clients, forming media companies, and the production of mediated materials. May be repeated for a total of 6 credit hours. **Lecture/lab, three-six contact hours per week.**
- 4500 International Cinema.** Three credits. Explores how culture and the contours of history influence filmmaking. Illustrates how foreign filmmakers both emulate and challenge mainstream U.S. fare.
- 4610 Visual Communication for the Print Media.** Three credits. Increases visual literacy; provides knowledge of our visual heritage, seeks to enrich the judgment of those responsible for making decisions about the use and display of photographs for publication. Also includes photographic processes and handling of pictures for publication among particular audiences.
- 4660 Mass Media Research.** Three credits. (Same as JOUR 4660.) Prerequisites: Admission to candidacy; junior standing. Overview of contemporary research methods, analysis, and evaluation of current research, and design and execution of a study. Emphasis on public opinion and media research.
- 4790 Global News and World Media Cultures.** Three credits. (Same as JOUR 4790.) Prerequisite: Junior standing. Systems and philosophies associated with gathering international news and news coverage in different regions. Looks at global communication systems and ownership; examines how cultures shape news and the role of the individual in reporting news internationally. Includes discussion of development issues and role of global advertising and public relations.
- 4800 Seminar in Media Issues.** Three credits. (Same as JOUR 4800.) Prerequisite: Junior standing. Examination and critical evaluation of issues relevant to the operation and functions of mass media including their relationships to each other and to government, advertisers, consumers, and other “publics.” Can repeat for 6 hours with different topic.
- 4810 Global Comparative Media Systems.** Three credits. (Same as JOUR 4810.) Prerequisites: JOUR/EMC 4790 or permission of instructor and junior standing. A close comparative study of chosen media systems in regions of the world. Examines print, broadcast, entertainment, and new media in Western and Eastern Europe, Asia and the Pacific Rim Region, the Middle East, Africa, and the Americas. Media interactions with an influence on the geographic, demographic, linguistic, cultural, economic, and political structures of countries.
- 4850 Ethics and Mass Communication.** Three credits. (Same as JOUR 4850.) Prerequisite: Junior standing. Examination of ethical concerns of media practitioners, illuminated by study of selected current ethical issues and an overview of the cultural and philosophical bases of a socially responsive mass media.
- 4900 Individual Problems in Mass Communication.** One to three credits. (Same as JOUR 4900.) Prerequisite: Admission to candidacy. Provides opportunities for individually designed problems, work experiences, or research projects related to the development of professional competencies in a major field of study. Requires approval of instructor.
- 4910 Advanced Seminar - Digital Imaging.** Three credits. Prerequisites: Admission to candidacy; permission of department only. Practical experience in the conceptualization, pre-production preparation, and production of digital imaging materials. Integration of theory and skills from other EMC/RIM courses. Advanced compositing techniques, particle generation, and advanced modeling techniques are probable topics. Topics will vary by semester offering. **Can be repeated with different topic. Lecture/lab, three-six contact hours per week.**
- 4920 Advanced Seminar - Electronic Media Journalism.** Three credits. Prerequisites: Admission to candidacy; permission of department only. Practical experience in the conceptualization, preparation, and production of a specific news program format. Integration of theory and skills from other EMC/RIM courses. Documentary, political analysis, sports, and newscasting are probable topics. Topics will vary by semester offering. **Can be repeated with different topic. Lecture/lab, three-six contact hours per week.**
- 4930 Advanced Seminar - Electronic Media Management.** Three credits. Prerequisites: Admission to candidacy; permission of department only. Practical experience in the conceptualization, preparation, and management of a specific program format. Integration of theory and skills from other EMC/RIM courses. Programming, station operations, and sales are probable topics. Topics will vary by semester offering. **Can be repeated with different topic. Lecture/lab, three-six contact hours per week.**
- 4940 Advanced Seminar - Electronic Media Production.** Three credits. Prerequisites: Admission to candidacy; permission of department only. Practical experience in the conceptualization, pre-production preparation, and production of a specific program format. Integration of theory and skills from other EMC/RIM courses. Sports, music, drama, and editing are probable topics. Topics will vary by semester offering. Can be repeated for 6 hours with different topic. **Lecture/lab, three-six contact hours per week.**

Engineering Technology [ET]

- 1210 Introduction to Metals and Metallurgy.** Three credits. Origin and behavior of metals. Extractive metallurgy—reduction of metallic ores, production of stock shapes, identification and selection of ferrous and nonferrous metals. Physical metallurgy—mechanical and physical properties, crystalline structure, phase diagrams, hardening and tempering, isothermal diagrams, metallurgy of welds, service problems, casting processes. Exercises in the use of basic welding, foundry, and metallurgical testing equipment. Two hours lecture and three hours laboratory.
- 1310 Basic Technical Drawing and Sketching.** Two credits. Not open to students who take CMT 1300. Technical drawing and sketching theory and practice including orthographic projection, drafting

conventions, lettering, descriptive geometry, sections, auxiliary views, and size descriptions employing mechanical drawing and sketching activities. Recommended for students with less than one unit of high school drawing. DOES NOT SATISFY REQUIREMENTS FOR MAJOR. Two hours lecture and four hours laboratory.

- 1840 Engineering Fundamentals.** Three credits. Broad introduction to basic laws of fluid mechanics, thermodynamics, materials science, and electricity, including topics on power production by conventional and developmental techniques and introduction to computer-aided problem solving. Employment in the engineering fields addressed.
- 2310 Computer-Assisted Drafting/Design I.** Three credits. Prerequisite: ET 1310 or one year of high school drafting. Technical drafting concepts utilizing personal computers, plotters, and appropriate CAD software. Two hours lecture and three hours laboratory.
- 2920 Industrial Orientation Internship.** One to three credits. Prerequisite: Consent of the instructor. Provides industrial exposure for students with little or no industrial work experience. Students will be placed in an acceptable company for introductory industrial experiences. Arrangement for this course must be made in advance. Pass/Fail.
- 2930 Cooperative Education Experience I.** Three credits. Prerequisite: Permission of department. Provides students with opportunity for on-the-job training in conjunction with on-campus academic experiences. Students will participate in professional growth seminars. Pass/Fail.
- 2940 Cooperative Education Experience II.** Three credits. Prerequisite: ET 2930; permission of department. Continuation of ET 2930. Pass/Fail.
- 3210 Machine Tool Technology.** Three credits. Prerequisite: ET 1310 or ET 2310. Metals, their sources, manufacture, and properties; basic metalworking hand tools, measurements; layout; drawing and safety. Exercises in the use of the basic machine tools in machine shop work. Lecture and laboratory. Two hours lecture and three hours laboratory.
- 3220 Advanced Metalwork.** Three credits. Techniques, equipment and procedures, advantages and disadvantages of current metal-casting processes used in industry. Laboratory exercises in sand molding and casting, the full mold process, investment casting, and permanent mold casting including pattern design and construction, mold making, metal melting and handling. Guest lecturer(s). Plant tour(s). Two hours lecture and three hours laboratory.
- 3260 Manufacturing Processes and Materials.** Three credits. An analysis of machines, tools, processes, and materials used in production.
- 3360 Computer-Assisted Drafting/Design II.** Three credits. Prerequisite: CMT 3320 or ET 2310. Utilizes PC and CAD software to develop skills in the creation and analysis of mechanical solid models for design and production purposes. Includes the use of shading and rendering to enhance three-dimensional model display and the extraction of two-dimensional engineering drawings. Two hours lecture and three hours laboratory.
- 3601 Electrical Circuit Analysis I.** Three credits. Prerequisite: ET 1840. Corequisite: MATH 1910. Fundamentals of electrical circuits. Addresses basic circuit components and quantities. Emphasis on DC circuit calculations and theorems. Uses lab equipment to build and test DC circuits. Two hours lecture and three hours laboratory.
- 3602 Electrical Circuit Analysis II.** Three credits. Prerequisite: ET 3601 and MATH 1910. Addresses basic circuit components and quantities of AC circuits. Introduces three-phase circuits and transformers. Emphasis on AC circuit calculations and theorems. Uses lab equipment to build and test AC circuits. Two hours lecture and three hours laboratory.
- 3610 Introduction to Electricity and Electronics.** Four credits. Prerequisite: MATH 1710 or 1730. Orientation to direct current, alternating current, magnetism, filters, and semiconductor devices. Rectifier-filters and basic transistor amplifiers are also examined as representative electronic circuits. Use of meters, oscilloscopes, and other test instruments are stressed in the laboratory. Three hours lecture and three hours laboratory.
- 3615 Principles of Electricity.** Three credits. Prerequisite: MATH 1710 or 1730. An overview of basic electrical circuits and systems, direct current circuits, alternating current circuits, and electrical devices and control schemes. Electrical motors, relays, solenoids, transformers, and power supplies examined. National Electric Code also examined. For students enrolled in Construction Management or Concrete Industry Management. Laboratory exercises stress the use of test instruments and the construction of basic electrical circuits. Two hours lecture and three hours laboratory.
- 3620 Digital Circuits Fundamentals.** Three credits. Prerequisite: ET 3601 or permission of instructor. Provides thorough coverage of basic digital electronic circuits analysis and design. TTL and CMOS families examined. Number systems, mapping, and minimization techniques covered. Digital design using random logic and programmable logic devices (FPGAs and CPLDs). Two hours lecture and three hours laboratory.
- 3630 Electronics.** Three credits. Prerequisite: ET 3602 or permission of instructor. Introduction to analog electronics. Defines basic parameters and theory of operation of discrete semiconductor devices. Introduces fundamentals of electronic circuits analysis and design. Applications illustrate use and laboratory projects provide hands-on experience. Two hours lecture and three hours laboratory.
- 3640 Digital Circuits Design.** Three credits. Prerequisite: ET 3620; corequisite: ET 3630 or permission of instructor. In-depth study of sequential circuit analysis and design that includes state machine design. Emphasis on the use of available development boards using both FPGAs and CPLDs and their respective CAD tools. PLDs programmed using latest relative CAD systems. Two hours lecture and three hours laboratory.
- 3650 Introduction to Microprocessors.** Three credits. Prerequisites: CSCI 1170 and ET 3620. Covers architecture of microcontrollers and microprocessor-based systems and their related components. Machine language programming extensively used to solve problems and demonstrate the relationship of the microprocessor and its supporting peripherals. Basic microcomputer architecture also emphasized. Two hours lecture and three hours laboratory.
- 3660 Communication Electronics.** Three credits. Prerequisite: ET 3630 or permission of instructor. Theory of electronic circuits as applied to communication; special electronics circuits required in communications systems. Testing theory and procedures. Various methods of electronic communications. Testing and evaluation of electronic circuits. Two hours lecture and three hours laboratory.
- 3670 Computer-Assisted Printed Circuit Board Design.** Two credits. Prerequisites: ET 3620 and 3630 or permission of instructor. Utilizes computer software to develop skills in creating schematic and printed circuit board artwork for use in printed circuit board production. Includes plotting, printing, and generating all necessary documents required for fabrication. One hour lecture and three hours laboratory.

- 3810 Engineering Thermodynamics.** Three credits. Prerequisites: PHYS 2010/2111 or 2110/2111; MATH 1910. Basic concepts of engineering thermodynamics, properties and thermodynamic states, work, heat, first law, second law, entropy, ideal gases, and analysis of conventional power and refrigeration systems.
- 3830 Statics.** Three credits. Corequisites: MATH 1910 and PHYS 2010/2011. Fundamental concepts and conditions of static equilibrium; their application to systems of forces and couples acting on rigid bodies; and the calculation of centers of gravity, centroids, and moments of inertia.
- 3840 Dynamics.** Three credits. Prerequisite: ET 3830. Rectilinear curvilinear, and rotary motion of rigid objects both with and without consideration of the unbalanced force causing the motion. Application of the principles of work, energy, impulse, and momentum to the solution of engineering problems.
- 3860 Strength of Materials.** Three credits. Prerequisite: ET 3830. The mechanics of materials emphasizing the analysis and design of statically determinate beams, columns, and structural members in torsion and application of the three moment equation to statically indeterminate beams.
- 3910 Introduction to Operations Management.** Three credits. Prerequisite: Junior standing or permission of instructor. A foundation course in manufacturing and service operations management. Problem-solving applications emphasized.
- 3920 Industrial Internship I.** Three credits. Prerequisite: Consent of instructor. Student is employed by an acceptable industry for industrial experience. Credit given for actual work with employer. Arrangement for this course must be made in advance. Pass/Fail.
- 3930 Industrial Internship II.** Three credits. Prerequisite: ET 3920. A continuation of Internship I. Same stipulations apply. Pass/Fail.
- 3950 Metrology.** Three credits. Overview of methods and procedures of precision measuring and gauging as used in inspection and quality control by industry. Two hours lecture and three hours laboratory.
- 3960 Industrial Quality Technology.** Three credits. Prerequisite: Junior standing or consent of instructor. Covers breadth and some depth in quality technology. Explores history of quality, present techniques, and future predictions. Covers six-sigma methodology at the “greenbelt” level. Certification after industry project. Lecture.
- 3970 Cooperative Education Experience III.** Three credits. Prerequisite: ET 2940; permission of department. Continuation of ET 2940. Pass/Fail.
- 3980 Cooperative Education Experience IV.** Three credits. Prerequisite: ET 3970; permission of department. Continuation of ET 3970. Pass/Fail.
- 4230 Advanced Machine Tool Technology.** Three credits. Prerequisite: ET 3210. Taper turning, boring and thread chasing, and calculations of screw threads and other operations. Gear terminology and calculations; practice gear cutting on the milling machine; use of index head. Two hours lecture and three hours laboratory.
- 4280 Computer-Aided Manufacturing: Numerical Control (NC).** Three credits. Prerequisites: ET 2310 and 3210 or consent of instructor. The role of NC in today’s manufacturing environment; machines and machine control systems of a typical installation. Justifying NC equipment. Emphasis on writing and debugging programs for a three-axis milling machine and a two-axis turning machine utilizing both computer numerical control and computer-aided part programming. For those with little experience or seeking to broaden their knowledge. Two hours lecture and three hours laboratory.
- 4330 Advanced Computer-Aided Drafting.** Two credits. Prerequisite: ET 3360 or permission of instructor. Topics include customizing menus, 3-D concepts and surface modeling, AutoLisp, rendering, and slide shows. Interactive computer drafting and design using advanced AutoCAD software and add-ons. Primarily for students who want to increase their capabilities using CAD. One hour lecture and three hours laboratory.
- 4340 Design of Machine Elements.** Three credits. Prerequisite: ET 3860. Analytical design methods. Stress analysis, working stress, combined stresses, failure theories, fatigue failure. Design techniques for shafts, fasteners, gears, bearings, and belt and chain drives. Includes a design project.
- 4420 Industrial Safety.** Three credits. Safety and health in the manufacturing, construction, and utilities industries, including pertinent laws, codes, regulations, standards, and product liability considerations. Organizational and administrative principles and practices for safety management and safety engineering, accident investigation, safety education, and safety enforcement.
- 4440 Fire Safety.** Three credits. Fundamental methods of fire protection, prevention, and suppression. Includes characteristics and behavior of fire, fire hazards of materials and buildings, codes and standards for fire prevention and protection, fire protection equipment and systems, and fire fighting forces and how they operate.
- 4450 Industrial Hygiene.** Three credits. Corequisite: ET 4420 or permission of instructor. An introduction to industrial or occupational hygiene—that science and art devoted to the anticipation, recognition, evaluation, and control of those environmental factors or stresses, arising in or from the workplace, which may cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or citizens of the community.
- 4490 Topics in Industrial Technology.** One to six credits. Subject topics offered as required to meet the needs of the class.
- 4590 Manufacturing Automation Systems.** Three credits. Prerequisite: Junior status or consent of instructor. Technical, human, and business aspects of modern automation system. Includes automation controls, levels of control and major components/subsystems, object-based software components, intelligent actuators and sensors, emerging trends, flexible manufacturing systems (FMS), computer integrated manufacturing (CIM), industrial systems and supply chain applications, organizational approaches, and automation justification.
- 4600 Programmable Logic Controllers.** Two credits. Prerequisite: ET 3602 or permission of instructor. Introduction to programmable logic controllers (PLCs). Selection, operation, and troubleshooting. Ladder diagrams and programming of PLC emphasized. One hour lecture and three hours laboratory.
- 4610 Instrumentation and Controls.** Three credits. Prerequisites: ET 3620 and 3630. Devices and techniques used in the measurement of physical parameters. Consideration of accuracies and sources of error, identification of typical measurements, sensors and transducers, control stability and response. Two hours lecture and three hours laboratory.
- 4630 Local Area Networks.** Three credits. Provides the necessary foundation experience to understand the design, implementation, and management strategies of local and wide area networks (LAN/WAN). Data Communication Standards and protocol, fundamentals included. Will include lecture, laboratory activities, and a LAN design requirement. Two hours lecture and three hours laboratory.
- 4640 Industrial Electricity.** Three credits. Prerequisite: ET 3602 or permission of instructor. AC power theory and circuits for industrial

applications, polyphase systems, power factor correction, and transformers. Theory, applications, and selection of motors and generators. Industrial motor control and power transmission. Two hours lecture and three hours laboratory.

- 4660 Microprocessor Interfacing.** Three credits. Prerequisites: ET 3640 and 3650 or permission of instructor. Emphasis on interfacing various analog and digital devices to a microcontroller/microprocessor-based system: memory expansion, A/D and D/A, display devices, keyboards and keypads, electromechanical devices, and sensors. PLDs (FPGAs/CPLDs) interfaced to facilitate rapid prototyping of digital system design. Two hours lecture and three hours laboratory.
- 4670 Microprocessor Design.** Three credits. Prerequisite: ET 4660 or permission of instructor. Advanced microprocessor system design. Emphasis on the design of core CPUs and imbedded components using high-density FPGA/CPLD development boards. Industrial applications of microprocessor-based systems. Two hours lecture and three hours laboratory.
- 4700 Transform Circuit Analysis.** Three credits. Prerequisites: ET 3602 and MATH 1920 or permission of the instructor. Advanced network analysis stressing network theorems and solutions of time and frequency-domain problems with the use of Laplace Transforms.
- 4701 Industrial Topics.** One to six credits. Problems in any one of a variety of areas to meet the needs of the class.
- 4710 Professional Development Seminar.** One credit. Prerequisite: Junior status. Orientation to industrial job opportunities, placement practices, interview techniques, and preparation of application materials (resume, cover letter, and portfolio if warranted). Guest lecturers, films, and student and faculty presentations arranged in seminar fashion. One-hour lecture weekly.
- 4790 Advanced Problems in Technology.** Three credits. Prerequisite: Completion of all courses in a given area or approval of instructor. For the advanced student who wishes to work on a designated problem in a specific area. Works on an individual problem or project independently under the guidance of an instructor.
- 4801- Senior Problem in Engineering Technology.** One to three credits. All required freshman-, sophomore-, and junior-level courses in all disciplines have to be completed before registering for this course. Engineering situations are solved by experimental means. Student must have experimental approach, gather data, interpret results, and prepare a formal technical written and oral report.
- 4801 Computer Engineering Technology.** Prerequisites: ET 4670; CSCI 3160.
- 4802 Electro/Mechanical Engineering Technology.** Prerequisites: ET 3650, 3860, 4610, and 4860.
- 4803 Mechanical Engineering Technology.** Prerequisites: ET 3860, 4340, and 4815.
- 4804 Design Engineering Technology.** Prerequisites: ET 3840, 3860, and 4340.
- 4815 Heating, Ventilation, and Air Conditioning.** Three credits. Prerequisite: ET 3810 or permission of instructor. Design and operation of heat and mass transfer systems which produce the needed environments for manufacturing operations, industrial processes, and human comfort. Systems that use mechanical equipment such as pumps, blowers, fans, compressors, and heat exchangers found in fields such as air conditioning, low temperature metallurgy, food preservation, chemical processing, and industrial manufacturing covered. Two hours lecture and three hours laboratory.
- 4830 Vibration.** Three credits. Prerequisite: ET 3840. Provides a broad-based background in vibration analysis and introduces present practices. Topics include free, damped, and forced vibrations with

one degree of freedom; vibration isolation; free vibration with two degrees of freedom; and introduction to matrix formulation. Two hours lecture and three hours laboratory.

- 4850 Fluid Power.** Three credits. Prerequisites: ET 1840, 3810. Systems and the basic components that make up these systems, including hydraulic, pneumatic, and fluidic. Emphasis on understanding the language and graphic symbols associated with fluid power, the performance characteristics of system components, and problem solving. Two hours lecture and three hours laboratory.
- 4860 Robotics.** Three credits. Prerequisites: ET 4850; MATH 1910; CSCI (3 hours). Fundamentals of robots. Types of robots, types of controls, the prime movers, the application of robots in the industrial environment, and problem solving. Two hours lecture and three hours laboratory.
- 4900 Productivity Strategies.** Three credits. Prerequisite: ET 3910 or equivalent. Analysis, design, and implementation of productivity strategies and productivity improvement programs for a wide variety of organizations. Touches a spectrum of disciplines such as work design, quality, design engineering, and employee involvement. Includes lean manufacturing with certification available after successful industry project.
- 4915 Technical Project Management and Soft Skills.** Three credits. Senior standing or permission of instructor. Project management as sanctioned by the International Project Management Institute and how to assess and boost emotional intelligence or soft skills. Student successfully completing course will earn 20 Professional Development Units (PDUs) issued by the International Project Management Institute.
- 4920 Plant Layout and Materials Handling.** Three credits. Prerequisites: ET 2310 and 3910. An overview of facility planning including equipment selection, work flow analysis, activity relationship analysis, and plant layout for product, process, and JIT requirements. Teams assigned actual projects in industry. CAD layout presentations to industry management required.
- 4970 Engineering Economy.** Three credits. Prerequisite: Junior standing or permission of instructor. Development of capital budgets. Justification of capital projects using time value of money concepts. Replacement analysis. Review of justification of actual capital projects and computer applications.
- 4990 Industrial Engineering Systems.** Three credits. Prerequisite: ET 3910. System design of work tasks including establishing time standards by time and motion study and work sampling; ergonomic design for integration of the human into the work task environment. Scientific methods supplemented by quality considerations with emphasis on statistical quality control (SQC). Computer software used for design and analysis.

English [ENGL]

General Studies English Courses

- 1008 Writing for English as Second Language (ESL) Students.** Four credits. Open only to students whose native language is not English. Prerequisite to ENGL 1010 for ESL students who do not perform satisfactorily on diagnostic test given by the department. Introduces the international student to the process of English composition. Three lecture hours and two one-half hour lab sessions. **Does not fulfill General Education English requirement.**
- 1009 Introduction to University Writing.** Three credits. An introduction to the practices of university writing. Required for students whose ACT English scores are 15–18 or whose writing assessment indi-

cates placement. Emphasis on developing rhetorical knowledge; critical thinking, reading, and writing skills; understanding of the processes of writing; and knowledge of conventions. **Does not fulfill General Education English requirements.**

1010 Expository Writing. Three credits. The first General Education English course. Emphasis on learning to adapt composing processes to a variety of expository and analytic writing assignments. Minimum grade of C- required for credit.

1020 Research and Argumentative Writing. Three credits. Prerequisite: ENGL 1010. The second General Education English course. Emphasis on analytic and argumentative writing and on locating, organizing, and using library resource materials in the writing. Minimum grade of C- required for credit.

2020 Themes in Literature and Culture. Three credits. Prerequisites: ENGL 1010 and 1020. Traces a specific theme or idea through a number of literary texts that reflect different historical and cultural contexts. Subject will vary.

2030 The Experience of Literature. Three credits. Prerequisites: ENGL 1010 and 1020. The reading of a variety of literary types which illuminate themes and experiences common to human existence.

2550 Introduction to Peer Tutoring in Writing: Theory and Methods. Three credits. Prerequisite: B or better in ENGL 1020 or permission of the instructor. Techniques of tutoring with a variety of writers and genres and the theoretical and practical components of writing center work with a focus on how collaboration, composition, and learning theories and methods can be applied to tutoring in college as well as high school and middle school settings.

English Upper-Division Course Offerings

Prerequisites: Completion of 1000- and 2000-level English requirements with a grade of C- or better.

3000 Introduction to Literary Studies. Three credits. An introduction to the study of literature. Focus on strategies for sophisticated reading, literary genres, literary criticism and research. **Required for English majors and minors.**

3010 British Literature I. Three credits. Prerequisite: ENGL 3000 with a grade of C- or better. Survey of British literature from the Anglo-Saxon period through the seventeenth century. Emphasis on literary periods and genres; major writers, schools, and movements; and on literary analysis of significant works. **Required for English majors.**

3020 British Literature II. Three credits. Prerequisite: ENGL 3000 with a grade of C- or better. Survey of British literature in the eighteenth, nineteenth, and twentieth centuries. Emphasis on literary periods and genres; major writers, schools, and movements; and on literary analysis of significant works. **Required for English majors.**

3030 Introduction to American Literature. Three credits. Prerequisite: ENGL 3000 with a grade of C- or better. Open only to majors. Examines from the beginning to the present America's literary history, themes, and genres with additional focus on critical approaches and research. **Required for English majors.**

3110 English Literature: The Medieval Period. Three credits. A reading of selected works from Old English literature, especially *Beowulf*, and Middle English literature, with emphasis on *Sir Gawain and the Green Knight* and Malory's *Le Morte d'Arthur* and medieval drama.

3120 English Literature: The Sixteenth Century. Three credits. Readings in the major authors (More, Sidney, Spenser, Shakespeare,

Jonson, Donne) and genres (prose fiction, romance, epic, sonnet, lyric). Effects of cultural, political, and religious influences on the literature.

3130 English Literature: The Seventeenth Century. Readings in the major authors (Bacon, Jonson, Donne, Herbert, Herrick, Marvell, Crashaw, Vaughan, Milton) and genres (essay, epic, lyric, sermon). Effects of cultural, political, and religious influences on the literature.

3135 Introduction to Shakespeare. Three credits. Focuses on Shakespeare's major plays which will be considered both as products of their author's time and as enduring cultural artifacts. Special attention will be given to Shakespeare's development as a dramatist and to his depiction of character, theme, and imagery.

3160 English Drama: 1475-1642 (excluding Shakespeare). Three credits. Plays written by Shakespeare's predecessors, contemporaries, and immediate successors.

3210 English Literature: Restoration and Eighteenth Century. Three credits. English literature 1660-1800 emphasizing writings which reflect or influenced historical and literary developments.

3220 English Literature: 1790-1850 Three credits. A definition of English Romanticism and a study of works—mainly poems—by Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats.

3230 English Literature: The Victorian Period. Three credits. The literature of England, 1830-1900. Emphasis on poetry and the novel.

3300 Native American Literature. Three credits. Introduces oral and written literature of native America in its cultural, historical, and aesthetic contexts, with special emphasis on fiction, poetry, and autobiography.

3305 Early American Literature. Three credits. A survey of American literature from the first European encounters with the New World to the beginning of the nineteenth century.

3310 Nineteenth-Century American Literature. Three credits. Survey of American literature from Washington Irving to Henry James. Concentration on Romanticism, Realism, Naturalism, Pragmatism. Selected novels.

3320 Twentieth-Century American Literature. Three credits. Survey of American literature from Theodore Dreiser to the present. Concentration on major authors. Selected novels.

3330 Southern Literature. Three credits. Early and modern Southern writers. Emphasis on the period 1920-present.

3340 African American Literature. Three credits. Defines and traces the development and transformations of the African American literary tradition. Emphasis on analysis of historical, literary, philosophical, and cultural contexts.

3350 The American Short Story in Context. Three credits. Traces development of the short story from Poe and Irving to the experimental writers of the 1970s. Intensive reading of American writers with some exposure to British and continental authors. Critical essays on short story form.

3360 Multicultural Literature of the United States. Three credits. Writers, genres, and criticism in Native American, African American, Hispanic American, and Asian American literatures.

3365 Hispanic Writers in American Literature. Three credits. (Same as HUM 3365.) Acquaints students with the literary works of

Hispanic Americans writing in English. Emphasis on analysis of the intersection of cultures and traditions and the formation of Hispanic American identity.

- 3370 Modern American Poetry.** Three credits. A survey of the lives, times, and works of the major American poets since 1860: Whitman, Dickinson, Frost, Stevens, Williams, Pound, Moore, Eliot, Crane, Hughes, Bishop, Lowell, Plath.
- 3400 European Literature to 1400.** Three credits. Selections from Greek and Roman literature and Dante; emphasis on epic, drama, mythology; comparison of values commended by our literary ancestors.
- 3410 Classical Mythology.** Three credits. Survey of the major myths and legends of the classical world with an emphasis on Greek mythology.
- 3420 European Literature: 1400–1800.** Three credits. Survey of continental literature (in translation) of the Renaissance, Neoclassical, and Enlightenment periods. Emphasis on Rabelais, Cervantes, Moliere, and Voltaire.
- 3430 Modern European Literature.** Three credits. Survey of continental literature (in translation) from 1800 to the present, including Goethe, Flaubert, Tolstoy, Ibsen, and Mann.
- 3440 The Bible as Literature.** Three credits. Origin and nature of the Bible; cultural and historical backgrounds, influence on English language and literature; history of texts and canon; major religious and philosophical concepts and literary features.
- 3450 Studies in Narrative.** Three credits. Examines the chronological and/or thematic development of at least two different types of narrative, representing at least two different continents.
- 3470 Satire.** Three credits. The theory and practice of satire in a broad cultural and historical context. Different instructors will emphasize different periods or traditions.
- 3480 The Comic Tradition.** Three credits. The various forms of comic literary art as manifested in fiction, drama, and poetry and in folk humor and rituals.
- 3570 Introduction to Linguistics.** Three credits. Anatomy of sound production, levels of structure in language: phonological (sound), morphological (meaningful segments), syntactic (interrelation of words in a sentence). Various meanings of language.
- 3580 Teaching Internship.** One credit. Prerequisite: Admission to teacher education and permission of internship director. Students, under supervision of English Department faculty members and partnering teachers in community schools, serve as interns in secondary school classrooms. May not be used to satisfy English minor requirements. May not be repeated for major credit. Pass/Fail.
- 3605 Applied Writing.** Three credits. Develops reading and writing strategies for examining individual writing processes and solving writing problems posed in university studies across the disciplines: essays, reports, reviews, analyses, memos, proposals.
- 3620 Professional Writing.** Three credits. Prerequisite: Completion of ENGL 1020 or 3605 with a B or better. A specialized composition course for students planning to enter the professional workplace, including industry, science, and government. Collaborative practice in the discourse and conventions of professional and technical writing: employment packages, memoranda, instructions, proposals, and reports.
- 3645 Fiction Writing.** Three credits. Prerequisite: Permission of instructor. A specialized seminar in which students study and create works of fiction.
- 3655 Poetry Writing.** Three credits. Prerequisite: Permission of instructor. A specialized seminar in which students study and create poetry.
- 3665 Playwriting.** Three credits. Prerequisite: Permission of instructor. A specialized writing course focusing on the appreciation and realization of the dramatic form.
- 3690 Individualized Writing Project.** One credit. Prerequisite: Permission of instructor. A small-group writing tutorial which allows work on a major writing project from any major or field of interest. Does not count for the English major or minor without advisor approval. Pass/Fail depending on attendance, participation, and progress. May be repeated twice for a total of three (3) credits.
- 3720 Early Women Writers.** Three credits. An introduction to British/American/world literature by women through the eighteenth century.
- 3725 Nineteenth-Century Women Writers.** Three credits. Examines works by British and American writers in the context of a female literary tradition. Writers studied may include Jane Austen, Mary Shelley, Emily Brontë, Charlotte Brontë, George Eliot, Christina Rossetti, Elizabeth Barrett Browning, and Emily Dickinson.
- 3730 Twentieth-Century Women Writers.** Three credits. Literature of major women writers of the period. Divided by genre and primarily includes the fiction, poetry, and drama of British and American women.
- 3735 Black Women as Writers.** Three credits. A survey of black women's literary expressions and the historical and sociocultural factors that shape these women's artistic sensibilities and thematic concerns. Emphasis will be given to U.S. women writers.
- 3740 Children's Literature.** Three credits. A survey of literature for children based on wide reading in the field.
- 3745 Literature for Adolescents.** Three credits. Surveys literature for adolescents, historical and contemporary; analysis of contemporary issues in the field. **Required for English majors seeking teacher licensure.**
- 3755 Children's Literature: Folk/Fairy Tales, Legends, Myths, Ancient Stories.** Three credits. Introduces folk/fairy tales, myths, epics, legends, and verse from a variety of languages, cultures, ethnic groups, and historical periods.
- 3760 Introduction to Folklore.** Three credits. Traditional lore and culture (literature, ballads, beliefs, materials) with primary attention to the American scene.
- 3810 British Popular Culture.** Three credits. A cultural survey of Great Britain since 1945, including history, music, film, and literature.
- 3815 Survey of Popular Culture.** Three credits. An overview of literature and media reflecting the mass culture of America from 1900 to the present: westerns, mysteries, science fiction, popular music, film, and television.
- 3840 Science Fiction.** Three credits. The science fiction genre, emphasizing significant themes, recurrent images and conventions, and historical and cultural context.

- 3850 Literature and Film.** Three credits. The relationship between literature and film with emphasis on narration, characterization, point of view, and setting.
- 3860 Film Genre.** Three credits. One or more groups of films linked through narrative, stylistic, and/or thematic characteristics.
- 3870 Film History.** Three credits. History of world film from its inception through the 1990s.
- 3880 Women and Film.** Three credits. Representations of women in classic and contemporary films and of the work of contemporary women directors.
- 3885 Gender in Film.** Three credits. Gender representation in film with emphasis on such subjects as masculinity and femininity in film, history of gender representation in film, drag and transgender film images, and images of diversity in gendered film images (e.g., race, class, ethnicity, nationality, sexual orientation).
- 4110 Chaucer: The Canterbury Tales.** Three credits. An intensive study of *The Canterbury Tales* and the background out of which they were written.
- 4130 Shakespeare: The Sixteenth-Century Plays.** Three credits. Focuses on the first half of Shakespeare's career. Works considered both as products of their author's time and as enduring cultural artifacts. Special attention given to Shakespeare's development as a dramatist and to his depiction of character, theme, and imagery.
- 4140 Shakespeare: The Seventeenth-Century Plays.** Three credits. Focuses on the second half of Shakespeare's career. Works considered both as products of their author's time and as enduring cultural artifacts. Special attention given to Shakespeare's development as a dramatist and to his depiction of character, theme, and imagery.
- 4180 Milton.** Three credits. An intensive study of *Paradise Lost*, *Samson Agonistes*, "Lycidas," *Areopagitica*, and the minor poetry.
- 4230 Selected British Writers after the Restoration.** Three credits. Focuses on the work of at most three authors in a cultural and literary context. Specific authors will vary. May be repeated for up to six credits.
- 4240 Modern British Literature.** Three credits. Poetry, fiction, and nonfiction written in Britain from approximately 1910 to 1939. Representative works of major British writers in the context of contemporary social and literary history.
- 4270 Contemporary British and Commonwealth Literature.** Three credits. Contemporary British and Commonwealth novels in the context of social and literary history.
- 4310 The American Renaissance.** Three credits. American Romanticism in the selected writings of Emerson, Whitman, Thoreau, Hawthorne, and Melville.
- 4320 Selected American Writers.** Three credits. Focuses on the work of at most three American authors in a cultural and literary context. Specific authors will vary.
- 4410 Literary Criticism.** Three credits. Critical theories: Classical, Neo-classical, Romantic, and Modern. Practical criticism: the technical analysis of poetry and prose.
- 4425 Backgrounds of Modern Literature.** Three credits. Readings in the intellectual history of modern literature. Selected literary figures, major aesthetic movements, and pivotal ideas of modern Western culture, including Marx, Darwin, Nietzsche, Freud, Sartre. Course divided by themes representing disciplines or modes of thought.
- 4470 Modern Drama.** Three credits. World drama from 1880 to the present.
- 4500 Methods of Teaching Secondary English.** Three credits. Prerequisite: YOED 3500 and permission of department. An intensive study of both grammar and composition for the teacher, the writer, and the editor: writing, analyzing, and judging composition. **Required for English majors seeking teacher licensure.**
- 4510 Modern English Grammar and Usage.** Three credits. Traditional English grammar and the principles upon which grammatical analysis is based. **Required for English majors seeking teacher licensure.**
- 4520 The Structure of English.** Three credits. Structure of modern English and overview of current syntactic theories.
- 4530 History of the English Language.** Three credits. Political, social, intellectual forces determining historical development of English; internal structural changes—sounds, inflections—resulting from those forces.
- 4540 Approaches to Teaching ESL Grammar and Writing.** Three credits. Prerequisite: ENGL 4510 or equivalent. Background and basic methods needed to teach English grammar and composition to students for whom English is a second language. Emphasizes understanding of problems that non-native speakers face and develops techniques for helping non-native speakers express themselves in written English.
- 4570 Special Topics in Linguistics.** Three credits. Prerequisite: ENGL 3570, ANTH 3410, PSY 4820, or CDIS 3250. Selected topic in theoretical linguistics. Content varies from semester to semester. May be repeated under a different subtitle.
- 4600 Writing Internship.** Three to twelve credits. Prerequisites: Fulfillment of ENGL 3520, 3620, 4000, or 4605 with a B or better and permission of department. A special course in which students work for a publishing company or other business or organization involved in professional writing. Enrollment open to English majors, Writing minors, and other students with permission of the internship director. Only 3 hours may count toward the English major and 3 hours toward the Writing or English minor. Arrangements for this course must be made in advance with the internship director through the Upper-Division office. Pass/Fail.
- 4605 Advanced Composition.** Three credits. Prerequisite: Completion of ENGL 1020 or 3605 with a B or better. Approaches to various writing problems posed in advanced university studies and non-technical professions: essays, proposals, critical reviews, analyses.
- 4670 Special Topics in Writing.** Three credits. An intensive study in one specialized form of writing. The form of writing will vary with the instructor teaching the course.
- 4750 Special Topics in Children's Literature.** Three credits. Selected genre, period, ethnicity, tradition, or literary focus in children's and/or young adult literature. Subject will vary with instructor.
- 4760 Special Topics in Folklore.** Three credits. Prerequisite: ENGL 3760 recommended. An intensive study on a selected topic of folklore. Content varies from semester to semester and will reflect the interests and expertise of the instructor.
- 4780 War and Literature.** Three credits. Open to all majors. A selected author, genre, period, tradition, or context of literary inquiry in the subject of war. Topic will vary with instructor.

- 4785 Law and Literature.** Three credits. Introduces interrelations of law and literature as seen in a variety of literary texts and classic writings of great jurists.
- 4855 Film Theory and Criticism.** Three credits. A survey of the major theoretical approaches to film, including montage, *mise-en-scene*, and structuralist theory.
- 4860 Special Topics in Film Studies.** Three credits. A selected director, genre, period, aspect, or theme. The subject will vary each time course is taught.
- 4900 Selected Topics in Literature and Language.** Three credits. A selected author, genre, period, tradition, or context of literary or linguistic inquiry. The field will vary with instructor.
- 4910 Studies in Poetry.** Three credits. Selected topics in poetry. Topics may include the poetic works of a single author, those of a number of authors, a particular style of poetry, poetic works linked by period, culture, or subject matter, or any combination of the above. Topics will vary.
- 4920 Studies in Drama.** Three credits. Works of drama linked by historical period, region or culture, author(s), subject matter, or other connective thread. Topic will vary with instructor.
- 4930 Studies in Prose Fiction.** Three credits. Selected topics in the novel and other forms of prose fiction. Focuses on works and writers from the U.S., Britain, and Europe during the eighteenth- through twenty-first centuries, although other regions and eras may be included as supplemental features. Topics vary each semester.
- 4940 Studies in Prose Nonfiction.** Three credits. Examines works of nonfiction such as autobiography, journals, essays, etc. Specific topics will vary.
- 4950 Special Topics in Contemporary Literature.** Three credits. A selected genre, author, theme, or nation, with a focus on literature after World War II. Subject will vary with instructor.
- 4980 English Studies Abroad.** Three credits. Selected genre(s), period(s), tradition(s), or literary focus combined with study abroad. Subject will vary with instructor. Courses may be taken multiple times with different topics.

Environmental Science and Technology [EST]

- 2810 Introduction to Environmental Science.** Three credits. The technical, economic, and political aspects of environmental science. Introduction to specific problems dealing with many pollution issues. Specific monitoring, abatement techniques, and equipment. An overview of energy production processes, industrial pollution problems, air, noise, solid and hazardous wastes, along with economic and environmental concerns. Field trips, lecture, and research projects and/or papers highlight specific topics of special interest to students.
- 4760-4763 Seminar in Environmental Science and Technology.** One credit each. Four interdisciplinary seminars conducted jointly among Agribusiness and Agriscience, Biology, Chemistry, Physics and Astronomy, and Engineering Technology. Guest lecturers, agency and resource personnel, readings, reflective thought, films, and discussions on environmental problems and issues, new and proposed legislation, and the role of environmental science and technology in pollution control.
- 4770 Pollution Control Technology.** Three credits. Prerequisites: 8 hours each in biology, chemistry, and physics, or consent of instructor. Solid waste and water pollution control technology.

Legislative regulations and quality standards, pollution types and sources, detection and analysis instruments, and treatment or abatement principles and practices.

- 4780 Air, Solids, and Noise Pollution Technology.** Three credits. Prerequisites: 8 hours each chemistry, biology, and physics or permission of instructor. Air, noise, solid and hazardous waste pollution technology, including legislative regulations and quality standards: sources, detection, and analysis instrumentation and practices, and treatment and abatement principles, equipment, and practices.
- 4810 Energy and the Environment.** Three credits. Prerequisites: 4 hours chemistry and 3 hours mathematics or consent of instructor. Sources and methods of energy production and classifications of energy usages, with emphasis on usage trends, energy conservation strategies, and alternate energy utilization.
- 4820 Solar Building Design.** Three credits. Prerequisites: 4 hours science and 3 hours mathematics or consent of instructor. Broad introduction to the environmental and economic impact of solar energy for residential and light industrial construction including day lighting, passive solar design, and hot water heating.
- 4840 Energy Auditing.** Three credits. Prerequisites: 4 hours chemistry and 3 hours mathematics or consent of instructor. Types of energy consumption and classifications of energy usages, with emphasis on conservation strategies and total management for residential and industrial plants.
- 4980 Environmental Public Health.** Three credits. Prerequisites: 8 hours college biology and 8 hours college chemistry. Applying the sciences of biology, chemistry, statistics, and environmental engineering to the field of public health. Public health epidemiology and disease control concepts related to the anticipation, recognition, assessment, and control of common public health disease problems.

Exercise Science [EXSC]

- 3500 Exercise Leadership and Program Planning.** Three credits. Practical experience in adult exercise leadership in individual and group settings. Precautions for safe and effective exercise leadership, instruction, and adult fitness programming based on the guidelines of the American College of Sports Medicine included.
- 4000 Research Seminar in Exercise Science.** Three credits. Prerequisite: EXSC 4830. Development of research ideas, application of computers in searching research databases, methods of research and data collection, and preparation and presentation of a research proposal.
- 4010 Applied Research in Exercise Science.** Three credits. Prerequisite: EXSC 4000. Completion of a research study in exercise science including preparation of Institutional Review Board documents, collection and analysis of research data, preparation of research report, and presentation of research findings.
- 4240 Principles of Exercise Prescription and Assessment.** Three credits. Prerequisite: EXSC 4830. Provides students with practical and theoretical experiences in exercise prescription and health/fitness assessment techniques; primarily for healthy population. Upon completion, pursuit of ACSM Health/Fitness Instructor Certification recommended.
- 4250 Internship.** Twelve credits. Prerequisites: Permission of department. On-site practical experience in an exercise science/health promotion program.

- 4260 Exercise Assessment and Prescription for Special Populations.** Three credits. Prerequisite: EXSC 4240. Practical and theoretical experiences in exercise prescription and health/fitness assessment techniques for special populations. Precautions for safe and effective participation in exercise programs identified.
- 4810 Measurement and Evaluation.** Three credits. (Same as HLTH 4810.) Concepts and procedures used for applied measurement and evaluation in health and human performance settings. Basic statistics, reliability and validity, measurement instruments in field and laboratory settings, and the administration of a variety of tests within discipline.
- 4830 Physiology of Exercise.** Four credits. Prerequisites: BIOL 2010/2011; EXSC 4831 must be taken concurrently. Acute response and chronic adaptations of the body to physical activity, exercise, and sports participation, and their impact on homeostasis examined.
- 4831 Physiology of Exercise Lab.** Zero credits. Laboratory to accompany EXSC 4830.
- 4920 Independent Study.** One, two, or three credits. (Same as ATHT/HLTH/PHED/REC 4920.) Independent study topics based on a study plan prepared in cooperation with a faculty supervisor. Culminates in a formal paper and/or comprehensive examination. Application forms must be completed and approved prior to enrollment. A maximum of three credit hours may be applied toward degree.
- 4965 Aquatic Exercise and Therapeutic Rehabilitation Techniques.** Three credits. (Same as ATHT/REC 4965.) Examines the various uses of the aquatic environment to develop, maintain, and improve physical performance with practical development of skills and techniques and aquatic exercise programming. Combines both didactic and laboratory activities in an experiential learning environment.

Experiential and Service Learning [EXL]

- 2010 Service-Learning Practicum.** One credit. Prerequisite: Permission of instructor. Opportunity to take part in service-learning projects with community partners. Pass/Fail. (May be repeated for a total of two credits.)
- 2020 Leadership Studies Practicum.** One credit. Prerequisite: Permission of instructor. Opportunity to enhance personal leadership development and understanding through campus- or community-based projects. Pass/Fail. (May be repeated for a total of two credits.)
- 2030 Civic Engagement Practicum.** One to three credits. Prerequisite: Permission of instructor. Opportunity to take part in civic engagement projects with community partners. Pass/Fail. May be repeated for a total of two credits.)
- 3010 Service Learning Practicum.** One to three credits. Prerequisite: Permission of instructor. Opportunity to take part in service-learning projects with community partners. Pass/Fail. (May be repeated for a total of up to six credits.)
- 3020 Leadership Studies Practicum.** One to three credits. Prerequisite: Permission of instructor. Opportunity to enhance personal leadership development and understanding through campus- or community-based projects. Pass/Fail. (May be repeated for a total of up to six credits.)
- 3030 Civic Engagement Practicum.** One to three credits. Prerequisite: Permission of instructor. Opportunity to take part in civic engagement projects with community partners. Pass/Fail. (May be repeated for a total of up to six credits.)
- 4000 EXL Seminar.** One credit. Prerequisites: Senior standing, EXL Scholars Program participant. Culminating experience for students in the EXL Scholars Program. Students will develop an e-portfolio of experiential and service-learning experiences and will participate in discussions of their EXL experiences.

Family and Consumer Sciences Education [FCSE]

- 1400 Personal Finance.** Three credits. Provides basic principles and related skills for young adults soon to be involved in making personal financial decisions on their own. Modules focus on key financial concepts that affect individuals and families as responsible economic citizens. Emphasis placed on utilizing personal financial planning tools for effective money management practices throughout the life span.
- 2510 Family and Consumer Sciences Education Curriculum.** Three credits. Overview of the philosophy, career, federal and state legislation and standards, co-curricular youth programs and curriculum in Family and Consumer Sciences Education. Emphasis on diversity, technology, lifelong learning, and special needs of students.
- 3510 Methods and Materials for Teaching Family and Consumer Sciences Education.** Three credits. Influences on FCSE components of a learning environment, principles of teaching, and curriculum construction; analysis and application of assessment tools and data collection methods for the FCS classroom; and a career management action plan. Community resources and local educators provide mentoring and teaching opportunities in classrooms.
- 4500 Occupational Field Experience.** Three credits each. Prerequisite: Permission of instructor. Directed participation in planned and supervised occupational experiences of 8 hours field experience per week. Must apply previous semester.
- 4501 Care and Guidance of Children.** Three credits.
- 4502 Culinary Arts.** Three credits.
- 4540 Teaching Family and Consumer Sciences Education.** One to six credits. Review of recent advances in family and consumer sciences education. Analysis and evaluation of selected topics, materials, and methods in terms of their appropriateness for teaching competencies in family and consumer sciences.
- 4550 Curriculum Development.** Three credits. Review of recent advances in home economics education. Analysis and evaluation of selected topics, materials, and methods in terms of their appropriateness for teaching curriculum objectives in home economics.
- 4560 Problems in Teaching Materials.** One to three credits. Prerequisite: Permission of department chair. Application of principles and techniques involved in the selection and preparation of effective teaching materials and visual aids.
- 4570 Occupational Family and Consumer Sciences Seminar.** Three credits. Prerequisite: Consent of instructor. Examination and analysis of program development, execution, and evaluation in a selected occupational area.

Finance [FIN]

Finance (Business)

3000 Principles of Financial Management. Three credits. Prerequisite: ACTG 2110 or 3000. Will not substitute for FIN 3010. An overview of the fundamental concepts and tools for financial decision making within a business firm. (Not open to business majors.)

3010 Business Finance. Three credits. Prerequisites: ACTG 2120 or 3000; QM 2610; junior standing. Theory of corporate finance, emphasizing wealth creation, valuation, risk, capital budgeting, and cost of capital.

3810 Investments. Three credits. Prerequisite: FIN 3010. Introductory survey course focusing on investment markets and instruments. Emphasis on security characteristics, analysis, and valuation.

4010 Intermediate Financial Management. Three credits. Prerequisites: FIN 3010 with a minimum grade of C (2.00); MATH 1810 or 1910; QM 3620. Reviews and extends the basics of risk, valuation, and the creation of wealth. Explores capital budgeting, capital structure, and their interactions.

4110 Managerial Finance. Three credits. Prerequisite: FIN 3010 with a minimum grade of C (2.00). A case course emphasizing the financial aspects of management. Topics include financial statement analysis, working capital management, capital budgeting, and cost of capital.

4390 Employee Benefits. Three credits. (Same as ECON 4390.) Prerequisite: Junior standing. Includes descriptive review and taxation, legislative, and administrative dimensions of the major components of employee benefit plans such as retirement systems, deferred compensation plans, health insurance, death benefits, disability benefits, paid and unpaid time off. Technical analysis and problem solving emphasized to develop applied skills. Social insurance and international benefits integrated.

4810 Portfolio Theory and Management. Three credits. Prerequisites: FIN 3810; MATH 1810 or 1910; QM 3620. Rigorous development of investment theory from its origins to current extensions and alternatives. Emphasis on investor rationality, efficient portfolio selection, capital asset pricing and options valuation models, and market efficiency.

4860 International Financial Management. Three credits. Prerequisite: FIN 3010 with a minimum grade of C (2.00). International capital markets, exchange rate exposure, risk management, and other multinational finance issues. Essential not only for United States exporters, but also for those facing competition from abroad.

Financial Institution Management

4260 Financial Markets and Institutions. Three credits. (Same as ECON 4260.) Prerequisites: ECON 3210 with a minimum grade of C (2.0); FIN 3010 or 3000. Develops an understanding of the structure and functioning of our monetary-financial system. Emphasis on the institutional process of financial intermediation in the financial marketplace and the role that specific institutions and instruments play.

4360 Management of Financial Institutions. Three credits. Prerequisite: ECON 3210 with a minimum grade of C (2.0). Development of fundamental concepts and principles of sound institution management. Includes the financial environment, strategy, performance measures, asset/liability management topics, within an overall decision framework.

Finance (Real Estate)

2450 Principles of Real Estate. Three credits. Real estate practices and procedures, basic principles of real property ownership utilization and transfer, mortgage financing, brokerage, management, valuation, subdividing, and legislation.

4430 Real Property Valuation. Three credits. Prerequisites: FIN 2450; junior standing; FIN 3010 strongly recommended. Theory and methods of real property valuation. Employs qualitative and quantitative analysis to appraise residential and income-producing properties. Emphasizes comparable sales, cost-depreciation, and income capitalization.

4440 Real Estate Finance. Three credits. Prerequisites: Junior standing; FIN 2450 and 3010 strongly recommended. Financial analysis applied to various types of real property. Includes underwriting, sources of funds, portfolio problems, and government programs. Emphasizes analysis of money and mortgage markets and modern creative financing.

4470 Real Estate Law. Three credits. (Same as BLAW 4470.) Prerequisite: Junior standing. Legal rights and limitations of ownership of property, estates, titles, methods of transferring titles, abstract of titles, mortgages, leases, easements, restrictions on the use of property, real estate development, and planning, application of contract law to real property, and the administration of wills.

4510 Real Estate Brokerage and Management. Three credits. Prerequisites: FIN 2450; junior standing. Management principles and techniques for the successful real estate brokerage firm. Topics emphasized are organizing, planning, management, marketing, and advertising techniques.

4550 Real Estate Investment Analysis. Three credits. Prerequisites: FIN 2450, 3010; junior standing. Analysis of real estate projects and markets. Emphasizes market research, taxes, financing techniques, and discounted cash flow analysis. Requires computer-assisted investment tools and case analysis.

4590 Independent Study in Real Estate. One to three credits. Prerequisite: Junior standing. Current analysis of issues in the field of real estate with concentration on major problems and policies in managing real estate and other related resources.

Finance (Insurance)

3610 General Insurance. Three credits. Prerequisite: Junior standing. The principles of risk and risk bearing; insurance carriers; survey of principles of life, health and accident, fire, marine, and automobile insurance policies; government regulation of insurance.

3660 Life Insurance and Health Insurance. Three credits. Prerequisite: Junior standing. Problems of purchaser and seller; critical investigation of life and health insurance with emphasis on social and economic aspects.

3710 Property and Casualty Insurance. Three credits. Prerequisite: Junior standing. Scope and fundamentals of property and liability insurance; analysis of contracts, rating, underwriting, insurers, and loss of adjustment requirements and procedures.

4710 Insurance in Estate Planning. Three credits. Prerequisite: FIN 3610. Insurance as it may relate to estate planning examined in detail. Focus on estate planning principles including the problems of estate liquidity, taxation, governmental regulation, and costs involved in handling estates. Also included are ownership provisions and beneficiary designations, settlement options, and trusts.

- 4730 Insurance Company Operations.** Three credits. Prerequisite: FIN 3610. Insurance marketing, underwriting, reinsurance, rate making, claims adjusting, loss control activities, and other functions and activities.
- 4750 Risk Management.** Three credits. Prerequisite: FIN 3610. Analysis of major sources of liability loss exposures and the insurance coverages designed to meet those exposures. Noninsurance techniques such as loss control and risk transfer also discussed.
- 4790 Independent Study in Insurance.** Three credits. Prerequisite: FIN 3610. Application of various insurance coverages to fulfillment of personal, business, and social needs. Special problems chosen or assigned in areas of the student's interest in joint consultation between student and instructor.

Finance (General)

- 2010 Personal Financial Planning.** Three credits. Includes budgeting and saving techniques, tax planning, insurance principles, consumer credit, housing, investment alternatives, and retirement and estate issues.
- 3430 Public Finance.** Three credits. (Same as ECON 3430.) Prerequisites: ECON 2410, 2420; junior standing. Economic foundations of federal tax and expenditure policies. Current issues in federal budget policy. Policy applications illustrating key concepts such as public goods, externalities, income distribution, tax incidence, tax equity, and allocative efficiency. Intergovernmental fiscal relations.
- 3910 Computer Applications in Finance.** Three credits. Prerequisites: INFS 3100; ECON 2420; FIN 3010 or 3000. Employing a computer in economics and financial decision making. Covers spreadsheets, object-relational database management systems, and data warehousing.
- 3970, 3980 Cooperative Education.** Three credits. (Same as ECON 3970 and 3980.) Prerequisite: Junior standing. Cooperative Education experiences provide students with opportunities for on-the-job training in conjunction with on-campus academics. These courses will not satisfy major or minor requirements. Interested students should contact the Career Development Center. Students will be selected for participation and opportunities may be limited.
- 4310 Problems in Government Finance.** Three credits. (Same as ECON 4310.) Prerequisites: ECON 2410, 2420. Current issues in taxation, theory of income taxation, consumption taxes, property and wealth taxes. Advanced treatment of tax incidence, tax efficiency, income distribution, fiscal federalism, and state and local budget issues.
- 4890 Internship in Finance.** One to three credits. Prerequisites: Junior status and recommendation of advisor. Supervised work experience in cooperating business firms or government agencies together with specialized academic study relating to the work experience. Pass/Fail.
- 4910 Options, Futures, and Other Derivatives.** Three credits. Prerequisite: FIN 3010 or equivalent. Valuation and hedging of options, forward contracts, futures contracts, swaps, and other derivatives. Examines fundamental tools commonly used for pricing and hedging and options and futures contracts. For undergraduate and graduate students with little mathematics beyond algebra.
- 4990 Independent Study in Finance.** One to three credits. Prerequisite: Junior standing. Problems for intensive study are chosen in joint consultation between student and instructor.

Foreign Languages [FL]

- 4500 Introduction to Teaching Foreign Languages.** Three credits. Introduces students who plan to teach a foreign language in elementary or secondary schools to a variety of approaches and instructional methods.

Foundations of Education [FOED]

- 1110 Education as a Profession.** Three credits. History and organization of American education from its foundation to the present. Includes issues concerning curriculum, organization, and administration of public education in the United States. Designed to assist prospective teachers in evaluating personal qualification in relation to professional needs and investigating teaching as a career.
- 2110 Educational Psychology.** Three credits. Physical, social, emotional, and mental development of the human from birth to maturity. Includes basic theories of learning including behaviorism, constructivism, and humanism along with theories of motivating and facilitating learning processes in social settings. A 10-hour tutorial assignment in a public school necessary.
- 3350 Instructional Development Laboratory for Teachers.** Four credits. Innovative course in methodology providing experiences with audio/visual aids and equipment, preparation of instructional plans, tryout of plans with videotaped, micro-teaching sessions; problems relating to teacher-pupil relationships and discipline included.

French [FREN]

- 1010 Elementary French I.** Three credits. Foundation course in reading, writing, speaking, and aural comprehension.
- 1020 Elementary French II.** Second semester. Three credits. Prerequisite: FREN 1010 or advanced placement. Continuation of 1010.
- 1030 Elementary Business French.** Three credits. Prerequisite: FREN 1010 or equivalent. Embarks students on a mastery of the linguistic and cultural skills necessary for effective communication in francophone professional contexts. May substitute for FREN 1020.
- 2010 Intermediate French I.** Three credits. Prerequisite: FREN 1020 or advanced placement.
- 2020 Intermediate French II.** Second semester. Three credits. Prerequisite: FREN 2010 or advanced placement. Continuation of 2010.
- 2910 Study Abroad.** One to six credits. Prerequisites: Two semesters of French or equivalent and/or approval of French faculty. For students in any major or minor.
- 3010 Advanced Composition.** Three credits each. Prerequisite: FREN 2020 or equivalent.
- 3030 Business French.** Three credits. Prerequisite: FREN 3010 or equivalent. The linguistic and cultural skills necessary to conduct business in France or any other francophone setting.
- 3040 Intensive Conversational French.** Three credits. Prerequisite: Two years of French.
- 3050 Survey of French Literature and Culture (Middle Ages–1800).** Three credits. Prerequisite: FREN 3010 or equivalent.
- 3060 Survey of French Literature (1800–Present).** Three credits. Prerequisite: FREN 3010 or equivalent.

- 3070 Topics in French and Francophone Film.** Three credits. Prerequisite: FREN 3010 or equivalent. History, aesthetics, and analysis of French and francophone film. Course conducted in French.
- 3080 Introduction to French Literary Studies.** Three credits. Prerequisite: FREN 3010. Concepts and vocabulary fundamental to the study of French literature; general view of the main currents of French literary history; introduction to French versification; techniques of literary analysis; practice in literary analysis and in writing about literature; preparation for 4000-level courses.
- 3110 French/Francophone Culture.** Three credits. Prerequisite: FREN 2020 or equivalent. History of French/Francophone culture from the beginning to present.
- 3130 Twentieth-Century Women Writers in French.** Three credits. Prerequisite: FREN 2020 or equivalent for French majors and minors; ENGL 2020 or 2030 or equivalent for all others. The literary works of twentieth-century women writers of French-speaking countries including Algeria, Canada, France, Guadeloupe, Haiti, Morocco, Senegal, and Vietnam. Class conducted in English.
- 3910 Study Abroad.** Three to twelve credits. Prerequisites: 12 credits; two years study of French or equivalent with B average or better; and approval of Foreign Languages and Literatures Department. Majors and minors only. Students will spend one or two semesters abroad studying French language, literature, and culture. Students may earn three to twelve credit hours in other study abroad programs approved by the Department of Foreign Languages and Literatures. May be repeated.
- 3970, 3980 Cooperative Education.** Three credits. Provides students with opportunities for on-the-job training in conjunction with on-campus academic experiences. Students will participate in professional growth seminars. Requirements of the department must be completed to receive credit.
- 4010 Topics in Twentieth-Century French Literature.** Three credits. Prerequisite: FREN 3080 or permission of instructor.
- 4020 Topics in French Film.** Three credits. Class conducted in English. No language prerequisite. However, students taking course for French major or minor credit will be required to do some written assignments in French.
- 4030 Topics in Nineteenth-Century French Literature.** Three credits. Prerequisite: FREN 3080 or permission of instructor.
- 4040 Topics in Eighteenth-Century French Literature.** Three credits. Prerequisite: FREN 3080 or permission of the instructor.
- 4050 Topics in Medieval and Renaissance French Literature.** Three credits. Prerequisite: FREN 3080 or permission of instructor.
- 4060 Topics in Neoclassical French Literature.** Three credits. Prerequisite: FREN 3080 or permission of instructor.
- 4070 Topics in Sixteenth-Century French Literature.** Three credits. Prerequisites: FREN 3080 or permission of instructor.
- 4080 Topics in Medieval French Literature.** Three credits. Prerequisite: FREN 3080 or permission of instructor.
- 4900 Directed Study in French Literature and Culture.** One to six credits. Prerequisites: FREN 3010 or permission of instructor. Individualized intensive reading in primary and secondary sources relating to a specific topic in French literature or culture. Arrangements must be made with instructor prior to registration. Proposals must be approved by the French section one month prior to the end of the preceding semester.

4958 Honors in French Literature. Three credits. For students of advanced standing and superior academic ability. Admission only by permission of the Departmental Honors Committee and approval by the Honors Council. Proposals must be approved by midterm of the semester preceding enrollment in 4958.

4990 Techniques of Translation. Three credits. Prerequisites: Admission to the College of Graduate Studies or permission of the instructor. For graduate students seeking proficiency in reading French for research purposes. Open to undergraduates seeking to prepare for graduate study. Will not count toward a major or minor in French.

Geography [GEOG]

Some departmental courses may be accepted in either concentration; others are accepted only in one concentration. Substitutions are made at the discretion of the department chair in consultation with the academic advisor.

Geography (Basic Courses)

1030 Physical Geography. Four credits. The physical earth as the home of humans. The global earth in space, tools of the discipline, the atmosphere, the hydrosphere, and the biosphere. Field trips may be required. Three hours lecture and two hours laboratory per week.

2000 Introduction to Regional Geography. Three credits. Examination of world regions using the geographical perspective, identifying the main physical and cultural features, especially through the use of maps.

3120 Geography of Tennessee. Three credits. (Same as HIST 3121.) Focuses on the diverse physical and human landscapes of the state. Topics include weather and climate, landforms, vegetation and soils, population patterns and trends, economic activities (including agricultural and geographical perspectives on social and environmental issues).

Geography (Regional)

2105 Introduction to Latin American Studies. Three credits. (Same as SPAN 2105, PS 2105, SOC 2105, ART 2105, ANTH 2105.) A multidisciplinary, team-taught introduction to Latin America. Covers the cultures and societies of the region: pre-history, history, geography, politics, art, languages, and literatures. Required course for all Latin American Studies minors.

3401- Field Course. Four credits each. Supervised study in some geographical area, preceded by classroom preview and concluded by a time of evaluation. Emphasis on natural and cultural elements of the environment with special attention directed toward the pattern of human occupancy. For fees and specific credit, consult the instructor.

3410 Geography of the United States and Canada. Three credits. Natural, cultural, and geographic environment of these regions.

3420 Geography of Latin America. Three credits. Geographic regions of Mexico, Central America, the West Indies, and South America.

3430 Geography of Europe. Three credits. General distribution of natural and cultural features of Europe followed by a detailed study of the regions and countries of the southern, central, and northwestern parts of the continent.

3440 Geography of Asia. Three credits. Survey of the entire continent followed by a detailed study of the geographic regions outside the

former Soviet Union with special emphasis on the Indian Realm, China, and Japan.

- 3460 Geography of the Former Soviet Union.** Three credits. Analysis of the natural, cultural, and human-use regions of the former Soviet Union.
- 3470 Geography of Africa.** Three credits. Survey of the physical and cultural features of Africa, followed by a detailed study of the geographic regions of the continent.
- 4500 Geography of the Middle East.** Three credits. An analysis of the problems, issues, and theories involved in understanding the physical, cultural, and regional geography of the area.

Geography (Topical Courses)

- 3720 Cultural Ecology.** Three credits. (Same as ANTH 3720; HIST 3720.) Prerequisites: 3 hours anthropology or geography. Comparison of ecological systems utilized by tribal, peasant, and industrialized peoples of the world. Special attention paid to the theoretical approaches examining the interface of the environment and culture, the evolution of modes of subsistence, and contemporary development and indigenous people.
- 4280 Special Problems and Topics in Geography.** One to six credits. (Variable credit.) Prerequisite: Must have equivalent of a minor in Geography. Research participation or guided readings in a particular area or topic appropriate to the student's interest and professional objectives.
- 4300 Military Geography.** One credit. An examination of geography as applied to the conduct of military forces in pursuing and securing national objectives.
- 4310 Resource Management and Conservation.** Three credits. Current problems related to intelligent use and management of environmental resources.
- 4320 Economic Geography.** Three credits. Relationship of the physical factors of the environment to the productive occupations of humans and the distribution of products.
- 4330 Political Geography.** Three credits. Significance of geographical factors in understanding political relationships within and among nations; spatial implications of political decision-making processes.
- 4340 Historical Geography.** Three credits. (Same as HIST 4341.) Prerequisite: GEOG 2000 or permission of instructor. The changing human geography of the United States during four centuries of settlement and development. Emphasis on changing population patterns as well as patterns of urban and rural settlement.
- 4360 Cultural Geography.** Three credits. (Same as HIST 4361.) Prerequisite: GEOG 2000 or permission of instructor. Description and explanation of spatial patterns and ecological relationships in human culture. Emphasis on "reading" the cultural landscapes.
- 4370 Urban Geography.** Three credits. An introduction to the development of towns, cities, and associated urban areas. Environmental problems also examined. Classroom analysis of various theories of urban development and data collected by field work.
- 4380 Cartography.** Four credits. General knowledge of the field including familiarity with the techniques and tools of professional cartography and graphics. Selected lectures, class discussions, and a series of map construction assignments. Three hours lecture and two hours laboratory per week.
- 4470 Rural Settlement.** Three credits. (Same as HIST 4471.) Prerequisite: GEOG 2000 or permission of instructor. A geographical analysis of forms, structures, and distribution of rural settlements in distinctive parts of the earth based upon their origin, function, and development. Special emphasis in analyzing rural settlements of middle Tennessee.
- 4480 Recreational Geography.** Three credits. A geographical analysis of natural and cultural factors influencing use of space for recreational purposes. Emphasis given to recreational land use in the United States and contemporary problems and conflicts. Lectures and field problems.
- 4490 Remote Sensing.** Four credits. The various aspects of remote sensing such as radar, satellite imagery, and infrared data. Use of data in preparation of maps and application to land use and environmental problems examined. Three hours lecture and two hours laboratory per week.
- 4510 Laboratory Problems in Remote Sensing.** Four credits. Prerequisite: GEOG 4490. Computer processing of selected satellite imagery. Laboratory will provide practical experience through design, execution, and completion of an applied remote sensing project.
- 4520 Image Interpretation.** Four credits. Principles, methods, and techniques of image interpretation, including maps, satellite data, and aerial photos.
- 4530 Geographic Information Systems.** Three credits. Lecture and laboratory work relative to computer-manipulated geographic data base. Laboratory work will involve experience in practical application of a geographic information system (GIS) to problem solving.
- 4540 Geography of Native Americans.** Three credits. (Same as HIST 4540.) Prerequisite: GEOG 2000 or permission of instructor. Lecture and field exercise format viewing America's native population from a geographic perspective. Native Americans will be examined geographically using geo-techniques to explore their past, present, and future; cultural ecologically—their symbiotic relationship with their surroundings; and through their economic and resource development—how they utilize natural and cultural resources that are presently on tribal lands.
- 4550 Global Issues.** Three credits. An examination of current global issues in the context of their geographic environment. Emphasis on geographic factors impacting those issues. Topics examined vary from year to year.
- 4570 Advanced Geographic Information Systems.** Three credits. Prerequisites: GEOG 4530 or introductory course in geographic information systems or equivalent; coursework in statistics and computer programming recommended. Advanced course in spatial analysis. Using spatial statistics, Visual Basic programming, and databases to solve problems involving proximity, density, clustering, the cost of travel paths, etc. Other major topics include environmental modeling and error analysis.
- 4571- Internship in Geography.** Three credits each. Prerequisites: **4572** Major or minor in geography; 15 hours of geography/geology with junior or senior standing; permission of employer and department. Practical experience for students in a professional setting relating to geographic work. Counted as a free elective, not part of major or minor requirements. After completion of one internship, **4571** or **4572**, the other may be taken (total of 6 credits).
- 4772 Field Course in Historical Archaeology.** Three credits. Prerequisites: HIST 4860; ANTH 3210; or permission of instructor. Archaeological resources and procedures and the interpretation of historical evidence undertaken at a field archaeological site.

Geology [GEOL]

Some departmental courses may be accepted in either concentration; others are accepted only in one concentration. Substitutions are made at the discretion of the department chair in consultation with the academic advisor.

- 1030 Introduction to Earth Science.** Three credits. The earth and its relationship to its space and environment emphasized. Forces and processes which combine to mold the face of the earth and its atmosphere, as well as the internal constitution of the earth. Three hours lecture. GEOL 1031 must be taken concurrently. Together, GEOL 1030 and 1031 satisfy 4 hours of the Natural Sciences portion of the General Education requirement.
- 1031 Introduction to Earth Science Lab.** One credit. Laboratory to accompany GEOL 1030.
- 1040 Physical Geology.** Four credits. Corequisite: GEOL 1041. The origin, composition, and structure of the solid earth: rock-forming minerals; igneous, sedimentary, and metamorphic rocks; earthquakes and plate tectonics; surface processes; geologic time. Identification and description of minerals and rocks in hand sample. Use of topographic and geologic maps. Three hours lecture and two hours laboratory per week.
- 1041 Physical Geology Lab.** Zero credits. Corequisite: GEOL 1040.
- 1050 Historical Geology.** Four credits. Prerequisites: GEOL 1030 and 1031 or GEOL 1040/1041. The major divisions of geologic time with emphasis on earth movements, sea fluctuations, life of the time, and the effect these have had on our present environment. Close attention to the development of the physiographic regions of North America, which are correlated with chronologically similar events in other parts of the world. Topographic maps, geologic maps, and fossil animals and plants. Three hours lecture and two hours laboratory per week.
- 3000 Mineralogy.** Five credits. Prerequisites: GEOL 1030/1031 or 1040/1041 or permission of instructor. Crystallography and crystal chemistry. Physical and chemical properties of silicate and non-silicate mineral groups. Examination of the common rock-forming minerals in hand sample and thin section. Four hours lecture and two hours laboratory per week.
- 3010 Oceanography.** Three credits. Prerequisites: GEOL 1030 and 1031 or 1040 or GEOG 1030; or consent of instructor. Physiography, structures, and sediments of the ocean floor; coastal and oceanic environments; and the nature of sea water, currents, waves, and tides. Geological processes, geophysical studies, and oceanographic instrumentation discussed.
- 3020 Engineering Geology.** Three credits. Prerequisites: GEOL 1030/1031 or GEOL 1040/1041 or equivalent; MATH 1730 or equivalent. Principles and applications of geology in engineering practice. Engineering geology exploration, behavior of soils and rocks for engineering projects, application of engineering geology to the solution of construction and environmental problems.
- 3050 Field Methods in Geology.** Two credits. Prerequisites: MATH 1730 or equivalent; GEOL 1030/1031 or 1040/1041 and 1050; major or minor in Geoscience; or consent of instructor. Introduction to field observation in geoscience. Topics include tape and compass surveys, triangulation, orientation of rock strata, measurement of stratigraphic section, map preparation, and use of GPS. Two hours lecture/field work per week.
- 3060 Computer Methods in Geology.** Three credits. Prerequisites: GEOL 1030/1031 or 1040/1041 and 1050; CSCI 1000 or equivalent; major or minor in Geology/Earth Science; or consent of instructor. Extensive use of personal computers for processing field data, map contouring, geologic reports and illustrations, lettering and cartography, image processing, geologic databases, and digital maps. Brief treatment of classical cartography. Four to five hours lecture/laboratory per week.
- 3160 Geologic Literature and Report Writing.** One credit. Prerequisites: CSCI 1000; GEOL 1030/1031 or 1040/1041, and GEOL 3060; at least 8 semester hours of upper-division Geology courses. Acquisition and presentation of geological data from traditional library and database sources. Preparation of geologic field and laboratory reports in addition to professional reports and papers.
- 3401-3402 Field Course.** Four credits each. Prerequisite: GEOL 1030/1031 or 1040/1041. Supervised study in some geological area preceded by classroom preview and concluded by a time of evaluation. Emphasis on the natural and physical elements of the environment, with special attention directed toward the geomorphology and geology of specific areas. For fees and specific credit, consult the director, division of geology.
- 4000 Petrology and Petrography.** Four credits. Prerequisite: GEOL 3000. Igneous, sedimentary, and metamorphic rocks. Theories of formation and evolution based upon mineralogical and geochemical evidence. Examination and classification of rocks in hand sample and thin section. Three hours lecture and two hours laboratory per week.
- 4020 Geomorphic Regions of the United States.** Four credits. Prerequisites: GEOL 1030/1031 or 1040/1041; GEOL 1050. Origin, regional distribution, and geomorphic features and history of landforms of the United States. Students will be required to analyze maps, structure sections, and aerial photography to determine geomorphic forms and the forces and processes that produced these forms. Three hours lecture and two hours laboratory per week.
- 4030 Invertebrate Paleontology.** Four credits. Prerequisite: GEOL 1050. Invertebrate and microscopic animal life of the past, including recently preserved representatives and their ancient fossilized ancestors. Numerous field trips to local fossil-collecting sites. Designed to aid in the preparation of earth science teachers, geologists, and biologists. Three hours lecture and two hours laboratory per week.
- 4050 Meteorology.** Three credits. A general, nonmathematical introduction to the atmosphere. Emphasis on main elements such as temperature, precipitation, clouds, and humidity. In-depth analysis of storms, tornadoes, and hurricanes and human alteration of the atmosphere such as the ozone hole. Weather forecasting and climate change.
- 4070 Sedimentation and Stratigraphy.** Four credits. Prerequisites: GEOL 1050 and 3000 or consent of instructor. Sedimentary rocks, the processes of sedimentation, the alteration of sediments through time, and examination of resulting stratigraphic units. Designed for geoscience majors and those with interests in soil mechanics and civil engineering. Three hours lecture and two hours laboratory per week.
- 4080 Structural Geology.** Three to four credits. (Variable credit.) Prerequisites: MATH 1730 or equivalent; GEOL 1030/1031 or 1040/1041; GEOL 1050 recommended. Orientation and deformation of rock. Geometric, analytical, and statistical solutions to structural problems. Emphasis on three-dimensional visualization, problem solving, geological map interpretation, and the mechanics of deformation. Lecture and laboratory.

- 4090 Problems in Geology.** One to six credits. (Variable credit.) Prerequisites: A minimum of 12 semester hours of geology (excluding GEOL 1030/1031) at least 6 hours of which must be upper division; consent of instructor. A problem-solving course. Includes an independent research-oriented project commensurate with the student's interests and qualifications. May be repeated up to a maximum of 6 hours.
- 4100 Geophysical Prospecting.** Four credits. Prerequisites: GEOL 3060; MATH 1910; PHYS 2010/2011 or 2110/2111; or consent of instructor. (PHYS 2020/2021 or 2120/2121, GEOL 1030/1031 or 1040/1041, and MATH 1920 also recommended.) Survey of seismic, gravimetric, and magnetic/electrical exploration methods. An applied course covering some elementary theory, basic field practice, computation fundamentals, interpretation techniques. Three hours lecture and two hours laboratory per week.
- 4120 Environmental Geology.** Four credits. Prerequisites: GEOL 1030/1031 or 1040/1041 or GEOG 1030 or consent of instructor. Application of geologic information to minimize possible environmental degradation and maximize utilization of resources in the natural and modified environment; local examples and field trips. Topics include engineering properties of earth materials, natural hazard prediction and reduction, water supply, solid and hazardous wastes, mineral resources, global change, land-use planning, environmental impact analysis. Three hours lecture and two hours laboratory per week.
- 4130 Hydrogeology.** Four credits. Prerequisites: MATH 1730 or equivalent; GEOL 1030/1031 or 1040/1041; 4 hours of geology; or consent of instructor. Basic processes and measurement of the hydrologic cycle, including precipitation, evaporation, surface runoff, stream flow, soil moisture, and ground water. Emphasis on ground water including geology of occurrence, principles of flow, conceptual models of regional flow, chemistry and quality, well hydraulics, aquifer characteristics, resource development, detection of pollutants, and contaminant transport. Lecture and laboratory.
- 4140 Inorganic Geochemistry.** Three credits. Prerequisite: GEOL 4000. Principles of inorganic geochemistry. Geochemistry of the earth and solar system, isotopic geochronometers, thermodynamics and rates of geochemical processes, chemical weathering, chemical compositions of surface and groundwater. Three hours lecture per week.
- 4150 Environmental Applications of Hydrogeology.** Three credits. Prerequisite: GEOL 4130. An advanced course in hydrogeology that emphasizes applied methods for assessing hazardous and solid waste facilities and contaminated ground water remediation techniques. Included will be site characterization methods, ground water sampling procedures, and monitoring well installation techniques. Three hours lecture per week.
- 4170 Applied Geochemistry.** Three credits. Prerequisites: GEOL 1030/1031 or 1040/1041 plus CHEM 1010/1011 or CHEM 1110/1111. Theory and application of geochemical techniques to the study of geologic problems. Sample preparation and analysis of geologic materials using departmental instrumentation. Two hours lecture and two hours laboratory per week.
- 4571- Internship in Geology.** Three credits each. Prerequisites: Major or minor in geology; 15 hours of geology/geography with junior or senior standing; permission of employer and department. Practical experience for students in a professional setting relating to geologic work. Counted as a free elective, not as a part of major or minor requirement. After completion of one internship, 4571 or 4572, the other may be taken (total of six credits).
- 4572 Seminar in Geology.** One credit. Prerequisite: Senior standing in geology. A reading and discussion seminar in which current topics in the geological sciences are examined to broaden the major's knowledge of the scope and literature of the discipline.
- ## German [GERM]
- 1010 Elementary German I.** Three credits. A foundation course in reading, writing, speaking, and aural comprehension.
- 1020 Elementary German II.** Second semester. Three credits. Prerequisite: GERM 1010 or advanced placement.
- 2010 Intermediate German I.** Three credits. Prerequisite: GERM 1020 or advanced placement.
- 2020 Intermediate German II.** Second semester. Three credits. Prerequisite: GERM 2010 or advanced placement.
- 3000 Group Conversational German.** One credit. Prerequisites: GERM 1010 and 1020 or permission of instructor. One hour per week of experiences students may expect to encounter in a German-speaking community. Graded Pass/Fail depending on attendance, participation, and progress. May be repeated for a maximum of 3 hours credit; does not count for the minor.
- 3010, 3020 Advanced Composition and Conversation.** Three credits. Prerequisite: GERM 2020 or advanced placement.
- 3030 Business German.** Three credits. Prerequisites: GERM 2020 or equivalent, plus either 3010 or 3020. A foundation course offering linguistic skills necessary to conduct business in German settings.
- 3040 Intensive Conversational German.** Three credits. Prerequisite: GERM 2010 or equivalent.
- 3050, 3060 Survey of German Culture.** Three credits. Prerequisite: Intermediate German or permission of instructor. 3050 covers the history of German culture through the eighteenth century. 3060 deals with the nineteenth and twentieth centuries.
- 3070 Applied German.** Three credits. Substitutes for GERM 2020. Deals with specialized vocabularies (e.g., business, electronics, economics, music). Extensive readings in the student's area of specialization and practical experience in drafting letters, outlines, reports, etc.
- 3910 Study Abroad.** Twelve credits. Prerequisites: Completion of Intermediate German or equivalent with B average or higher; declared major or minor in German; approval of Foreign Languages and Literatures Department. Semester enrolled at Johannes Gutenberg Universität, Fachbereich der angewandten Sprachwissenschaften, in Gernersheim, Germany, studying German language, literature, and culture. May be repeated once.
- 3970, 3980 Cooperative Education.** Three credits. Provides students with opportunities for on-the-job training in conjunction with on-campus academic experiences. Students participate in professional growth seminars. Requirements of the department must be completed to receive credit.
- 4010 Topics in German Literature and Culture.** Three credits each. Prerequisites: 6 hours German beyond intermediate level or permission of instructor. Topics will vary; may be repeated with different topic.
- 4020 German Literature: 1725-1880.** Three credits. Prerequisites: 6 hours German beyond intermediate level or permission of instructor.

- 4030 German Literature: 1880 to Present.** Three credits. Prerequisites: 6 hours German beyond intermediate level or permission of instructor.
- 4900 Directed Study in German Literature and Culture.** One to six credits. Prerequisites: 15 hours of German or permission of instructor. Individualized intensive reading in primary and secondary sources relating to a specific topic in German literature or culture. Arrangements must be made with instructor prior to registration.
- 4958 Honors in German Literature.** Three credits. For students of advanced standing and superior academic ability. Admission only by permission of the Departmental Honors Committee and approval by the Honors Council. Proposals must be approved by midterm of the semester preceding enrollment in 4950.
- 4990 German for Reading Knowledge.** Three credits. Prerequisites: Admission to the College of Graduate Studies or permission of the instructor. For graduate students seeking proficiency in reading German for research purposes. Open to undergraduates seeking to prepare for graduate study. Will not count toward a major or minor in German.

Gerontology [GERO]

- 2600 Introduction to Gerontology.** Three credits. (Same as SOC 2600.) Basic concepts, overview of the field, illustrations of problems, and applications for an aging America.
- 4030 Topics in Gerontology.** Three credits. (Same as SOC 4030.) An opportunity to integrate gerontological theory and research techniques with the practical problems of older persons.
- 4800 Special Projects.** One to six credits. (Same as SOC 4800.) Field experiences or reading courses through which special interests or needs of the student may be pursued under individual supervision. No more than three hours may be used in the major. Arrangements must be made with an instructor prior to registration.
- 4900 Practicum.** Three to six credits. Prerequisites: GERO 2600 plus six hours of Gerontology electives and senior standing. Student is placed in an agency setting on a contractual basis. Application must be made the preceding semester.

Global Studies [GS]

- 2010 Introduction to Cross-Cultural Experiences.** Three credits. Required of all Global Studies majors or minors. Establishes a broad-based foundation for understanding varying perspectives and values in a culture other than one's own. Differing global and international views on cultural and environmental issues past, present, and future. The student's cultural background will be used for comparative purposes.
- 3010 Field Experience and Study Abroad.** One to twelve credits. Three credit hours are required of all Global Studies majors or minors. Prerequisite: GS 2010 or approval of program director. Credit given for study abroad and/or extended field experiences in another culture.
- 4990 Senior Seminar.** Three credits. Required of all Global Studies majors or minors. Capstone course requiring projects reflecting integration and demonstration of knowledge and skills used by all successful global citizens. Projects determined by the student with advisement of the program director and may be completed on campus, abroad, or in the field.

Health [HLTH]

- 1530 Health and Wellness.** Three credits. Corequisite: HLTH 1531. Explores the role and importance of health and wellness in the lives of individuals and society in general. Laboratory venues will allow opportunities for assessment of lifestyles, decision-making, and research data on health and wellness. Lectures will provide concepts, information, and data involved in maintaining optimum health and wellness. Two lectures and one laboratory.
- 1531 Health and Wellness Lab.** Zero credits. Corequisite: HLTH 1530.
- 2600 Introduction to Health Professions.** Three credits. Examines select health professions. Includes admission procedures, training, post-graduate training, licensure, practice options. Designed to assist students interested in a health career make a more informed choice early in their undergraduate preparation.
- 3000 Service Learning in Health Education.** Three credits. Prerequisites: HLTH 1530/1531 and 3320. Health and health care services and the principles, techniques, and context for service. Insight into service organizations, the basic methods and concepts of service learning, and the impact of actual service experiences. Offers background in the cultural, political, and social contexts of service experiences and serves as a forum for discussion of issues surrounding civic engagement and social responsibility. (An EXL course.)
- 3020 Terminology in Health and Human Performance.** Three credits. Develops vocabulary skills and provides content important to the health and human performance field. Self-study using the Internet.
- 3250 Workshops and Instructional Methods in Health Education.** Three credits. (Same as PHED 3250.) Preparation for conducting workshops in a variety of professional settings.
- 3300 First Aid and Safety Education.** Three credits. (Same as PHED 3300.) Deals with first aid measures, accident prevention, and cardiopulmonary resuscitation. Addresses issues related to drug use/abuse and related acts of violence. Satisfactory completion of the course qualifies the student for American Red Cross Standard and CPR certificates.
- 3310 Health Problems of Exceptional Children.** Three credits. Common health problems of all children with emphasis on health problems peculiar to children in various areas of exceptionality. Consideration will be given to identification and referral.
- 3320 Community and Public Health.** Three credits. Basic preparation for health educators in community and public health programs with an emphasis on identifying and solving problems. Concentrates on the role of the health educator in needs assessment, effective communication, and the management of public health concerns.
- 3330 History of Health Education and Health Organizations.** Three credits. Analysis of health education from origins to present. Emphasis on health philosophies, conferences, significant movements, associations, and pioneer health leaders.
- 3340 Foundations of Health Education.** Three credits. Historical issues, philosophical foundations, ethical considerations, and theories of health behavior and learning which provides a foundation for the practice of health education.
- 4250 Internship.** Nine to twelve credits. Prerequisite: Permission of department; must be taken after major classes. On-site practical experience in an exercise science/health promotion program.

- 4260 Curriculum and Teaching Methods in Health Education.** Three credits. Curriculum planning and teaching methods for prospective school, community, and public health personnel who aspire to teach health education.
- 4270 Bioethical Issues in Health Education.** Three credits. An analysis of current bioethical issues, problems, needs, trends, and interests in health education.
- 4280 Instructor's Course in First Aid and CPR.** Two credits. Prerequisite: HLTH 3300 or current Red Cross certification in multi-media first aid and CPR or standard first aid. Organization, planning, and teaching American Red Cross safety course. Red Cross instructor certification for successful completion.
- 4300 The School Health Program.** Three credits. Offers preparation for leadership roles in school health services, instruction, and emergency situations, with special emphasis on evaluation.
- 4340 Fitness Education for the Adult.** Three credits. (Same as PHED/REC 4340.) Planning, teaching, and participating in individual and group fitness programs for the adult. Offers preparation for administering and interpreting assessments of related components with understanding of physiological principles related to exercise in the adult. Major lifetime wellness activities covered.
- 4360 Teaching Human Sexuality.** Three credits. Assists individuals in developing, implementing, and evaluating human sexuality curricula and programs for schools (K-12) and other educational venues.
- 4370 Health and First Aid for Children (Pre-K-3).** Two credits. Skill and knowledge required to maintain a healthy and safe school or day-care environment for pre-K-3 children.
- 4390 Women's Health.** Three credits. Applies and extends the knowledge base of health care for women and provides students with the knowledge to help them enhance their own and others' health.
- 4400 Drugs and Violence in Health Education.** Three credits. Offers an understanding of the nature of drugs, relationships people form with drugs, and consequences of those relationships. Relationship of drugs to acts of violence considered as well as educational programs addressing issues related to drug use/abuse and acts of violence.
- 4460 Introduction to Epidemiology.** Three credits. Epidemiologic analysis including measures of disease frequency, measures of effect, association and causation, sources of inaccuracy, experimental and observational study designs.
- 4600 Technology Applications.** One credit. Prerequisite: An introductory course in computer literacy or equivalent with instructor permission; corequisite: HLTH 4601. Understanding and competency using a variety of technology applications related to the profession. Students required to enroll in corresponding lab during the same semester.
- 4601 Technology Applications Lab.** Two credits. Corequisite: HLTH 4600. Investigation and application of profession-specific software and hardware applications.
- 4700 School Health Coordinator.** Three credits. Prerequisites: HLTH 4300 and at least junior status or permission of instructor. Offers preparation for individuals to assume roles as school health coordinators. Emphasizes comprehensive school health and how it fits into K-12 education.
- 4810 Measurement and Evaluation.** Three credits. (Same as EXSC 4810.) Concepts and procedures used for applied measurement

and evaluation in health and human performance settings. Basic statistics, reliability and validity, measurement instruments in field and laboratory settings, and the administration of a variety of tests within discipline.

- 4860 Program Planning in Health Education.** Three credits. Historical and contemporary health education philosophy and theories, *Health Objectives for the Nation*, the Certified Health Education Specialist (CHES) process, ethical issues, diversity issues, and practice in various setting.
- 4870 Methods of Communicating and Marketing Health Education.** Three credits. Prerequisites: HLTH 3320 and 3340. Theory and practice of planning, implementing, and evaluating marketing and communication programs in community and public health education. Includes a review of health communication theories, social marketing, assessment of population needs, coalition-building, health literacy, health advocacy and campaign design, implementation, and evaluation.
- 4900 Certified Health Education Specialist (CHES) Review.** One credit. For Health majors; to be taken with HLTH 4250. Responsibilities and competencies on the Certified Health Education Specialist examination.
- 4920 Independent Study.** One, two, or three credits. (Same as ATHT/EXSC/PHED/REC 4920.) Independent study topics based on a study plan prepared in cooperation with a faculty supervisor. Culminates in a formal paper and/or comprehensive examination. Application forms must be completed and approved prior to enrollment. A maximum of three credit hours may be applied toward degree.

Hebrew [HEBR]

- 1010 Elementary Hebrew I.** Three credits. Foundation course in reading, writing, speaking, and aural comprehension.
- 1020 Elementary Hebrew II.** Second semester. Three credits. Prerequisite: HEBR 1010 or permission of instructor.
- 2010 Intermediate Hebrew I.** Three credits. Prerequisite: HEBR 1020 or permission of instructor. An intermediate course in reading, writing, and speaking Hebrew as well as aural comprehension at the intermediate level.
- 2020 Intermediate Hebrew II.** Second Semester. Three credits. Prerequisite: HEBR 2010 or permission of instructor. Continuation of HEBR 2010.

History [HIST]

- 1010 Survey Western Civilization I.** Three credits. A survey of Western humanity from the earliest cultures to 1715. **May be used to satisfy one part of the General Education Humanities and/or Fine Arts requirement. HIST 1010 is NOT a prerequisite for HIST 1020.**
- 1020 Survey Western Civilization II.** Three credits. A survey of Western humanity since 1715. **May be used to satisfy one part of the General Education Humanities and/or Fine Arts requirement.**
- 1110 Survey World Civilization I.** Three credits. A global approach to history, with cultural interchange as a major thematic focus; reasons for the rise and decline of civilizations. **May be used to satisfy one part of the General Education Humanities and/or Fine Arts requirement. HIST 1110 is NOT a prerequisite for HIST 1120.**

1120 Survey World Civilization II. Three credits. The impact of Western expansion upon the indigenous civilizations of Asia, Africa, and the Americas; their mutual interchange in the creation of the modern world. **May be used to satisfy one part of the General Education Humanities and/or Fine Arts requirement.**

2010, 2020 Survey of United States History I, II. Three credits each. Survey of the political, economic, social, cultural, and diplomatic phases of American life in its regional, national, and international aspects. HIST 2010 discusses the era from the beginning to 1877. HIST 2020 discusses the era from 1877 to the present. **These courses are prerequisite for all advanced courses in American history and satisfy the General Education History requirement. HIST 2010 is NOT a prerequisite for HIST 2020.**

2030 Tennessee History. Three credits. The role of the state in the development of the nation. **May be used to satisfy one part of the General Education History requirement.**

2040 Survey African American History I. Three credits. (Same as AAS 2040.) The role of African Americans in establishing and shaping the American nation. Covers their historical development and contributions to American art, music, literature, and religion.

2050 Survey African American History II. Three credits. (Same as AAS 2050.) The role of African Americans in shaping the American nation and creating a twentieth-century racial identity. Covers their historical development and examines their contributions to American art, music, literature, and religion.

Upper-Division History Course Offerings

Six hours of HIST 2010, 2020, or 2030 are required of all students and are prerequisite to all upper-division American History courses. Three hours of HIST 1010, 1020, 1110, OR 1120 are prerequisite for all other courses. Exceptions are stated in the course descriptions or may be made by the department.

History (United States)

3020 Topics in American History. Three credits. A detailed analysis of a topic pertinent to U.S. history. Topics vary from year to year. May be taken more than once for credit with different topic.

3030 Topics in African American History. Three credits. A seminar course exploring selected topics and problems in the African-American experience since 1619. Possible topics include the Great Migration, the life and work of Malcolm X, Pan-Africanism, Caribbean enslavement, the African American church, the African American woman, African American education, and the Harlem Renaissance. **This course may not be repeated for credit in either the major or minor.**

3040 Topics in American Cultural History. Three credits. Literature, arts, social sciences, and popular culture examined with regard to a particular topic (such as the history of morality or the history of cultural rebellion) in order to understand how Americans have reacted to conflicting values in society. May be taken more than once for credit with different topic.

3050 Topics in Southern Studies. Three credits. Detailed examination of a particular topic important to the region's society, life, and development. May be taken more than once for credit with different topic.

3060 Topics in Tennessee History. Three credits. Prerequisites: HIST 2010 and 2020. Detailed examination of a pertinent topic in Tennessee history; topics will vary.

3120 Military History of the United States. Three credits. Particular emphasis on land warfare; examines battles, campaigns, and wars and the military's relationship to American governmental, societal, technological, and managerial patterns.

3121 Geography of Tennessee. Three credits. (Same as GEOG 3120.) Focuses on the diverse physical and human landscapes of the state. Topics include weather and climate, landforms, vegetation and soils, population patterns and trends, economic activities (including agricultural and geographical perspectives on social and environmental issues).

3170 History of the American South in Film. Three credits. Explores the South's image in major motion pictures during the twentieth century. Examines the links between the portrait of the South on screen and the particular social, political, cultural, and economic concerns of the historical period in which the films were made.

4010 Colonial America. Three credits. Exploration and colonization of North America, relations between Native Americans, Europeans, Africans, and colonial societies in the context of the Atlantic world from 1492 to 1760.

4020 The American Revolution. Three credits. Examines the period from the Seven Years' War through the War of 1812, while emphasizing political, social, intellectual, and economic developments in the new United States.

4030 Jacksonian America, 1815–1850. Three credits. Major political, social, and economic developments in the awakening of American nationalism, Jacksonian democracy, expansionism, and the Mexican War.

4040 Civil War and Reconstruction. Three credits. Examines the various causes of the war, the military and political history of the war years, and the legacy of the war in Reconstruction, the Lost Cause, and American social and economic developments through World War I.

4050 Modern America, 1877–1914. Three credits. The nature and consequences of the shift of the United States from an agrarian to an urban and industrialized society between Reconstruction and World War I.

4060 Modern America, 1914–1945. Three credits. The increasing involvement of the United States in world affairs from World War I through World War II and the social and political consequences of economic complexity which resulted in prosperity, depression, and the New Deal.

4070 Modern America, Post–1945. Three credits. The major social, political, economic, and diplomatic developments in the history of the United States from 1945 to the present with particular emphasis on the role of government.

4130 The Sunbelt. Three credits. An overview of the economic, political, and cultural evolution of the Southern tier of states in the twentieth and twenty-first centuries.

4140 The United States West. Three credits. Emphasis on the area west of the Mississippi River from pre-contact to the twenty-first century. Explores major social, political, economic, and environmental issues with particular attention to race, class, gender, and the original inhabitants.

4150 The American South. Three credits. Major themes that have created and recreated Southern culture from the Colonial period to the present. Explores the major social, political, and economic factors that made and remade the region through time.

- 4341 Historical Geography.** Three credits. (Same as GEOG 4340.) Prerequisite: GEOG 2000 or permission of instructor. The changing human geography of the United States during four centuries of settlement and development. Emphasis on changing population patterns as well as patterns of urban and rural settlement.
- 4540 Geography of Native Americans.** Three credits. (Same as GEOG 4540.) Prerequisite: GEOG 2000 or permission of instructor. Lecture and field exercise format viewing America's native population from a geographic perspective. Native Americans will be examined geoarcheologically using geo-techniques to explore their past, present, and future; cultural ecologically—their symbiotic relationship with their surroundings; and through their economic and resource development—how they utilize natural and cultural resources that are presently on tribal lands.
- 4620 American Medical History.** Three credits. History of health and sickness in the United States from 1607 to the present and the increasing influence of science and public policy on the delivery of health care and the practice of medicine.
- 4640 Environmental History.** Three credits. Traces environmental change in America from European contact to the present and from wilderness to suburbia. Explains impact of growth, settlement, and resource exploitation on our national landscape and institutions.
- 4650 Religious Experience in America.** Three credits. Explores the nature of religion as experienced in American history focusing on the questions “How has religion affected America?” and “How has America affected religion?” Emphasis on the nineteenth and twentieth centuries and on the contact of and exchanges among traditions such as Protestant/Catholic Christianity, Judaism, Islam, Eastern religions, and Animism.
- 4660 American Architectural History.** Three credits. An analysis of the historical development of American architecture and of architecture as evidence of America's cultural, social, economic, and technological growth from 1607 to the present.
- 4670 American Urban History.** Three credits. Development and growth of cities and suburbs from the colonial period to the present with particular emphasis on urban institutions, problems, politics, culture, and society.
- 4680 History of Sport in America.** Three credits. The role of sport in American society from the colonial era to the present, with emphasis on how sporting activities reflect political, cultural, and economic characteristics of various time periods.
- 4690 Native American History.** Three credits. United States American Indian history from before European contact to the present with emphasis on issues important to native peoples and their active participation in a constantly changing world.
- 4710 American Biography.** Three credits. Lives and achievements of men and women most prominent in American history. Selected biographies and autobiographies will be read and analyzed.
- 4720 Boone's and Crockett's America.** Three credits. The mass movement of farm families into the interior of North America before 1860. Emphasis on Native American life, frontier politics, society, and culture, as well as the subsequent development of a “frontier myth” celebrating this folk migration.
- 4730 American Social History.** Three credits. Examines class, ethnicity, family life, and community in America from the colonial period to the present.
- 4740 American Cultural and Intellectual History.** Three credits. Explores the major issues in American cultural and intellectual history through an examination of American literature, philosophy, social sciences, fine arts, and popular culture.
- 4750 African American Social and Intellectual History.** Three credits. (Same as AAS 4750.) The changing ideology of race and the socio-economic status of African Americans in the American experience; contributions to the culture and institutions of the United States.
- 4760 America Divided: Race, Class, and Gender.** Three credits. Interaction of race, class, and gender in the lives of Americans within historical frameworks and how such interactions have shaped American social and political institutions.
- 4770 Women in America to 1890.** Three credits. Examines women's roles in the United States from colonial times to 1890, emphasizing experiences of different classes, races, and ethnic groups; work, family, and politics.
- 4780 Women in America Since 1890.** Three credits. Examines women's roles in the United States since 1890, emphasizing experiences of different classes, races, and ethnic groups; work, family, and politics.
- 4820 American Diplomatic History to 1900.** Three credits. An examination of United States foreign relations to 1900.
- 4830 American Diplomatic History Since 1900.** Three credits. An examination of United States foreign relations since 1900.
- History (European)**
- 3090 Topics in European History.** One to three credits. A detailed examination of a topic pertinent to European history. May be taken more than once for credit with different topic.
- 4210 Middle Ages.** Three credits. The progress of medieval civilization with emphasis on the period from 1100 to 1300.
- 4212 Intellectual and Cultural History of Early Modern Europe.** Three credits. Examines major trends and movements in artistic, literary, social, economic, political, scientific, and religious thought in cultural context and diffusion in society, and how these trends and movements have changed European concepts since the Enlightenment. Begins about 1200 to establish a background and then focuses on 1400 to 1789.
- 4213 Intellectual and Cultural History of Modern Europe.** Three credits. Examines major trends and movements in artistic, literary, social, economic, political, scientific, and religious thought in cultural context and diffusion in society, and how these trends and movements have changed European concepts since the Enlightenment. Begins about 1650 then focuses on 1789 to the present.
- 4220 Renaissance Europe.** Three credits. Examines the political, economic, social, intellectual, and cultural developments of Italy, France, England, Germany, and the Low Countries during the fourteenth through the seventeenth centuries.
- 4230 Reformation Europe.** Three credits. Examines the political, economic, social, intellectual, and cultural developments of Italy, France, England, Germany, and the Low Countries during the sixteenth and seventeenth centuries.
- 4240 Europe: Absolutism and Enlightenment.** Three credits. European history in the seventeenth and eighteenth centuries, covering social, economic, intellectual, and political developments.
- 4250 Europe: The French Revolution and Napoleon.** Three credits. The social, political, and economic aspects of the Old Regime the French Revolution, and the Napoleonic period in European history.

- 4260 France Since 1870.** Three credits. The social, political, intellectual, cultural, and economic history of France from the origins of the Third Republic to the present.
- 4270 Europe 1815–1900.** Three credits. Nineteenth-century Europe.
- 4280 Europe 1900–1939.** Three credits. Europe in the early twentieth century with emphasis on the expansion of democracy, continued industrialization, total war, and totalitarian ideologies.
- 4290 Europe Since 1945.** Three credits. Major European countries and European themes from 1945 to the present.
- 4310 Germany to 1870.** Three credits. The evolution of the German states from their Indo-European origins to their unification in a single German nation in 1871 with particular emphasis on the history of German men and women since the Middle Ages. The history of Austria and its possessions also included.
- 4320 Germany Since 1870.** Three credits. History of Germany from national unification in 1871 through its reunification in the contemporary world. Emphasis on the major social, cultural, political, intellectual, and economic developments of the period as they relate to both German men and women. The history of the Austro-Hungarian empire (1867-1918) and the modern Austrian state also included.
- 4330 Russia to the Twentieth Century.** Three credits. Russian history from its beginnings to the end of the nineteenth century.
- 4340 Russia in the Twentieth Century.** Three credits. A continuation of 4330 emphasizing the Revolution and the Soviet era.
- 4350 England to 1783.** Three credits. English history from earliest times to the end of the American Revolution with emphasis on major political, cultural, economic, and social developments.
- 4360 Britain in the Nineteenth Century.** Three credits. Political, economic, diplomatic, military, and cultural developments from the end of the Napoleonic era to Gladstone's retirement in 1894.
- 4370 Britain in the Twentieth Century.** Three credits. Political, military, imperial, economic, and social history of a changing Britain in its century of total war, imperial decline, and economic readjustment.
- 4610 History of Medicine.** Three credits. Medical developments and the relationship between medicine and society. Examines two medical traditions: the West and China. Focus not only on major developments in medicine but also on the systems of healing in these cultures; compares roles medicine played within these societies. Also investigates impact of Western scientific medicine on various systems of traditional medicine.
- 4790 Women in Europe Since 1700.** Three credits. A comparison of the social, intellectual, cultural, political, and economic history of women's lives in Great Britain, France, Germany, and Russia/USSR in the modern era.
- History (Global)**
- 3070 Topics in World History.** Three credits. A detailed examination of a topic pertinent to world history. Topics vary. May be taken more than once for credit with different topic.
- 3080 Topics in Modern Middle East History.** Three credits. A major problem or political or social development in the contemporary Middle East. May be taken more than once for credit with different topic.
- 3130 The Vietnam War.** Three credits. Examines military, diplomatic, political, and cultural aspects of the Vietnam War. Causes of the war; interplay between military, diplomatic, and domestic policy; historical memory of the conflict through analysis of texts, oral histories, films, and material culture.
- 3140 Latin American History.** Three credits. Examines the chronological and basic periods, themes, and topics of Latin America's economic, social, political, and cultural histories from pre-Colombian times to the present.
- 3150 Twentieth Century Global History.** Three credits. An integrated examination of major themes and selected area studies of the twentieth century. Themes include the world system, colonialism, the Great Depression, both world wars, the cold war, emergence of independent countries, economic globalization and dependency, religious stirrings, urbanization, massive migrations, social revolution, and the postindustrial world.
- 3160 Study Abroad in Africa.** Six credits. Theoretical as well as first-hand experience on the history and cultures of Africa. **Course may not be repeated for additional history hours.**
- 4410 Classical History.** Three credits. Ancient Greece and Rome, from about 2,000 B.C. to A.D. 476, emphasizing the classical historians, Greek and Roman culture.
- 4420 The Medieval Mediterranean World.** Three credits. Examines the political, economic, social and intellectual, and cultural development of the countries bordering the Mediterranean.
- 4430 Sub-Saharan Africa.** Three credits. (Same as AAS 4430.) Prerequisite: HIST 2040, 2050, 1010, 1020, 1110, or 1120 or AAS 2040 or 2050. Survey of the history of Africa from prehistoric times to the present. Emphasis on the early African kingdoms, European imperialism and colonialism, and the role of Africa as a contemporary world force.
- 4440 The Middle East.** Three credits. The rise and spread of Islam, the Ottoman Empire, European imperialism in the Middle East, and contemporary developments. Emphasis on cultural contributions of the Middle East to Western civilization.
- 4450 Japan.** Three credits. Japanese history from the formation of the first Japanese political state to the country's emergence as a post-World War II economic superpower, focusing on the interconnection between cultural, economic, and political developments.
- 4460 China.** Three credits. Chinese history from antiquity to the present People's Republic, stressing social history and the unique cultural features defining China's civilization.
- 4470 Canada.** Three credits. Canadian history from the colonial era to the present with emphasis on European competition and major internal economic, religious, and cultural developments.
- 4480 South America.** Three credits. Cultural, economic, and political traditions since 1492.
- 4490 Mexico and the Caribbean.** Three credits. (Same as AAS 4490.) The development of cultural, economic, and political traditions since 1492.
- 4510 Colonial Latin America.** Three credits. Examines the indigenous societies present before European colonization and the first encounters in Mexico, the Caribbean, and South America. Analyzes political structures imposed by the Spanish as well as the social and cultural implications of colonialism and miscegenation.

- 4520 Modern Latin America.** Three credits. Prerequisite: HIST 1010, 1020, 1110, 2040, or 2050. Nineteenth- and twentieth-century Latin America. Examines colonial background, then focuses on the post-Independence period. Explores economic, political, social, and cultural developments since Independence.
- 4530 Latin American-United States Relations.** Three credits. Relations between the United States and Latin America in the nineteenth and twentieth centuries with emphasis on the effect of cultural differences on inter-American diplomacy.
- 4610 History of Medicine.** Three credits. Medical developments and the relationship between medicine and society. Examines two medical traditions: the West and China. Focus not only on major developments in medicine but also on the systems of healing in these cultures; compares roles medicine played within these societies. Also investigates impact of Western scientific medicine on various systems of traditional medicine.
- 4810 History of Women in the Third World.** Three credits. Connections between modern colonialism and development of third-world feminisms. Focuses first on conquest and colonialism and the consequences for third-world women. Focus moves to post-colonial societies and expands to include women's political, economic, and social roles in the three regions of Africa, China, and Latin America.
- 4840 World War II.** Three credits. Examines various aspects of the military, diplomatic, social, economic, and cultural changes caused by the global cataclysm of World War II.
- 4850 Material Culture Resources in World History.** Three credits. The material culture resources (architecture, furniture, tools, utensils, weapons, ceremonial objects, etc.) of the world's major civilizations. Provides a basis for studying how various cultural styles have influenced the development of our own material culture resources.

History (General Courses)

- 3010 The Historian's Craft.** Three credits. Investigates the full range of activities of professional historians, teaches skills of research and writing history, and prepares students to enter the professional job market or to seek further education. Required for all History majors.
- 3012 University and Community History Project.** Three credits. In-depth field study of some aspect of MTSU or local community history through the use of oral history methods and historical research. Interview skills and public presentation of findings emphasized. Topics vary.
- 3110 Explorations in Public History.** Three credits. Historical artifacts with special emphasis on eighteenth- and nineteenth-century American architecture and furnishings. Related work in techniques of genealogical research. Readings, discussions, reports, and field trips.
- 3180 History of Modern War in Film.** Three credits. Modern war as presented in major motion pictures. Analyzes the cultural responses to war in the twentieth and twenty-first centuries through movies made about war.
- 3720 Cultural Ecology.** Three credits. (Same as ANTH 3720; GEOG 3720.) Prerequisites: 3 hours anthropology or geography. Comparison of ecological systems utilized by tribal, peasant, and industrialized peoples of the world. Special attention paid to the theoretical approaches examining the interface of the environment and culture, the evolution of modes of subsistence, and contemporary development and indigenous people.

- 4361 Cultural Geography.** Three credits. (Same as GEOG 4360.) Prerequisite: GEOG 2000 or permission of instructor. Description and explanation of spatial patterns and ecological relationships in human culture. Emphasis on "reading" the cultural landscapes.
- 4471 Rural Settlement.** Three credits. (Same as GEOG 4470.) Prerequisite: GEOG 2000 or permission of instructor. A geographical analysis of forms, structures, and distribution of rural settlements in distinctive parts of the earth based upon their origin, function, and development. Special emphasis in analyzing rural settlements of middle Tennessee.
- 4630 Quantitative History.** Three credits. Examines quantitative reasoning in historical research. Covers historiographical questions and practical research skills. Includes historical causality, historical change over time, data preparation, sampling, and the interpretation of quantitative data.
- 4860 Historical Archaeology.** Three credits. (Same as ANTH 4860.) Disciplines of historical archaeology, including examination of archaeological evidence, historical documentation, and interpretation of evidence.
- 4898 Honors in History.** Three credits. For students of advanced standing and superior academic ability. Admission only by permission of the Department Honors Committee and approval by the University Honors Subcommittee.
- 4950 Public History Internship.** Three credits. Student works in a public or private agency or organization under the guidance of a professional mentor in a public history field related to career goals.
- 4970 Senior Independent Research.** Three credits. Prerequisite: Permission of department and professor. For advanced History majors. Research project under the careful guidance of a faculty member; substantive research product in history completed. May be taken only once for History major credit.

Human Sciences [HSC]

Human Sciences (General)

- 1010 Career Orientation.** One credit. Development and scope of human sciences as a profession; its wide variety of career opportunities with analysis of interests, aptitudes, proficiency, and education related to success in these areas. Two hours per week until midterm.
- 3020 Presentation Techniques.** Three credits. Principles and techniques of effective presentations and demonstrations. Opportunities for experience in presenting demonstrations to the public through mass media. Three hours per week.
- 3430 Housing.** Three credits. Evaluation of housing and equipment in terms of family needs, economics, building codes, legislation, and technological developments. Housing alternatives presented and analyzed with emphasis on future trends in the field. Spring only.
- 4000 Senior Seminar.** One credit. Prerequisites: HSC 1010 and junior standing. Examines human sciences professions from a global perspective. Identifies skills for success in developing and managing a career. Includes resume and cover letters, leadership, networking, life/work planning, and ethics and professionalism in human sciences fields.

4041- Seminar in Human Sciences. Prerequisite: Permission of department. Individual research and/or analysis of contemporary problems and issues in a concentrated area of study. For advanced students. Can be repeated for up to 9 hours.

4041 Child Development and Family Studies. Three credits.

4042 Nutrition and Food Science. Three credits.

4043 Textiles, Merchandising, and Design. Three credits.

4044 Interior Design. Three credits.

4051- Advanced Problems in Human Sciences. Prerequisite: Permission of department. Opportunity for advanced students to do independent study or conduct research in their areas of emphasis. Topic of study or research to be determined by student and professor prior to registration. Can be repeated for up to 9 hours.

4051 Child Development and Family Studies. Three credits.

4052 Nutrition and Food Science. Three credits.

4053 Textiles, Merchandising, and Design. Three credits.

4054 Interior Design. Three credits.

4060 Readings in Human Sciences. One to three credits. Prerequisite: Permission of department. Selected readings in current trends, developments, and research in human sciences. Topic of independent study to be determined prior to registration.

4101- Internship. Six credits. Prerequisites: Permission of department, minimum 2.25 GPA, and specific program area course requirements. Experiential learning opportunity to provide students with supervised professional work experience in their major fields. Minimum of 300 hours at internship site plus seminars.

4101 Child Development and Family Studies (Prerequisites: CDFS 2350, 3310, 3320, 3330, 3390, 4140, 4310, 4340, 4350, 4390, 4391, and 4790). Spring and Summer only.

4102 Nutrition and Food Science (Prerequisites: NFS 3200, HSC 4430, and approval of advisor).

4103 Textiles, Merchandising, and Design (Prerequisites: retail-oriented: TXMD 1170, 2180/81, 3150 or 2320, 3170, 4150; design-oriented: TXMD 1110, 1170, 2320, 2180/81, 3220.)

4104 Interior Design (Prerequisites: IDES 3730, 4750).

4410 Consumer Economics. Three credits. Study of the economic system and factors influencing consumer decisions and the marketplace; identifies social, economic, and political forces shaping consumer demands; and analyzes the influence of customs, trends, peer groups, and advertising.

4420 Personal and Family Management. Three credits. Examines management functions. Emphasis on management roles and responsibilities of human sciences professionals, the relationship of the learning organization concept to the human sciences profession, and the use of quality improvement techniques to solve problems encountered by professionals.

4430 Resource Management. Three credits. Opportunity to identify and integrate the management functions of the human sciences areas. Emphasis on management roles and responsibilities of human sciences professionals, the relationship of the learning organization concept to the human science profession, and the use of quality improvement techniques to solve human sciences-related problems.

4450 Professionalism in Consumer Services. Three credits. The role, functions, and responsibilities of consumer services professionals employed in business, government, and other organizations.

Humanities [HUM]

2130 Medical Vocabulary. Three credits. Principles of forming and deciphering medical terminology.

2610 Foreign Literature in Translation. Three credits. Prerequisites: ENGL 1010 and 1020. Representative works of French, German, and Hispanic authors in English translation. No foreign-language proficiency required. **Carries General Education credit.**

3000 Special Topics in Foreign Language Linguistics. Three credits. Prerequisite: ENGL 3570, PSY 4820, ANTH 3410, or SPAN 3120 or permission of instructor. Selected topic in theoretical linguistics focusing on languages other than English. Content varies from semester to semester. May be repeated under a different subtitle.

3365 Hispanic Writers in American Literature. Three credits. (Same as ENGL 3365.) Acquaints students with the literary works of Hispanic Americans writing in English. Emphasis on analysis of the intersection of cultures and traditions and the formation of Hispanic American identity.

3500 Latino Images in U.S. Film. Three credits. Prerequisites: ENGL 2020 or 2030 or permission of instructor. Explores the past and present portrayals of Latinos in U.S. cinema.

3600 Israeli Cinema. Three credits. Prerequisite: ENGL 2020 or 2030 or permission of instructor. Explores personal and political conflicts conveyed by filmmakers from Israel.

3950 Women in the Middle Ages. Three credits. The role of women in western Europe from the late fifth to the end of the fifteenth century, emphasizing their cultural contributions in the courtly world, the church, the world of work, and the arts.

4000 Women of the Middle East: Representations and Perceptions. Three credits. Prerequisite: ENGL 2020 or permission of the instructor. Explores images of Middle Eastern women and their reception over time.

4550 The Grail Legend in Film and Literature. Three credits. Prerequisites: ENGL 2030 and either HUM 2610 or ENGL 2020; or permission of the instructor. Explores the origin and development of the Grail legend in Western art primarily in literature and film.

4610 Comparative Literature. Three credits. Comparative literature in terms of its concerns with literary theory and criticism as well as its practical application. A reading knowledge of a foreign language is recommended.

Information Systems [INFS]

1000 Introduction to Computers and Related Topics. Three credits. An overview of the workings of a computer including hardware, software, and applications. Provides hands-on experience with various software packages. (Not open to business majors.)

1010 Social Networking and Collaborative Technologies. Three credits. Recent trends in social networking technologies, focusing on such popular applications as Facebook and LinkedIn. Covers modern developments in collaborative enabling technologies, including blogs, wikis, and groupware; technologies to facilitate personal, academic, and professional growth; and privacy, security, and ethical issues surrounding the use of social networking and collaborative technologies.

2200 Introduction to Microcomputing. Three credits. Microcomputer applications and the microcomputer environment. (Not open to CIS majors.)

2400 Web Development. Three credits. Web development using HTML, XHTML, CSS, JavaScript, and multimedia Web content. Covers planning, design, development, and publishing of a Web site.

- 2600 Programming Logic with VB.NET.** Three credits. Programming logic and concepts using the VisualBasic.NET programming environment. Includes program design, data types, data structures, flow control, arrays, error control, graphical user-interfaces, and file processing as applied in the context of business information systems problem solving.
- 2720 COBOL Applications.** Three credits. Prerequisite: INFS 2200 or permission of instructor. Systems of commercial computer programming using Common Business Oriented Language in solving business problems.
- 2730 Programming Languages.** Three credits. Object-oriented programming methods. Topics include fundamental programming structures, objects and classes, encapsulation, inheritance and polymorphism, exceptions, graphical user-interfaces and event handling, and file processing. Emphasis on practical applications of object-oriented concepts in business context.
- 3100 Principles of Management Information Systems.** Three credits. Prerequisite: Junior standing. The role of information technology in organizations.
- 3200 Business Application Development.** Three credits. Prerequisites: INFS 2200 or foundation knowledge of microcomputer applications; junior standing. An applications-oriented course; extensive laboratory work and development of projects.
- 3400 Object-Oriented Programming with C#.NET.** Three credits. Prerequisite: INFS 2600 or equivalent. Introduction to object-oriented programming methods. Topics include objects and classes, encapsulation, inheritance and polymorphism, exceptions, graphical user-interfaces and event handling, streams and files, and deployment. Emphasis on practical applications of object-oriented concepts in a business context.
- 3500 Knowledge Management Systems.** Three credits. Analysis, design, and implementation of knowledge management systems in organizations. Addresses the facilitating and enabling role of information management and communication technologies. Technologies covered include neural network, software agent, workflow management, integrated communication network, expert systems, content management, Web portal, and search mechanisms. Hands-on projects to reinforce understanding of theoretical frameworks.
- 3700 Systems Analysis and Design.** Three credits. Prerequisites: 6 hours of information systems; junior standing. Applied system analysis and design (concepts and techniques) including problem definition, feasibility analysis, various modeling methods, hardware and software selection, documentation, physical design, and auditing procedures. Appropriate automated technologies used.
- 3800 Project Management and Systems Development.** Three credits. Prerequisite: Junior standing. Explores the roles and environments of project management, the product life cycle, and techniques for work planning, control, and evaluation. Covers developing a project plan, resource management, project scope and quality, budgeting, and managing project risk
- 3990 Independent Study in Information Systems.** One to three credits. Prerequisites: Junior standing and consent of department chair. Assigned research or projects in contemporary problem areas in the information systems discipline under direct faculty supervision. Aggregate credits allowable toward a degree may not exceed 3 hours under 3990 courses.
- 4200 Data-Enhanced Internet Applications.** Three credits. Prerequisite: INFS 3200 or permission of instructor. Focuses on database system design, deploying, maintaining, and querying a database using appropriate hardware and software. E-commerce applications in a microcomputer environment.
- 4300 Security Assurance and Information Systems Auditing.** Three credits. An in-depth look at developing, implementing, monitoring, and auditing an information system's security. Managerial concepts for security of operating systems, administering security, and legal/ethical/policy issues examined as well as a hands-on approach to implementing operating systems security techniques. Explores the advancement in security detection and implementation, problem-solving techniques, and the role and importance of the information systems auditor.
- 4420 Information Systems Internship.** Three credits. Prerequisites: Junior standing, consent of advisor, and a plan of activities with the associated firm prior to registration. Active employment with a governmental agency or business firm for information systems/accounting fieldwork; credit given for experience and research upon completion of acceptable work and formal report. Aggregate credits allowable toward a degree in information systems may not exceed 3 hours under 4420 courses.
- 4500 New Technologies in Information Systems.** Three credits. Prerequisites: 12 hours of information systems credit; senior standing. Future technological advances including automating the creation and maintenance of systems with CASE tools, systems engineering packages, and integrated CASE technologies.
- 4740 Information Resource Management.** Three credits. Prerequisites: 6 hours of information systems; junior standing. Information technologies utilizing computers as a competitive tool in a global environment.
- 4760 Advanced Programming.** Three credits. Prerequisites: INFS 2720; junior standing. Functional programming experience in structured programming techniques; top-down design; advanced file handling and maintenance techniques to include sequential, indexed sequential, direct, and relative file organization; interactive, menu-driven applications; and uploading/downloading programs to a central site. Requires extensive laboratory work.
- 4790 Database Design and Development.** Three credits. Prerequisites: INFS 3200; junior standing. Fundamental concepts: conventional data systems, integrated management information systems, database structure systems, data integration, complex file structure, online access systems. Emphasis on total integrated information systems database and database management languages.
- 4830 Database Programming.** Three credits. Prerequisites: INFS 4790 or consent of instructor. Operational database design and implementation. Development of the interfaces that enable end users to query the database contents and transform data into information. Requires each student to participate fully in a group project.
- 4900 Business Data Communications.** Three credits. Prerequisites: 6 hours of information systems; junior standing. Practical explanation of data communications technologies and basic applications for business. Includes projects to develop a prototype network in a lab environment for hands-on experience.
- 4950 Advanced Web-Enabled Application Development.** Three credits. Prerequisites: INFS 2400, 3400, and 3800. Server-side Web programming techniques and multitier application development. Includes accessing databases and XML documents, creating and processing Web forms, methods of Web form validation, maintaining session state, Web application security, and configuration and deployment.
- 4980 Information Systems Project.** Three credits. Prerequisites: Senior standing and 12 hours of information systems credit including INFS 3200 and 3700. Systems Development Life Cycle (SDLC) design

and implementation. Appropriate automated technologies used throughout the course.

4990 Independent Study in Information Systems. One to three credits. Prerequisites: Senior standing and consent of department chair. Assigned research or projects in contemporary problem areas in the information systems discipline under direct faculty supervision. Aggregate credits allowable toward a degree may not exceed 3 hours under 4990 courses.

Interdisciplinary Microanalysis and Imaging Center [IMIC]

4820 Practical Training in Microanalysis Techniques. One credit. Introduces students to one microanalytical technique. Individual attention provided with the goal that the student will become an independent user with the technical skills to pursue research projects safely, properly, and independently. Emphasis on sample preparation, data collection, and data analysis. May be retaken with emphasis on a different instrument. Pass/Fail.

Interior Design [IDES]

2700 Interior Design Fundamentals. Three credits. Prerequisite: Sophomore standing; admission to IDES professional course sequence. IDES 2700 and 2710 must be taken during same semester. Introduction to interior design as a profession, career opportunities, professional organizations. Development of handblock lettering styles and techniques. Exploration of elements and principles of design with emphasis on the impact on the built environment. Five contact hours per week.

2710 Interior Design Graphics. Three credits. Prerequisite: Sophomore standing; admission to IDES professional course sequence. IDES 2700 and 2710 must be taken during same semester. Drafting techniques and media commonly used in interior design. Will include orthographic, isometric, axonometric, and oblique drawings, graphic symbols, and entourage. Five contact hours per week.

2930, 2940, 3970, 3980 Cooperative Education. Three credits. Prerequisite: Permission of instructor. Experiential learning that occurs in real employment situations. Must be taken in sequence or approved by the IDES coop coordinator.

3600 House Design. Three credits. Prerequisites: IDES 2700 and 2710; must be taken concurrently with IDES 3750. Human shelter: the personal dwelling. Emphasis on the organization and documentation of interior space, light frame construction methods and materials, structure, and systems derived from human needs and activities. Five contact hours per week.

3700 Interior Design Visual Presentations I. Three credits. Prerequisites: IDES 3600; ART 1620. Interior rendering techniques, perspective drawing, sketching, and operation and care of equipment necessary in the effective communication of design solutions. Five contact hours per week.

3710 Principles of Interior Design. Three credits. Prerequisites: IDES 2700 and 2710. Basic principles, theories, and procedures involved in creative problem solving. Five contact hours per week.

3720 Interior Materials and Finishes. Three credits. Prerequisites: IDES 2700 and 2710. Materials and finishes used in the treatment of interior space to be examined in terms of properties, specifications, installation, and manufacturers.

3730 Residential Design I. Three credits. Prerequisites: IDES 3710, 3720, and 3600. Corequisite: IDES 3700. Analysis and organization of components, materials, and space relative to human scale and habitability. Influence factors of architecture, function, and economics on the design of interior environment. Emphasis on the data gathering and space planning. Five contact hours per week.

3740 Interior Design Business Practices. Three credits. Prerequisite: IDES 3720; must be taken concurrently with IDES 4750. Business practices, ethics, Americans with Disabilities Act, building, fire, and life safety codes as applied to the interior design profession.

3750 Interior Design Visual Presentations II. Three credits. Prerequisites: IDES 2700, 2710; corequisite: IDES 3600. Presentation techniques using computer-aided drafting as applied to the interior design profession. Emphasis on 2-dimensional drawings. Five contact hours per week.

3760 Interior Design Visual Presentations III. Three credits. Prerequisite: IDES 3750. Presentation techniques using computer-aided drafting as applied to the interior design profession. Emphasis on 3-dimensional drawings and customizing techniques. Five contact hours per week.

3770 Advanced Computer Applications in Interior Design. Three credits. Prerequisite: IDES 3750. Computer applications used in creating interior design presentations. Emphasis on rendering and illustration. Five contact hours per week.

4620 House Furnishings. Three credits. Design principles; space planning; materials; furniture styles, selection, and buying. Four contact hours per week. **Not accepted for credit toward Interior Design major.**

4700 History of Interiors. Three credits. Prerequisite: Junior standing. Survey of historic styles from antiquity through 18th Century Europe. Emphasis on major design characteristics of interior architectural and furnishing styles.

4710 Survey of Contemporary Interior Design. Three credits. Prerequisite: IDES 4700. Survey of American interiors and the development of contemporary interiors from the early nineteenth century to the present with consideration given to style characteristics, cultural influences, designers, and relationships among styles.

4730 Residential Design II. Three credits. Prerequisites: IDES 3730, 3760, 4740, and 4750. Corequisites: IDES 4780 and 4790. Advanced studio experiences in residential interiors. Emphasis on designing for special populations, sustainable design, and multicultural influences. Five contact hours per week.

4740 Lighting Design. Three credits. Prerequisites: IDES 3710, 3730, and 3750. Corequisites: IDES 3740 and 4750. Principles, terminology, design requirements, and equipment for general and decorative illumination as utilized in the interior environment. Methods of light generation, control, product analysis, selection, and specification.

4750 Introduction to Commercial Design. Three credits. Prerequisite: IDES 3730; corequisites: IDES 3740 and 4740. Issues and procedures found in the commercial interior design field; utilization of resources, human factors and client needs in planning and developing design solutions for office spaces. Five contact hours per week.

4760 Contract Design I. Three credits. Prerequisites: IDES 3740, 4730, 4750, and 4790. Specific human and physical needs encountered in the total design of interiors of a public nature. Emphasis on health care and institutional spaces. Five contact hours per week.

- 4770 Contract Design II.** Three credits. Prerequisite: IDES 3740, 4730, 4750, 4790. Advanced studio experience in contract design. Emphasis on problem solving, documentation, and presentation of hospitality spaces. Five contact hours per week.
- 4780 Interior Design Portfolio.** Three credits. Prerequisite: IDES 4750; corequisites: IDES 4730 and 4790. Preparation of interior design portfolio, including projects, resumes, and job search skills. Design of retail spaces. Review of NCIDQ exam. Five contact hours per week.
- 4790 Interior Construction Documents.** Three credits. Prerequisite: IDES 4750; corequisites: IDES 4730 and 4780. Advanced studio experience addressing residential and commercial interior construction techniques, documentation, and project management. Five contact hours per week.

Italian [ITAL]

- 1010 Elementary Italian I.** First semester. Three credits. An introductory course in the Italian language and culture, with special emphasis on daily expressions and forms of communication.
- 1020 Elementary Italian II.** Second semester. Three credits. Prerequisite: ITAL 1010 or advanced placement. Continuation of ITAL 1010. Increased emphasis on the acquisition of fluency in Italian.
- 2010 Intermediate Italian I.** Three credits. Prerequisite: ITAL 1020 or permission of instructor. A review of Italian grammar with reading and oral exercises designed to improve understanding of written and spoken language.
- 2020 Intermediate Italian II.** Second Semester. Three credits. Prerequisite: ITAL 2010 or permission of instructor. Continuation of ITAL 2010.

Japanese [JAPN]

- 1010 Elementary Japanese I.** Three credits. A foundation in reading, writing, speaking, and aural comprehension.
- 1020 Elementary Japanese II.** Second semester. Three credits. Prerequisite: JAPN 1010 or equivalent. A continuation of materials introduced in 1010.
- 2010 Intermediate Japanese I.** Three credits. Prerequisite: JAPN 1020 or equivalent.
- 2020 Intermediate Japanese II.** Second semester. Three credits. Prerequisite: JAPN 2010 or equivalent.
- 3010, 3020 Advanced Japanese.** Three credits. Prerequisite: JAPN 2020 or equivalent. A continuation of modern Japanese. Emphasis on linguistic and communicative skills in speaking, reading, writing, and listening. Includes further study of Japanese culture for enhanced understanding of the language.
- 3030 Advanced Japanese III.** Three credits. Prerequisite: JAPN 3020 or permission of instructor. A continuation of JAPN 3020. Emphasis on linguistic and communicative skills in speaking, reading, writing, and listening. Includes further study of Japanese culture for enhanced learning of the language.

Journalism [JOUR]

- 1020 American Media and Social Institutions.** Three credits. (Same as EMC/RIM 1020.) The power of the mass media and its effect on social institutions and practices. Develops skills of qualitative and quantitative social science research in the area of mass communication processes; examines media as social, cultural, and economic institutions that shape the values of American society, its political dialogues, its social practices, and institutions.
- 2710 Media Writing.** Three credits. Prerequisites: ENGL 1010 and 1020 or equivalents. Theory and practice of writing for print and electronic media according to the techniques, styles, and formats of various media. Laboratory required.
- 3000 Introduction to Motion Pictures.** Three credits. (Same as EMC 3000.) Prerequisite: Junior standing or permission of instructor. The development and role of motion pictures in America, including the history of films and filmmakers, the influence of film on American culture, and film criticism.
- 3090 Reporting.** Three credits. Prerequisite: JOUR 2710. Theory and practice of basic journalistic skills, including the gathering, evaluating, and processing of news copy for newspapers. Classwork will be submitted to student or local newspapers.
- 3100 Music as Popular Culture.** Three credits. (Same as RIM 3100.) Prerequisite: Admission to candidacy. Introduces range of scholarly approaches to the study of popular music. Encourages perspectives other than those of "producer" or "consumer." Requires applications of analytical and critical methods in research paper assignment.
- 3450 Editing.** Three credits. Prerequisite: Admission to candidacy. Theory and practice in the art of copy editing, including editing, language skills, newspaper style, news judgment, headline writing, photo editing, cutline writing, and page design.
- 3510 Media History and American Culture.** Three credits. (Same as EMC 3510.) Development of American journalism and the mass media from Colonial times to the present, including the role and influence of mass media on American culture, technical advances, and contributions of individual personalities.
- 3520 Specialized Journalism.** Three credits. Prerequisite: JOUR 3090 and admission to candidacy. The unique facets of print journalism not available in other courses. Topics include investigative, online, environmental, sports, medical, political reporting, or opinion writing. May be repeated up to 6 credits.
- 3530 Feature Writing.** Three credits. Prerequisite: Admission to candidacy or permission of instructor. Theory and practice of writing feature stories for newspapers and magazines. Assignments in writing for professional publications as well as the student newspaper.
- 3580 MC Practicum.** One to three credits. Prerequisites: Admission to candidacy; junior standing; permission of instructor. Practical experience in an on-campus mass communication setting. **Note:** Total credit for practicum and internship courses cannot exceed 3 credits. Pass/Fail.
- 3590 Magazine Writing and Editing.** Three credits. Prerequisites: Admission to candidacy; JOUR 3530. Types of magazines and editorial needs; practice in magazine article writing.
- 3650 Free Expression, Mass Media, and the American Public.** Three credits. (Same as EMC/RIM 3650.) A general introduction to the issues surrounding free expression and its relationship to mass media in contemporary America. Comprehensive analysis of the

history, philosophies, cases, and controls associated with freedom of expression.

4000 MC Internship. One to three credits. Prerequisites: Admission to candidacy; upper-division standing; permission of the internship coordinator. Advanced students gain practical experience in a professional setting. **Note:** Total credit for internship and practicum courses cannot exceed 3 credits. Pass/Fail.

4210 Mass Communication and Society. Three credits. (Same as EMC 4210.) Prerequisite: Junior standing. Theories of the process of mass communication, how media affect society, the evolution within a social and cultural context, ethical and social dimensions. Extensive reading in theory, history, and research. Media-content emphasis varies depending on instructor's expertise.

4250 Mass Media Law. Three credits. (Same as EMC 4250.) Prerequisites: JOUR 1020; junior standing. Examination of legal guarantees and restrictions on the flow of information using the case study method. Focus on libel, privacy, obscenity, and the special restrictions placed on advertising, broadcasting, cable TV, and the Internet.

4300 Reviewing and Criticism. Three credits. Prerequisite: Admission to candidacy or permission of instructor. Theories and practice of reviewing and criticism in the mass media. Overview of current trends in film, theatre, music, books, and other entertainment media. Practice in critical and analytical writing.

4440 Advanced Reporting. Three credits. Prerequisite: Admission to candidacy. Advanced theory and practice in news reporting, emphasis on coverage of governmental affairs and other public affairs-related assignments, including an introduction to interpretive and investigative reporting techniques.

4660 Mass Media Research. Three credits. (Same as EMC 4660.) Prerequisite: Junior standing. Overview of contemporary research methods, analysis, and evaluation of current research, and design and execution of a study. Emphasis on public opinion and media research.

4780 Media and Markets. Three credits. Prerequisite: Junior standing. Approaches to understanding media audiences. Examines tensions between the business and public functions of media, and social and ethical conflicts related to media marketing.

4790 Global News and World Media Cultures. Three credits. (Same as EMC 4790.) Prerequisite: Junior standing. Systems and philosophies associated with gathering international news and news coverage in different regions. Looks at global communication systems and ownership; examines how cultures shape news and the role of the individual in reporting news internationally. Includes discussion of development issues and role of global advertising and public relations.

4800 Seminar in Media Issues. Three credits. (Same as EMC 4800.) Prerequisite: Junior standing. Examination and critical evaluation of issues relevant to the operation and functions of mass media, including their relationships to each other and to government, advertisers, consumers, and other publics. May be repeated up to 6 credits.

4810 Global Comparative Media Systems. Three credits. (Same as EMC 4810.) Prerequisites: EMC/JOUR 4790 or permission of instructor and junior standing. A close comparative study of chosen media systems in regions of the world. Examines print, broadcast, entertainment, and new media in Western and Eastern Europe, Asia and the Pacific Rim Region, the Middle East, Africa, and the Americas. Media interactions with an influence on the geographic,

demographic, linguistic, cultural, economic, and political structures of countries.

4850 Ethics and Mass Communication. Three credits. (Same as EMC 4850.) Prerequisite: Junior standing. Examination of ethical concerns of media practitioners illuminated by study of selected current ethical issues and an overview of the cultural and philosophical basis of socially responsive mass media.

4900 Individual Problems in Mass Communication. One to three credits. (Same as EMC 4900.) Prerequisites: Admission to candidacy; permission of instructor. Independent study projects or research related to media issues or professions. Pass/Fail.

Latin [LATN]

1010 Elementary Latin I. Three credits. A foundation course in Latin grammar, word derivations, and reading. Special attention given to contributions of Latin to legal and medical terminology.

1020 Elementary Latin II. Second semester. Three credits. Prerequisite: LATN 1010 or equivalent. Continuation of materials introduced in LATN 1010. Increased emphasis on reading Latin texts.

2010 Intermediate Latin I. Three credits. Prerequisite: LATN 1020 or advanced placement. Includes readings from both classical and later periods, prose and verse.

2020 Intermediate Latin II. Three credits. Prerequisite: LATN 2010 or advanced placement. Continuation of LATN 2010.

Leadership Studies [LEST]

3010 Leadership Theories and Practices. Three credits. Examines prominent leadership theories, approaches, and research.

3245 Women, Leadership, and Communication. Three credits. (Same as ORCO 3245.) Prerequisites: COMM 2300, 3340, and 3225; ORCO 3240. Communication behaviors and issues unique to women in leadership positions. Students exposed to various activities and discussions designed to develop critical-thinking skills, broaden perspectives, adapt decision-making skills to the professional environment, and create professional relationships.

4001 Integrative Seminar in Leadership Studies. One credit. Prerequisites: Completion of Leadership Studies minor coursework or permission of instructor. Culminating experience aimed at interconnecting learning from courses in the Leadership Studies minor. Pass/Fail.

4500 Topics in Leadership Studies. Three credits. Prerequisite: Completion of 60 credit hours. An in-depth study of a special topic which is significant in leadership studies literature and/or practice.

Library Science [LIBS]

4150 Books, Media, and Literacy for Children. Three credits. Materials suitable for elementary school children. Includes a study of leisure time and curricular materials, criteria for evaluating materials, and related aids in selection of materials and their use in a classroom setting.

4160 Books, Media, and Literacy for Young People and Adults. Three credits. Materials suitable for young adults and adults, criteria for selection and evaluation of materials, and their use in a classroom setting.

Management [MGMT]

Management (General)

- 1500 First-Year Seminar.** One credit. Only for students with fewer than 30 hours or first-semester transfer students. Designed as an elective for first-year declared management majors and others interested in the management major. Introduces course requirements for a major in management, options for management electives, diverse subfields, and career options.
- 3610 Principles of Management.** Three credits. Prerequisite: Junior standing. Concepts of the management functions of planning, organizing, and controlling with an emphasis on behavioral science concepts as applied to managing people in organizations.
- 3630 Organization Theory.** Three credits. Prerequisite: MGMT 3610. The organization as a system. Emphasis on the external environment, performance measurement, structure (including contingency theory of organization design), bureaucracy, and the impact of behavioral aspects on organization theory.
- 3650 New Venture Creation.** Three credits. Prerequisites: BCEN 2900 or MGMT 3610; junior standing. An examination of the process of new venture formation. Topics include recognizing and testing opportunity, developing the business concept, analyzing risks, and financing the new venture.
- 3890 Managerial Decision Making.** Three credits. Prerequisite: MGMT 3610. Investigates the decision-making processes of business professionals to gain an understanding of how decisions are made. Emphasis on creative problem solving, critical thinking, problem formulation, and decision analysis.
- 3940 Business Ethics.** Three credits. Prerequisite: Junior standing. The impact of individual values and ethics on business operations, including management of the organization and marketing of goods and services. Topics include legal and ethical aspects of dealing with the environment, consumers, employees, and the general community.
- 3970, 3980 Cooperative Education.** One to three credits. Prerequisite: Junior standing. Provides students with the opportunities for full-time on-the-job training in conjunction with on-campus academic experiences. Students will participate in professional growth seminars. Departmental and MTSU Career Development Center requirements must be completed to receive credit. These courses (1) may not be used to satisfy the major or the minor requirements and (2) may not be taken concurrently with BUAD 4980.
- 4200 Leadership in Organization.** Three credits. Prerequisites: Junior standing; MGMT 3610 or permission of department. Importance of leadership in organizations. Examines major theories and concepts relative to leadership in formal organizations. Emphasis on practical application of leadership knowledge in the leadership role.
- 4680 Organization Behavior.** Three credits. Prerequisite: MGMT 3610. Human behavior in organizations. Emphasis on motivation, leadership, communication, group processes, and methods for managing change. Understanding human behavior allows student to learn better employee utilization strategies resulting in a more effective and efficient organization.
- 4710 International Business.** Three credits. (Same as MKT 4710.) Prerequisites: MGMT 3610 and MKT 3820. International organizational structures and managerial processes. Cultural, political, economic, and legal environments of global marketing. World market patterns and international trade theory.
- 4730 Global Comparative Management.** Three credits. Prerequisite: MGMT 3610. Cross-cultural dimensions of management theories and the applicability of these theories in a multicultural and multinational environment. Topics include cross-cultural communications, motivation, leadership, and decision making. The role of MNCs in economic development and their relationship with host countries also examined.
- 4820 Management Research.** Three credits. Prerequisites: QM 2610 and MGMT 3610. Scientific concepts, methodology, and procedures in designing and conducting research for management decision making.
- 4840 Study Abroad.** Three credits. (Same as MKT 4840.) Prerequisite: Junior/senior standing. A short-term international business education experience designed to expose the student to the economic, political, cultural, and social environments of a foreign country(ies). Emphasis on the international state/status of the subject matter pertinent to management and marketing.
- 4920 Small Business Management.** Three credits. Prerequisite: MGMT 3610. Analysis of problems and considerations involved in planning, organizing, and operating small businesses and entrepreneurial ventures. Emphasis on environmental issues, growth strategies, process management activities, and human resource management.
- 4950 Management Internship.** Three credits. Prerequisites: Management or entrepreneurship major with senior standing and an overall grade point average of at least 2.50. Student is affiliated with an organization on a part-time basis to develop knowledge and experience in the practical application of management theory to actual business problems in a non-classroom situation. This course can only be taken one time, and those taking it may not take MGMT 4990.
- 4990 Independent Study.** One to three credits. Prerequisites: Senior standing and approval of department chair. Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of an approved faculty member. This course can only be taken one time, and those taking it may not take MGMT 4950.

Management (Human Resources)

- 3810 Human Resources Management.** Three credits. Prerequisite: Junior standing. The organization, functions, and administration of a human resources management department, including selection, training, placement, promotion, appraisal, pay incentives, and laws affecting the human resource function.
- 4490 Industrial Relations Legislation.** Three credits. (Same as BLAW 4490 and ECON 4490.) Prerequisite: Junior standing. Economic background and effects of government regulation of labor relations; emphasis on a detailed examination of the National Labor Relations Act as amended or expanded by the Labor Management Reporting and Disclosures Act, and Title 7 of the Civil Rights Act.
- 4500 Employment Discrimination Law.** Three credits. (Same as BLAW 4500.) Prerequisite: Junior standing. A detailed examination of the legal rights and responsibilities of employers and employees with respect to fair employment practices; emphasis on significant statutes, administrative regulations, and judicial decisions forming the body of antidiscrimination law.
- 4510 Unions and Collective Bargaining.** Three credits. (Same as ECON 4510.) Prerequisite: Junior standing. The decision-making processes in the industrial relations system and their impact upon the American economy. Particular emphasis on collective bargain-

ing, contract administration, and impasse procedures both in the public and private sectors.

4620 International Human Resource Management. Three credits. Prerequisite: MGMT 3810. International human resource functions including compensation, labor relations, training, selection, and performance appraisal; impact of culture on IHRM activities.

4640 Human Resources Planning and Staffing. Three credits. Prerequisites: MGMT 3610 and 3810. Basic concepts, principles, and practices involved in the acquisition of human resources: identifying employment needs, forecasting human resource requirements, recruiting employees internally and externally, and selecting qualified candidates and matching them with appropriate jobs.

4650 Human Resource Development. Three credits. Prerequisites: MGMT 3610 and 3810. The role of human resource development in organizations including needs analysis; design, development, and implementation of programs in training and development; career development; management development; and executive development.

4660 Compensation Systems. Three credits. Prerequisites: MGMT 3610 and 3810. Formal organization compensation systems. Emphasis on the design, implementation, and administration of compensation systems utilizing wage theory, applicable analytical tools, research results from the behavioral sciences, and evaluations of actual practices currently utilized in the private and public sectors.

4690 Problems in Human Resources Management. Three credits. Prerequisites: MGMT 3610 and 3810. Contemporary problems and issues in personnel and industrial relations in industry, using research findings as a basis for more constructive action in government-labor-industry relations.

4830 Performance Appraisal. Three credits. Prerequisites: MGMT 3610 and 3810. Theoretical and practical issues related to HRM performance appraisal in organizations. Emphasis on job analysis, measurement of performance, judgmental measures of performance, rating biases, cognitive components in rating, feedback process, performance appraisal training, perceived fairness and accuracy, and legal issues.

Management (Operations)

3010 Management of Operations. Three credits. Prerequisites: MATH 1730 or 1710; junior standing. Will not substitute for MGMT 3620. Fundamental concepts and decisions involved with planning, operating, and controlling operations function in a firm. (Not open to business majors.)

3620 Operations Management. Three credits. Prerequisites: QM 2610; junior standing. Management of production systems with emphasis on the process, system inputs, transformations, system outputs, and techniques for decision making.

3640 Introduction to Management Science. Three credits. Prerequisites: QM 2610; junior standing. Introduction to optimization techniques used in business decision making, including mathematical programming, linear and integer modeling, network modeling and queuing theory. *NOTE: Should take with or have completed MGMT 3620.*

3710 Management of Quality. Three credits. Introduction to design, operation, and control of quality systems; implementation approaches including behavioral and technical issues; strategic importance; quality improvement tools and their use; supplier certification; awards and recognition. *NOTE: Should take with or have completed MGMT 3620.*

3730 Management of Technology. Three credits. Examination of the management of the process of forecasting, acquiring, and integrating emerging technologies into the firm's products/services and processes. Particular emphasis given to information and communications technologies. Course structure may vary. *NOTE: Should take with or have completed MGMT 3620.*

3750 Supply Chain Management. Three credits. Prerequisite: MGMT 3620. Design, operations, and control of materials management systems; implementation approaches including behavioral and technical issues; strategic role in independent and dependent demand environments; software systems; customer-supplier relationships. *NOTE: Should take with or have completed MGMT 3620.*

3770 Operations Simulation. Three credits. Introduction to the development of computer simulation as a decision-making tool. Investigation of simulation methodology and its application in business settings. Personal computers will be used. *NOTE: Should take with or have completed MGMT 3620.*

4550 Service Operations Management. Three credits. Prerequisite: MGMT 3620. Management of service operations systems with emphasis on process, system inputs, transformation, systems outputs, information/feedback systems, and techniques for decision making. Includes a global perspective of services and development of an understanding of the trend toward a service economy in the U.S.

4610 Advanced Operations Management. Three credits. Prerequisites: MGMT 3620 and 6 hours production/operations management electives (MGMT 3710, 3730, 3750, 3770, 4700). Application of techniques used to design, operate, and control complex operations systems. Emphasis on system description, analysis, and implementation issues. Course structure varies.

4700 Problems in Operations Management. Three credits. Prerequisite: MGMT 3620. Current issues in managing operations such as operations strategy, productivity, quality, capacity management, facilities location, materials management systems, service operations, and operations planning and control systems. Topics covered and course structure vary.

Marketing [MKT]

3820 Principles of Marketing. Three credits. Prerequisite: Junior standing. Survey of the functions, processes, and institutions involved in the distribution of consumer and industrial goods and services. Decision making in marketing management introduced.

3830 Retailing. Three credits. Prerequisite: MKT 3820. Development and present status of the retailing structure with special consideration given to the fundamentals of store organization, operation, current distribution problems, research techniques, and possible innovations.

3840 Personal Selling. Three credits. Prerequisite: MKT 3820. Principles, problems, and role of personal selling in the business environment. Buying motives, persuasion techniques, and steps of selling process are considered as they relate to different types of sales activities and products.

3850 Promotion. Three credits. Prerequisite: MKT 3820. Psychological, sociological, legal, and marketing environments of promotion; the promotion mix consisting of advertising, publicity, personal selling, and sales promotion; and the development of promotion objectives, strategies, and plans.

- 3855 Product Management.** Three credits. Prerequisites: MKT 3820; QM 2610; ACTG 2110, 2120. Issues pertaining to marketing of products. Examines topics of interest to product managers including product life cycle, sales forecasting, new products, product positioning, and brand management.
- 3860 Purchasing.** Three credits. Prerequisite: MKT 3820 or approval of instructor. Purchasing management of materials and equipment in industry and government. Includes the optimum of quality, price, source, quantity, and time.
- 3865 Sports Marketing.** Three credits. Prerequisites: MKT 3820 and 3850. Survey of issues pertaining to the marketing of sports products and entities. Focuses on the application of strategic marketing planning to the sports industry.
- 3870 Principles of Transportation.** Three credits. Prerequisite: MKT 3820. Transportation development in the United States and internationally. A historical, economic, and regulatory perspective.
- 3880 Credit and Price Management.** Three credits. Prerequisite: MKT 3820. Credit and pricing policies, procedures, organization; analysis of credit and pricing information as related to marketing activities; determination of credit limits and price levels; statement analysis; cost and collection procedures.
- 3900 Direct Marketing and Electronic Commerce.** Three credits. Prerequisite: MKT 3820. Direct marketing and its strategic use in the development of an integrated marketing communications plan. Topics include traditional direct marketing techniques such as direct mail, broadcast and print media, and telemarketing; Web-based marketing; and technology's impact on direct marketing communications techniques.
- 3910 Consumer Behavior.** Three credits. Prerequisite: MKT 3820. Buyer behavior as an influence in marketing decisions; special attention given to the processes of motivation, perception, attitude, learning, and interaction.
- 3920 Entertainment Marketing.** Three credits. Prerequisite: MKT 3850. Discussion of interrelated marketing issues dealing with the entertainment industry. Develops and relates the marketing mix for industry issues with regard to personality management, merchandising tie-ins, sports marketing/issues, and film/television distribution.
- 3930 Marketing Research.** Three credits. Prerequisites: MKT 3820 and QM 3620. Modern research methods and their application in gathering information for marketing decisions. Special emphasis given to the implementation of marketing surveys and experiments.
- 3950 Business-to-Business Marketing.** Three credits. Prerequisite: MKT 3820. Survey of managerial decisions involved in the business-to-business marketing of goods and services.
- 3960 Marketing Channels Management.** Three credits. Prerequisite: MKT 3820. Interrelationships and interdependencies among the various institutions and agencies composing marketing channels. Emphasis on analysis of alternative strategies of different channel members for optimum efficiency within a given distribution system.
- 3970, 3980 Cooperative Education.** One to three credits. Prerequisite: Junior standing. Provides students with opportunities for full-time on-the-job training in conjunction with on-campus academic experiences. Students participate in professional growth seminars. Departmental and MTSU Career Development Center requirements must be completed to receive credit. Courses (1) may not be used to satisfy the major or minor requirements and (2) may not be taken concurrently with BUAD 4980.
- 4170 Applied Promotional Strategy.** Three credits. Prerequisite: MKT 3850. Integrative nature of the elements of the promotional mix in the successful communication with the consumer of a firm's products and services.
- 4710 International Business.** Three credits. (Same as MGMT 4710.) Prerequisites: MGMT 3610 and MKT 3820. International organizational structures and managerial processes. Cultural, political, economic, and legal environments of global marketing. World market patterns and international trade theory.
- 4800 Sales Management.** Three credits. Prerequisites: MKT 3820 and 3840. Management functions as applied to field sales force. Includes sales organization structures, selection and training of sales personnel, sales compensation, supervision and stimulation of the sales force, and evaluation of sales performance.
- 4810 Physical Distribution Analysis.** Three credits. Prerequisite: MKT 3820. Distribution logistics as related to time-service concepts, profit control centers, and technological gains. Organization structure, communication problems, and alternative inventory management, warehousing, and transportation.
- 4840 Study Abroad.** Three credits. (Same as MGMT 4840.) Prerequisite: Junior/senior standing. A short-term international business education experience designed to expose the student to the economic, political, cultural, and social environments of a foreign country(ies). Emphasis on the international state/status of the subject matter pertinent to management and marketing.
- 4850 Advanced Selling.** Three credits. Prerequisites: MKT 3820 and 3840. The sales function as it relates to business-to-business selling and strategic relationship development. Topics include relational selling, account management, negotiation, team selling, handling conflict and ethical dilemmas, and selling to buying committees. Learning through interactive lecture, role-playing, and sales force automation software.
- 4860 Problems in Retail Management.** Three credits. Prerequisite: MKT 3830. Factors governing a successful retail operation including current problems, case studies, and simulation in merchandising, budgeting, and control.
- 4870 Services Marketing.** Three credits. Prerequisite: MKT 3820. The role and scope of marketing in service entities, including impact, issues, and domestic and global trends.
- 4880 Applied Marketing Research.** Three credits. Prerequisite: MKT 3930. Applies marketing research concepts and tools learned in the introductory marketing research class to "real-life" marketing problems. Emphasis on planning and implementing research activities as well as oral and written presentation of results and conclusions based on marketing research.
- 4890 Marketing Management.** Three credits. Prerequisites: Senior standing; Marketing major; MKT 3910, 3930, and 6 additional semester hours of marketing courses. Marketing strategy, marketing policies, production planning, pricing, promotion, and service from the marketing manager's point of view. Case analysis and marketing simulation emphasized.
- 4950 Marketing Internship.** One to three credits. Prerequisites: Marketing or Entrepreneurship major with senior standing and an overall grade point average of 2.50. Student is affiliated with an organization on a part-time basis to develop knowledge and experience in the practical application of marketing principles

to actual business problems in a non-classroom situation. Can be applied toward the student's degree requirements only upon approval of the department chair. This course can only be taken one time.

4990 Independent Study. One to three credits. Prerequisites: Senior standing and approval of department chair. Individual research and analysis of contemporary problems and issues in a concentrated area under the guidance of an approved faculty member. This course can only be taken one time.

Mathematics [MATH]

1000 Essentials of Mathematics. Three credits. The practices of learning mathematics. Required for students whose ACT Mathematics score is 15–16 or whose mathematics assessment indicates placement. Emphasis on problem solving, critical thinking, math study skills, and solving and graphing linear equations and inequalities. Course will meet for three hours in the classroom and will have a required two-hour lab component, which will include structured online activities. **Does not fulfill General Education Mathematics requirement.**

1010 Mathematics for General Studies. Three credits. Prerequisites: Two years of high school algebra and a Math Enhanced ACT of at least 19 or DSPM 0850 or COMPASS placement. Course satisfies the General Education Mathematics requirement and is also part of the mathematics sequence for students preparing to become elementary school teachers. Topics include logic, sets, algebraic reasoning, probability, statistics, and consumer mathematics.

1410 Concepts and Structure of Elementary School Mathematics. Three credits. Prerequisites: Two years of high school algebra and a Math Enhanced ACT of at least 19 or DSPM 0850 or COMPASS placement. Algebra-based study of school mathematics in keeping with the recommendations of the National Council of Teachers of Mathematics. Tools for problem solving, set theory, functions, number theory, and examinations of number systems from counting numbers to irrational numbers.

1420 Informal Geometry. Three credits. Prerequisite: A grade of C or better in MATH 1410. Geometry-based study of school mathematics in keeping with the recommendations of the National Council of Teachers of Mathematics. Studies of plane, solid, coordinate, and motion geometry as well as constructions, congruence, similarity, and concepts of measurement. A variety of instructional technology tools investigated.

1530 Applied Statistics. Three credits. Prerequisites: Two years of high school algebra and a Math Enhanced ACT 19 or greater or equivalent. Descriptive statistics, probability, and statistical inference. The inference unit covers means, proportions, and variances for one and two samples, and topics from one-way ANOVA, regression and correlation analysis, chi-square analysis, and nonparametrics.

1630 College Mathematics for Managerial, Social, and Life Sciences. Three credits. Prerequisites: Two years of high school algebra and a Math Enhanced ACT greater than 25 or MATH 1710. Topics include solving systems of linear equations, Leontief models, linear programming, mathematics of finance, set theory, and probability theory.

1710 College Algebra. Three credits. Prerequisite: DSPM 0850 or two years of high school algebra; a Math Enhanced ACT 19 or greater or COMPASS placement. Course satisfies the General Education Mathematics requirement. Topics include functions—linear, quadratic, exponential, and logarithmic; analysis of graphs; linear systems; inequalities; counting principles; and probability. Graph-

ing calculator required. Course may be taken by correspondence. Not open to those who have had MATH 1730.

1720 Plane Trigonometry. Three credits. Prerequisite: Strong background in algebra recommended. Trigonometric functions of the acute and general angle, circular functions, graphs of trigonometric and inverse functions, identities, solutions of right and general triangles, equations, complex numbers, and vectors. Not open to those who have had MATH 1730. Graphing calculator required.

1730 Pre-Calculus. Four credits. Prerequisite: MATH 1710 or successful completion of high school precalculus course. An integrated and rigorous study of the algebra and trigonometry needed to successfully attempt calculus. Emphasis on functions, their analysis and their applications. Level of algebraic sophistication developed above that found in MATH 1710. Topics include exponentials and logarithms, analysis of graphs, and word problems. Graphing calculator required.

1810 Applied Calculus I. Three credits. Prerequisite: Eligibility to take MATH 1710. First of a four-course sequence. Introduces mathematical modeling applied to real-world problems. Sets, functions, inverse models, limits, continuity, first and second order model building, single variable differentiation, implicit differentiation, inverse problems (exponential and log models). First and second derivatives used to study the behavior of real-world applications.

1820 Applied Calculus II. Three credits. Prerequisite: MATH 1810. Second of a four-course sequence. Riemann Sum, indefinite and definite integrals, modeling using substitution, differential equations with initial conditions, modeling real-world problems using functions of two or more variables, level curves, feasible regions, linear objective functions, system of linear equations, annuities, partial derivatives, least squares, matrix multiplication and addition, inverse matrix, and matrix equations.

1910 Calculus I. Four credits. Prerequisite: MATH 1730 with a grade of C or better or Math ACT of 26 or better or Calculus placement test score of 73 or better. An introduction to calculus with an emphasis on analysis of functions, multidisciplinary applications of calculus, and theoretical understanding of differentiation and integration. Topics include the definition of the derivative, differentiation techniques, and applications of the derivative. Calculus topics related to trigonometric, exponential, and logarithmic functions also included. Course concludes with the fundamental theorem of calculus; the definition of antidifferentiation and the definite integral; basic applications of integrations; and introductory techniques of integration. Graphing calculator required.

1920 Calculus II. Four credits. Prerequisite: MATH 1910. A topics course providing a wide view of different techniques and applications of calculus in the plane. Techniques of integration and applications of integration fully developed. Power series and Taylor series included. Emphasis on multidisciplinary applications includes Taylor series approximation; applications of integration to physics, biology, and business; and geometric and power series applications. Graphing calculator required.

2010 Elements of Linear Algebra. Three credits. Prerequisite: MATH 1910. Vectors and vector spaces, matrices and systems of linear equations, geometry of vector spaces and linear transformations in a vector space.

2050 Probability and Statistics. Three credits. Prerequisite: Calculus I. Data analysis, probability, and statistical inference. The inference material covers means, proportions, and variances for one and two samples, one-way ANOVA, regression and correlation, and chi-square analysis.

- 2090 Mathematics for Health Professions.** Two credits. Enables students in the health professions to apply mathematical concepts to interpret and solve drug dosage calculation problems encountered in fields such as nursing. Includes basic math review, solid and liquid doses of medications for adults and children, solutions, and IV administration. Also includes conversions from metric to household and apothecary measurements. Not open to Mathematics majors or minors.
- 2110 Data Analysis.** One credit. Grouping and classifying technical data. Curve fitting by statistical and nonstatistical methods. Graphing of scientific data. Secondary education in mathematics students should take concurrent or subsequent to MATH 2050.
- 2130 Mathematics of Finance.** Three credits. Prerequisites: Two years of high school algebra and a Math Enhanced ACT 19 or greater or DSPM 0850. Investment finance, including general annuities, evaluation of bonds, and life annuities.
- 3020 Applied Calculus III.** Three credits. Prerequisites: MATH 1810 and 1820. In-depth study of continuity of single variable functions; inverses of functions; differentiation and integration of various functions including trigonometric functions, logarithmic functions, exponential functions, power functions, and piecewise functions; methods of integration; the Riemann Sum, extensive applications of the fundamental theorem of calculus, and arc length of a curve. Emphasis on real-world applications.
- 3030 Applied Calculus IV.** Three credits. (Same as ACSI 3030.) Prerequisite: MATH 3020. In-depth study of L'Hopital's Rule, improper integrals, sequences, convergence and divergence of series, Taylor and Maclaurin series, approximations for single-variable functions, two- and three-dimensional vector spaces, vector-valued functions, polar coordinates, and partial differentiation and integration of multivariate functions. Emphasis on blending these topics with real-world applications.
- 3070 College Geometry.** Three credits. Prerequisite: MATH 3460. Advanced treatment of standard topics in Euclidean geometry using informal and axiomatic approaches. Includes proofmaking techniques, traditional and transformational geometry, finite geometries, and a brief introduction to other geometries.
- 3080 Discrete Structures.** Three credits. Prerequisites: CSCI 1160 or 1170 and MATH 1910 or consent of instructor. Topics include formal logic, proof techniques, matrices, graphs, formal grammars, finite state machines, Turing machines, and binary coding schemes.
- 3110 Calculus III.** Four credits. Prerequisite: MATH 1920. Adjusts calculus techniques developed in the plane (Calculus I and II) to make them applicable in three-dimensional space. Introductory study of the nature of three-dimensional space and definition of the algebraic calculations in three-dimensional space. Differential and integral calculus definitions and techniques revised to appropriately transfer into this new space. Topics include multivariate functions, partial differentiation, partial integration, multiple integration, and multidisciplinary applications.
- 3120 Differential Equations I.** Three credits. Prerequisite: MATH 1920. The solution and application of ordinary differential equations with emphasis on first order equations, second order linear equations, Laplace Transform method, systems of differential equations, and numerical methods.
- 3180 Introduction to Numerical Analysis.** Three credits. (Same as CSCI 3180.) Prerequisites: MATH 1920 and CSCI 1160 or 1170. Topics include series approximation, finite differences, interpolation, summation, numerical differentiation and integration, iteration, curve fitting, systems of equations and matrices, and error analysis.
- 3190 Deterministic and Probabilistic Models.** Three credits. Corequisite: MATH 2050. Linear programming, network analysis, queuing theory, dynamic programming.
- 3260 Differential Equations II.** Three credits. Prerequisite: MATH 3120. A continuation of MATH 3120 with emphasis on series solutions, method of Frobenius, orthogonal functions, equations of Bessel, Legendre, Gauss, Chebyshev; introduction to partial differential equations.
- 3300 Discrete Mathematics for Middle Grades Teachers.** Three credits. Prerequisites: MATH 1410, 1420, and 1710. Supports the development of prospective middle grades teachers' knowledge of discrete mathematics. Topics include set theoretic topics, logic, counting, probability, graph theoretic topics. Focuses on students' learning discrete mathematics topics as well as the teaching of related mathematical topics to middle grades students. Field experience in a nearby middle school incorporated.
- 3310 Functions: Connecting Algebra and Geometry for Middle Grades Teachers.** Three credits. Prerequisites: MATH 1410, 1420, and 1710. Supports the development of prospective middle grades teachers' knowledge of functions and connections between algebra and geometry. Focuses on students connecting mathematics topics as well as the teaching of mathematical topics to middle grades students to support learning about the connected nature of mathematics. Field experience in a nearby middle school incorporated.
- 3320 Teaching Mathematics in Grades 5–8.** Three credits. Prerequisite: Admission to the teacher education program. Required of all Mathematics majors seeking a license to teach mathematics in grades 7–12. Strongly encouraged for elementary education majors with a 5–8 emphasis. Topics from number relationships, mental computation and estimation strategies, patterns and functions, algebra, statistics, probability, geometry, and measurement. Must be taken prior to student teaching.
- 3330 Teaching Mathematics in Grades 9–12.** Three credits. Prerequisites: Admission to teacher education, completion of the mathematics core, and MATH 3320. Required of all Mathematics majors seeking a license to teach mathematics in grades 7–12. In-depth study of mathematics learning and teaching strategies in secondary school mathematics. Selected topics from junior and senior high school curricula provide a foundation for student investigations into the conceptual nature of mathematics and applications in the secondary school curriculum. Must be taken prior to student teaching.
- 3400 Symbolic Logic.** Three credits. (Same as PHIL 3400.) The elements of propositional calculus—propositional connectives and their truth functions, validity, proof, and an introduction to quantification theory. Where appropriate and natural, parallels from elementary set theory are introduced. May count for credit in Philosophy.
- 3460 Foundation of Higher Mathematics.** Three credits. Prerequisite: MATH 1920. The language of mathematics, set theory and proof, relations and functions, number systems, mathematical structures. Focuses on the transition from lower-division study to upper-division study by actively engaging the student in problem solving, mathematical reasoning, and both informal and technical writing.
- 4010 Selected Topics in Elementary Mathematics.** Three credits. Prerequisites: MATH 1410, 1420, and 1010. Required of students who are preparing to teach grades 5–8. Examines in greater depth topics to which the student has prior exposure; emphasizes the relevance and implications of these topics to the middle school classroom.

- 4200 Introduction to Mathematics of Investment.** Three credits. (Same as ACSI 4200.)
- 4210 Advanced Calculus I.** Three credits. Prerequisites: MATH 3110 and 3460. Theory and application of continuity, differentiation, and integration.
- 4220 Advanced Calculus II.** Three credits. Prerequisite: MATH 4210. A continuation of MATH 4210 including theory and application of convergence.
- 4230 Vector Analysis.** Three credits. Prerequisite: MATH 3110. A review of vector algebra and vector differentiation with emphasis on aspects of these topics not covered in previous calculus courses. Stress on line and surface integrals; Divergence Theorem and Stokes' theorem with generalizations and related topics.
- 4250 Theory of Calculus.** Three credits. Prerequisites: MATH 3110 and 3460. Theoretical development of limits, continuity, differentiation, and integration in one dimension.
- 4270 Introduction to Topology.** Three credits. Prerequisites: MATH 3110 and 3460. Fundamental concepts of topology including continuity, compactness, connectedness, separation axioms, and metric spaces.
- 4280 Undergraduate Research.** One to four credits. Prerequisite: Permission of department. Independent investigation of a selected research problem under the guidance of a faculty member resulting in an oral and written report of results. May be repeated for a maximum of four credits.
- 4310 Numerical Analysis I.** Three credits. Prerequisites: CSCI 1170 and MATH 2010 or consent of instructor. Application of computer-oriented numerical algorithms to algebraic equations, differential and integral equations, and linear algebra. Rigorous mathematical treatment of error included.
- 4320 Numerical Analysis II.** Three credits. Prerequisite: MATH 4310. A continuation of MATH 4310.
- 4420 Number Theory.** Three credits. Prerequisite: MATH 3460. Divisibility, congruences, quadratic residues, Diophantine equations, quadratic forms, and continued fractions.
- 4470 Introduction to Modern Algebra.** Three credits. Prerequisite: MATH 3460. A treatment of sets, relations, operations, and the construction of number systems in algebra.
- 4510 Abstract Algebra I.** Three credits. Prerequisite: MATH 3460. An introduction to groups, with a brief introduction to rings, integral domains, and fields.
- 4530 Abstract Algebra II.** Three credits. Prerequisite: MATH 4510/5510. The theory of rings, fields, integral domains, and vector spaces.
- 4540 Topics in Secondary School Mathematics.** Three credits. Prerequisites: Admission to teacher education, completion of the mathematics core, MATH 3070 and 4510. Required of all Mathematics majors seeking a license to teach mathematics in grades 7-12. Examines in greater depth topics to which the student has prior exposure; emphasizes the relevance and applications of these topics to the pre-college level classroom.
- 4600 Problems in Contemporary Mathematics.** One to six credits. Pass/Fail grading in specified sections.
- 4601 Problems in Contemporary Mathematics—Complex Variables.** Three credits. Prerequisite: MATH 3460. Fundamental principles and applications of complex variables.
- 4602 Problems in Mathematics.** One to six credits. Prerequisite: Consent of instructor. Problem-oriented course providing opportunities for mathematical study in areas of need.
- 4620 History and Philosophy of Mathematics.** Three credits. Prerequisite: MATH 3460. Background in geometry and number theory helpful. The character of mathematical thought by way of mathematical problems that have occupied the outstanding mathematicians of Babylon, Egypt, Greece, China, the Renaissance, and modern times paralleled with a study of three schools of mathematical philosophy: intuitionism, logicism, and formalism.
- 4630 Mathematics of Risk Management.** Three credits. (Same as ACSI 4630.)
- 4640 Mathematics of Options, Futures, and Other Derivatives.** Three credits. (Same as ACSI 4640.)
- 4700 Combinatorics and Graph Theory.** Three credits. Prerequisites: MATH 2010 and 3460. Selected topics in combinatorics and graph theory emphasizing combinatorial problem solving and algorithmic proof.
- 4800 Seminar in Mathematics with Technology.** Three credits. Prerequisite: 18 semester hours in mathematics including calculus or consent of instructor. Examine and utilize the technological tools available for doing mathematics. Emphasis on non-numerical tools such as theorem provers and algebraic manipulation systems.
- 4990 Seminar in Mathematics.** Three credits. Open only to Mathematics majors; normally taken during last regular semester of coursework. Required of all Mathematics majors. Offers graduating Mathematics majors a broad perspective of mathematics, mathematical activity, and problem solving in various areas of application; offers preparation for professional examinations; acquaints students with job possibilities and aids in career decisions; acquaints students with the nature of graduate study in mathematics. Pass/fail.

Media Design and Graphics [GRAF]

- 2010 Media Design and Visual Language.** Three credits. Required for candidacy. Overview of concepts for effective visual communication; the role of visual elements and design practices in a cultural, historical, and political context; basic typography and design, electronic and digital composition and reproduction, and technological aspects of design and production.
- 2950 Media Design Applications.** Three credits. Introduction to software applications used in publication media design, related hardware and peripheral components applicable to publication design, and electronic publishing procedures.
- 3910 Basic Media Design.** Three credits. Prerequisites: Admission to candidacy; JOUR 2710 and GRAF 2010. Basic design process for publication; in-depth analysis of typography, copywriting, art and illustration, photography; theory and practice of color reproduction; diverse design images; informational graphics, production methods of design for print and electronic media. Cannot be taken concurrently with GRAF 2950.
- 4010 Publication Design.** Three credits. Prerequisites: Admission to candidacy; GRAF 3910 or 2950. Principles and practices of publication design and production with emphasis on newsletters, magazines, newspapers, and contemporary formats; use of traditional and electronic information services as a resource; selection and use of photographs and illustrations for publication; preparation of design for print, electronic, or multimedia publication.

4180 Advanced Media Design. Three credits. Prerequisites: Admission to candidacy; GRAF 4010. Application of contemporary graphic design technologies for solving visual problems in print and electronic media. Creative strategies in media design and design copywriting; cooperative and collaborative design projects; legal aspects of media graphics; strategies for designing diverse images, color reproduction, and evaluation of design performance standards for portfolio.

Middle East Studies [MES]

2100 Introduction to Middle East Studies. Three credits. An introduction to the people, culture, geography, and history of the Middle East from the distant past to the present. Includes ancient history, the rise of Islam, Arab nationalism and formation of the modern states, the creation of Israel, oil and natural resources, social structures and family life, international diplomacy and peacemaking, problems of Westernization and modernization, and political Islam.

2030 Literatures of the Middle East. Three credits. Prerequisites: ENGL 1010 and 1020 or permission of instructor. Works in English translation of selected literary genres, periods, and traditions produced in the cultures of the Middle East. May be repeated once with different topic.

3100 Special Topics in Middle East Studies. Three credits. Prerequisite: Completion of three (3) credit hours in a course listed for the Middle East Studies minor or permission of the instructor. An in-depth study of a specific topic relating to the Middle East announced in the online course schedule by the faculty member teaching the course. May be repeated with a different topic. A maximum of six semester hours credit may be applied toward a minor in Middle East Studies.

Military Science [MS]

1000 Military Science Practicum (Elective). One credit per semester for up to four credits. Corequisite: Enrollment in MS Basic or Advanced Course or permission of PMS. For those interested in enrichment activities which contribute to the development of leadership and management abilities, including the Forrest Raiders (adventure training and small unit military tactics), Blue Brigade Drill Team (drill and ceremonies under arms).

1010 First-Year Basic Military Science. Two credits. Practical application in adventure-oriented skills such as rappelling, marksmanship techniques, and survival. Focuses on leadership development with a hands-on approach to classroom instruction. Also includes a general overview of the army's mission, organizational structure, and customs and traditions. Meets twice weekly, 85 minutes per class.

1020 First-Year Basic Military Science. Two credits. Prerequisite: MS 1010 or permission of PMS. Further development in adventure-oriented skills. Hands-on approach to basic rifle marksmanship, land navigation, and first aid. Students fire the M16A2 rifle, conduct a land navigation course, and learn first aid skills through practical application. Continued focus on leadership development. Meets twice weekly, 85 minutes per week.

2010 Second-Year Basic Military Science. Two credits. Prerequisites: MS 1010 and 1020 or permission of PMS. Development of leadership potential through practical exercise. Leadership, small unit tactics, first aid, basic rappelling, weapons familiarization, oral communication exercises, and team-building skills.

2020 Second-Year Basic Military Science. Two credits. Prerequisites: MS 1010, 1020, and 2010 or permission of PMS. Application of basic map reading and compass principles, unit organization at squad level, small unit tactics, branches of the army, discussion of the advanced program. Practical exercises, land navigation, first aid, current events, marksmanship, water safety training. Continues team-building development.

3000 Basic Military Science. Six credits. Prerequisite: Permission of PMS. Four-week training normally taken during the summer between the sophomore and junior academic years by students who have not taken all basic MS courses. Training conducted at a designated U.S. Army installation; practical experience in leadership, small unit tactics, weapons, drill, and communications under field conditions. U.S. Army pays the student approximately \$900.

3080 U.S. Army History. Two credits. Prerequisites: MS 1010 and 1020 or permission of department chair. Introduces students enrolled in the ROTC program to the U.S. Army's development and role in military operations from colonial times to the present.

3110 First-Year Advanced Military Science. Three credits. Prerequisites: MS 1010, 1020, 2010, and 2020; or MS 3000; or equivalent credit for previous military service. Formal instruction in troop leading procedures, army problem solving, branches of the army, combat orders, leadership traits and principles, small unit tactics based on infantry rifle squad and platoon, map reading and land navigation skills, and military briefings. Focus on leadership development, instilling the warrior ethos, and preparation for the Leader Development and Assessment course and potential for service as a junior officer.

3120 First-Year Advanced Military Science. Three credits. Prerequisite: MS 3110. Formal instruction in leadership, principles of war, squad and platoon tactics, situational training exercises, patrolling techniques, map reading and land navigation. Hands-on application of troop leading procedures, written and oral combat orders, maneuver techniques, and field craft. Focus on leadership development, instilling the warrior ethos, and preparation for the Leadership Development and Assessment course and potential for service as a junior officer.

3130 Military Science Field Methods. Six credits. Prerequisites: MS 3110 and 3120. Six weeks of training normally taken during the summer between the junior and senior academic years. Training conducted at a designated U.S. military installation; practical experience in leadership, military teaching, weapons, and communications under field conditions. The U.S. military pays the student for attending the training.

3140 Military Leadership and Management. Two credits. Prerequisites: Contracted students in Army ROTC and department chair approval. Dynamics of leadership and officership in the U.S. Army and inherent responsibilities of an officer in today's environment discussed. Explores good and bad leadership, the principles of war, and their applications to war fighting through U.S. history.

4110 Second-Year Advanced Military Science. Three credits. Prerequisites: MS 3110 and 3120. Seminar in leadership and management designed to prepare the senior student for active duty responsibilities. The commander, the staff, the military team, and army ethics are the main focus. Emphasis on instilling warrior ethos.

4120 Second-Year Advanced Military Science. Three credits. Prerequisites: MS 3110, 3120, and 4110. Seminars in leadership and management to prepare the senior student for active duty responsibilities. Focus is military law, army writing standards, and organizational skills. Emphasis on leading soldiers in the complex situations of current military operations.

Music [MUS]

- 1010 Recital Attendance.** Zero credit. Attendance at a minimum number of recitals and concerts given by students, faculty, and guest artists. Six semesters required for undergraduate music majors (see School of Music handbook for details). May be repeated multiple times. Pass/Fail.
- 1020 Music Enrichment - Instrumental.** Three credits. Prerequisite: Acceptance into Governor's School for the Arts. A component of the Governor's School for the Arts. Provides an opportunity for qualified high school students to get first-hand musical experience in an intense, academic, collegiate environment.
- 1021 Music Enrichment - Vocal.** Three credits. Prerequisite: Acceptance into Governor's School for the Arts. A component of the Governor's School for the Arts. Provides an opportunity for qualified high school students to get first-hand musical experience in an intense, academic, collegiate environment. Combines traditional large ensemble and opera workshop rehearsals and performances and voice master classes.
- 1022 Music Enrichment - Piano.** Three credits. Prerequisite: Acceptance into Governor's School for the Arts. A component of the Governor's School for the Arts. Provides an opportunity for qualified high school students to get first-hand experience in an intense, academic, collegiate environment. Combines traditional applied studio instruction, supervised practice sessions, chamber ensemble rehearsals and performances, master classes, and solo performances.
- 1030 Introduction to Music.** Three credits. **Meets part of the General Education Humanities and/or Fine Arts requirement.** Perceptive listening to music of various styles and cultures including popular and world musics and Western classical concert music.
- 1510 Class Voice I.** One credit. Basic vocal techniques including posture, breath control, tone quality, and diction. Italian and English diction, Vaccai studies, and moderately easy song repertory.
- 1520 Class Voice II.** One credit. Prerequisite: MUS 1510. A continuation of the vocal techniques in Class Voice I with addition of vocal flexibility, uniform tone quality in extending the voice range, interpretation of songs, and stage deportment in public performance. Further study of Vaccai, Italian art songs, and English songs.
- 1530 Class Piano I.** One credit. Acquaints beginning piano students with the keyboard. Includes such skills as note reading, basic chords for harmonization of melodies, improvisation, basic exercises for development of coordination and technique, transposition, repertory, and sight reading.
- 1540 Class Piano II.** One credit. Prerequisite: MUS 1530. Continuation of skills and concepts taught in MUS 1530. Emphasis on standard piano repertory in addition to sight reading and functional piano skills.
- 1550 Class Guitar I.** One credit. Beginning guitar playing, teaching basic techniques through chording and melodic elements.
- 1560 Class Guitar II.** One credit. Prerequisite: MUS 1550. Continuation of skills and concepts sought in Class Guitar I with emphasis on more advanced playing and repertory study.
- 2530 Class Piano III.** One credit. Prerequisite: MUS 1540. Continuation of skills and concepts taught in MUS 1540. Emphasis on standard piano repertory in addition to sight reading and functional piano skills.
- 2540 Class Piano IV.** One credit. Prerequisite: MUS 2530. Continuation of skills and concepts taught in MUS 2530. Emphasis on standard piano repertory in addition to sight reading and functional piano skills.
- 2550 Keyboard Skills for Pianists I.** One credit. Elementary-level sight-playing; three-voice, open-score reading; improvisation; harmonization using primary chords; transposition; and common patterns in two-octave range (scales, arpeggios, progressions).
- 2560 Keyboard Skills for Pianists II.** One credit. Intermediate-level ensemble and solo sight-playing; harmonization using primary and secondary chords; improvisation; transposition; four-voice, open-score reading; and common patterns in four-octave range (scales, arpeggios, progressions).
- 2660 Jazz Guitar Lab.** One credit. Prerequisites: MUTH 1110 and 1120, basic proficiency in reading music, and consent of instructor. Recommended: Class Guitar I or one semester of private instruction. Provides minimum background in performing popular guitar styles in an ensemble or studio situation. Course may be taken more than one semester for credit.
- 2670 Jazz Piano Lab.** Two credits. Prerequisite: MUS 1540. For beginning jazz keyboard students. Study of the harmonic language of jazz, chord voicing, keyboard techniques, interpretation of melodies, and improvisation.
- 3140 Conducting I.** Two credits. Prerequisites: MUTH 2120. Interpretation of scores, fundamental diagrams with and without baton, terminology, and stage deportment.
- 3150 Conducting II Instrumental.** Two credits. Prerequisites: Two semesters of MUED 2320; MUS 3140. Further development of techniques, especially those relevant to choral and instrumental conducting. Laboratory experiences with large musical groups; conducting with records to develop awareness of musical texture, form, and general musicianship in all areas as related to conducting.
- 3160 Conducting II Choral.** Two credits. Prerequisite: Two semesters of MUED 2310; MUS 3140. Further development of conducting techniques relative to the choral area. Emphasis on choral style and literature, scope and sequence of the historical perspective, and major developments in the choral art.
- 4000 Special Topics in Music.** One, two, or three credits. Study of a topic in music. Topic and prerequisites to be announced.
- 4100 Independent Study in Music.** One, two, or three credits. Intensive study of a chosen subject. An indication of reasonable skill and knowledge of research techniques, writing, and creativity expected. Requires permission of the instructor and director of the music school.
- 4270 Music Internship.** Three to six credits. Prerequisite: Permission of instructor. Examination and experiences in music industry, music education, or instrumental or choral conducting. Music industry may include songwriting and the creative aspects of music, studio production, music publishing, and music merchandising. Music education may include public and private school settings, state board of education arts consulting, and music textbook consulting. Conducting may include school and church conducting, music publishing, and private or public orchestras and/or choirs. Pass/Fail.
- 4550 Vocal Style of Country Music.** Three credits. Songs from the various subgenres of country music studied and performed. Proper technique for this demanding style of singing demonstrated. Includes a survey of the history of country music with a focus on evolving vocal styles.

4570 The Body Intelligent: A Study of the Alexander Technique. Three credits. (Same as THEA 4570.) For those interested in improving ease and freedom of movement, balance, support, flexibility, and coordination in daily activities.

Music (Applied) [MUAP]

Lower-Division Private Instruction

Private instruction is available to qualified students on all orchestral and band instruments, voice, guitar, keyboards and composition. Those students enrolling in private instruction for the first time audition to determine if they are adequately prepared for college-level study. To arrange for an audition, students should contact the School of Music Office. One-credit private instruction courses require one-half hour lesson per week. Two-credit courses are for music majors only and require one hour-long lesson per week. A corequisite enrollment in an appropriate music ensemble is required for students registered for private instruction in voice, brass, woodwinds, orchestral strings, and percussion. Private instruction course numbers will be repeated for each semester of study.

Students who are not prepared for such private instruction as stated above should register for class instruction, e.g., class piano, class guitar, or class voice. If class instruction is not available, students may be allowed to enroll in private instruction for one semester after which a faculty jury examination must be passed to continue private instruction. Private instruction course numbers will be repeated each semester of study. A maximum of four semesters of lower-division private instruction may be applied to a music degree.

Fees per semester are \$325 for a one-hour lesson and \$175 for a half-hour lesson.

- 2351 **Piano.** One credit.
- 2361 **Organ.** One credit.
- 2371 **Voice.** One credit.
- 2381 **Violin.** One credit.
- 2391 **Violoncello.** One credit.
- 2401 **String Bass.** One credit.
- 2411 **Guitar.** One credit.
- 2421 **Flute/Piccolo.** One credit.
- 2431 **Oboe/English Horn.** One credit.
- 2441 **Clarinet.** One credit.
- 2451 **Bassoon.** One credit.
- 2461 **Saxophone.** One credit.
- 2471 **Trumpet.** One credit.
- 2481 **French Horn.** One credit.
- 2491 **Trombone.** One credit.
- 2501 **Baritone/Euphonium.** One credit.
- 2511 **Tuba.** One credit.
- 2521 **Snare Drum/Keyboard Percussion.** One credit.
- 2531 **Drum Set/Latin Percussion.** One credit.
- 2541 **Timpani/Keyboard Percussion.** One credit.
- 2551 **Harpichord/Continuo.** One credit.
- 2561 **Viola.** One credit.
- 2342 **Composition.** Two credits.
- 2352 **Piano.** Two credits.
- 2362 **Organ.** Two credits.
- 2372 **Voice.** Two credits.
- 2382 **Violin.** Two credits.
- 2392 **Violoncello.** Two credits.
- 2402 **String Bass.** Two credits.
- 2412 **Guitar.** Two credits.
- 2422 **Flute/Piccolo.** Two credits.

- 2432 **Oboe/English Horn.** Two credits.
- 2442 **Clarinet.** Two credits.
- 2452 **Bassoon.** Two credits.
- 2462 **Saxophone.** Two credits.
- 2472 **Trumpet.** Two credits.
- 2482 **French Horn.** Two credits.
- 2492 **Trombone.** Two credits.
- 2502 **Baritone/Euphonium.** Two credits.
- 2512 **Tuba.** Two credits.
- 2552 **Harpichord/Continuo.** Two credits.
- 2562 **Viola.** Two credits.

Upper-Division Private Instruction

Promotion to the upper division does not follow automatically after the completion of four semesters of courses in the lower division but is made only upon the successful completion of the upper-division jury. This jury, normally given at the end of the sophomore year to music majors, is conducted by the School of Music. Recommendation to upper division is made only if the student's proficiency as a performer bears promise of future artistic qualities as a soloist. It is at this level that the music major normally begins preparation for his/her junior and/or senior recital. A student who fails to pass the upper-division jury must continue lower-division private instruction until the jury is passed. Private instruction course numbers will be repeated for each semester of study.

A one-credit course requires one half-hour lesson per week. Two- and three-credit courses are for music majors only and require one hour-long lesson per week. A corequisite enrollment in an appropriate music ensemble is required for students registered for private instruction in voice, brass, woodwinds, orchestral strings, and percussion.

After successful completion of the upper-division jury, a student must be enrolled for a minimum of three semesters before being allowed to give the senior recital. Students must pass the upper-division performance jury before being allowed to student teach.

Fees per semester are \$325 for a one-hour lesson and \$175 for a half-hour lesson.

- 4351 **Piano.** One credit.
- 4361 **Organ.** One credit.
- 4371 **Voice.** One credit.
- 4381 **Violin.** One credit.
- 4391 **Violoncello.** One credit.
- 4401 **String Bass.** One credit.
- 4411 **Guitar.** One credit.
- 4421 **Flute/Piccolo.** One credit.
- 4431 **Oboe/English Horn.** One credit.
- 4441 **Clarinet.** One credit.
- 4451 **Bassoon.** One credit.
- 4461 **Saxophone.** One credit.
- 4471 **Trumpet.** One credit.
- 4481 **French Horn.** One credit.
- 4491 **Trombone.** One credit.
- 4501 **Baritone/Euphonium.** One credit.
- 4511 **Tuba.** One credit.
- 4521 **Snare Drum/Keyboard Percussion.** One credit.
- 4531 **Drum Set/Latin Percussion.** One credit.
- 4541 **Timpani/Keyboard Percussion.** One credit.
- 4551 **Harpichord/Continuo.** One credit.
- 4561 **Viola.** One credit.
- 4342 **Composition.** Two credits.
- 4352 **Piano.** Two credits.

- 4362 **Organ.** Two credits.
 4372 **Voice.** Two credits.
 4382 **Violin.** Two credits.
 4392 **Violoncello.** Two credits.
 4402 **String Bass.** Two credits.
 4412 **Guitar.** Two credits.
 4422 **Flute/Piccolo.** Two credits.
 4432 **Oboe/English Horn.** Two credits.
 4442 **Clarinet.** Two credits.
 4452 **Bassoon.** Two credits.
 4462 **Saxophone.** Two credits.
 4472 **Trumpet.** Two credits.
 4482 **French Horn.** Two credits.
 4492 **Trombone.** Two credits.
 4502 **Baritone/Euphonium.** Two credits.
 4512 **Tuba.** Two credits.
 4552 **Harpichord/Continuo.** Two credits.
 4562 **Viola.** Two credits.

Three-credit private instruction courses are designed for only those students majoring in music with performance as their concentration. Students enrolled in these courses will receive one hour of instruction per week. Although three-credit courses meet for the same length of time as two-credit courses, students enrolled are expected to spend more time in preparation for their lessons and perform more repertoire during the course of the semester as assigned by the instructor.

- 4353 **Piano.** Three credits.
 4363 **Organ.** Three credits.
 4373 **Voice.** Three credits.
 4383 **Violin.** Three credits.
 4393 **Violoncello.** Three credits.
 4403 **String Bass.** Three credits.
 4413 **Guitar.** Three credits.
 4423 **Flute/Piccolo.** Three credits.
 4433 **Oboe/English Horn.** Three credits.
 4443 **Clarinet.** Three credits.
 4453 **Bassoon.** Three credits.
 4463 **Saxophone.** Three credits.
 4473 **Trumpet.** Three credits.
 4483 **French Horn.** Three credits.
 4493 **Trombone.** Three credits.
 4503 **Baritone/Euphonium.** Three credits.
 4513 **Tuba.** Three credits.
 4523 **Percussion.** Three credits.
 4553 **Harpichord/Continuo.** Three credits.
 4563 **Viola.** Three credits.

A student who earns a grade lower than C in private instruction may use the next attempt in the course to remove the previous grade from his or her grade point calculation. To use this policy, the student must have the written permission of the school director at the beginning of the semester in which the next attempt is made.

- 2342 **Composition.** Two credits each semester. Experience composing original works in numerous media and styles to develop technique and self-expression. Topics include melodic and harmonic practice, orchestration, analysis, music form, score preparation, and audience psychology. Musical styles may embrace jazz, rock, pop, and electronics in addition to traditional and contemporary art music.
- 3800 **Junior Recital.** One credit. Prerequisite: One semester of upper-division private study. Corequisite: Private lesson in major area of performance. Required of all Bachelor of Music majors with a concentration in Vocal or Instrumental Performance. Constitutes approximately 30 minutes of music with appropriate repertoire as

assigned by the private instructor; recital performance graded by a faculty committee; must be passed with a grade of C or better.

- 4040 **Service Playing.** Two credits. Skills and knowledge necessary in order to play for church services including hymn and anthem accompaniments, conducting from the console, liturgical service music, solo accompaniments, and church music materials. (A maximum of 8 semester hours may be applied toward degree.)
- 4342 **Composition.** Two credits. Experience composing original works in numerous media and styles to develop technique and self-expression. Topics include melodic and harmonic practice, orchestration, analysis, music form, score preparation, and audience psychology. Musical styles may embrace jazz, rock, pop, and electronics in addition to traditional and contemporary art music.
- 4800 **Partial Senior Recital.** Zero to one credit. Prerequisite: Two semesters of upper-division private study. Corequisite: Private lesson in major area of performance. Required of all Bachelor of Music majors with a concentration in Vocal/General Music Education, Instrumental Music Education, and Music Industry. Constitutes approximately 30 minutes of music with appropriate repertoire as assigned by the private instructor. Students must receive permission to present a partial senior recital by giving a pre-recital hearing before the faculty at least two weeks before the scheduled recital. Recital performance graded by a faculty committee; must be passed with a grade of C or better.
- 4900 **Senior Recital.** Two credits. Prerequisites: MUAP 3800 with a grade of C or better (Vocal or Instrumental Performance); three semesters of upper-division private study. Required of all Bachelor of Music majors with a concentration in Vocal or Instrumental Performance, Jazz Studies, and Theory-Composition. Constitutes approximately 50 minutes of music with appropriate repertoire as assigned by the private instructor. Recital performance graded by a faculty committee; must be passed with a grade of C or better.

Music Education [MUED]

- 1210 **Fundamentals of Music.** Three credits. Music fundamentals including scales, intervals, meters, rhythm patterns, sight-singing and dictation, principles of music writing, singing and playing elementary-level compositions, keyboard experience, and analysis for understanding and appreciation.
- 1310 **Woodwind Techniques I.** One credit. For music majors beginning the study of a minor instrument in woodwinds and open to general college students desiring to learn a musical instrument.
- 1320 **Percussion Techniques.** One credit. Building performance ability on snare drum in all styles of playing. Introduces performance on principal percussion instruments, including ethnic percussion groups.
- 1330 **Brass Techniques.** One credit. Designed for music majors beginning the study of a minor instrument in brass and open to the general college student desiring to learn a musical instrument.
- 1410 **String Techniques.** One credit. Instruction in the elements of stringed instrument playing. The student will select one instrument of the string group and continue its study through one semester.
- 2000 **Philosophy and Introduction to Music Education.** Two credits. First course in the music education curriculum for students working toward vocal-general or instrumental K-12 teacher licensure. Organization and curriculum of American music education as well as the place of music education in the total program of the school explored.

- 2010 Introduction to Wind and String Instruments.** Two credits. Prerequisite: MUED 2000. Provides basic performance skills as well as historical and introductory pedagogical knowledge of selected wind and string instruments.
- 2210 Instrumental Techniques for Music Classroom.** Two credits. Prerequisite: MUED 2000. Learning to play the recorder, guitar, autoharp, and basic mallet and other percussion instruments with teaching application to school music.
- 2310 Choral Music Lab.** One credit. Two semesters of Choral Music Lab required of all Vocal/General Education majors. Study and rehearsal of public school materials and repertoire not covered in other music classes. Provides opportunities to explore various methodologies and apply pedagogical skills in a clinical environment. Also provides upper-division music education students opportunities to conduct and teach in an experimental/laboratory setting.
- 2320 Instrumental Music Lab.** One credit. Two semesters of Instrumental Lab required of all Instrumental Music Education majors. Study and rehearsal of public school materials and repertoire not covered in other music classes. Provides opportunities to explore various methodologies and apply pedagogical skills in a clinical environment. Also provides upper-division music education students opportunities to conduct and teach in an experimental/laboratory setting.
- 3190 General Music in the Middle and Senior High School.** Three credits. Prerequisite: MUED 2000. Required for students working toward vocal-general or instrumental K-12 teacher licensure. Introduces vocal/general music education majors to methods and materials available for teaching general music to students in grades 6–12.
- 3200 Music in the Elementary Grades for Music Majors.** Three credits. Prerequisite: MUED 2000. Focuses on the need for music in the classroom, provides experiences in current methods of music education, and seeks to establish a logical framework of the structure and nature of music as a discipline and an art.
- 3210 Music in the Elementary Grades for Non-Music Majors.** Three credits. Materials and methods appropriate for elementary grade general music, including a comparison of available music series and recordings; care of the child voice; beginning experience in pitched and non-pitched percussion; and simple wind instruments. Pedagogical trends and methods; analysis for understanding and appreciation.
- 3220 Choral Music in the Middle and Senior High School.** Two credits. Prerequisites: MUED 3200 and MUS 3140. Rehearsal techniques, choral materials, organization of ensembles, classification of voices including changing voice, general music methods, and materials.
- 3230 Instrumental Materials.** Three credits. Prerequisites: MUED 2000 and MUS 3140. Examination of materials suitable for public school instrumental music programs. Practice in classifying, grading, and programming. Development of music education philosophy for the control of those procedures.
- 3250 Band Organization and Marching Band Techniques.** Three credits. Prerequisite: MUED 2000. Basic drill, principles of showmanship, and show planning for the band.
- 3310 Woodwind Techniques II.** One credit. Prerequisite: MUED 1310. Instruction in the principles and problems of teaching woodwind instruments. Emphasis on problems found in performance by school students.

- 4210 General Music Program K–6.** Two credits. Prerequisite: MUEN 3200. The role of music and music teaching in elementary education; its objectives, methods, materials, and procedures; innovative trends and exemplary practices; evaluative techniques.
- 4220 Middle School Music.** Two credits. Prerequisite: MUED 3200. The role of music and music teaching in middle school education; its objectives, methods, materials, and procedures; innovative trends and exemplary practices; evaluative techniques.
- 4230 Secondary School Methods and Materials.** Two credits. Prerequisite: MUEN 3200. The role of music and music teaching in secondary education; its objectives, methods, materials, and procedures; innovative trends and exemplary practices; evaluative techniques.
- 4240 Instrumental Rehearsal Problems.** Two credits. Prerequisites: MUED 2000 and MUS 3140. Designed to improve teaching in instrumental music classes through study of rehearsal planning and techniques, the interpretation of music to students, and group dynamics.
- 4250 Advanced Marching Techniques.** Two credits. Prerequisite: MUED 3250. Further development and application of marching band techniques as utilized in half-time and contest show production. Selection and analysis of music scores.
- 4260 School Instrumental Materials.** Two credits. Analysis and compilation of a significant bibliography of instrumental material suitable for use in public schools. Emphasis on practical material possessing a maximum of aesthetic value.
- 4670 Music for the Young Child.** Four credits. Music fundamentals, materials, and methods appropriate for preschool through grade three; pantomime, role playing, improvisation, rhythm, movement, listening, and singing.

Music Ensembles [MUEN]

Music ensembles are maintained for the benefit of the student body and to provide training for students majoring or minor-ing in Music. Any MTSU student is eligible to enroll in any School of Music ensemble. All students must have permission of the instructor or audition for placement in an appropriate ensemble. Contact the music office for additional information. All music ensembles may be repeated for credit.

- 3000 Accompanying.** One credit each semester. Both solo and ensemble vocal and instrumental repertory with emphasis on the role of the piano in these combinations. Performance required.
- 3100 The Band of Blue Marching Band.** Zero to one credit per semester. Participation in all phases of the band, including rehearsals and appearances.
- 3110 Symphonic Band.** Zero to one credit each semester. Preparation and public performance of concert and repertoire. Open by audition.
- 3120 Wind Ensemble.** Zero to one credit each semester. Preparation and public performance of concert band and wind band repertoire. Open by audition.
- 3200 Concert Chorale.** Zero to one credit each semester. Participation in all phases of chorus, including rehearsals and appearances.
- 3210 Meister Singers.** One credit each semester. Participation in all phases of the group, including rehearsals and appearances. Reading of early English madrigals and traditional American music.

- 3220 Women's Chorus.** Zero to one credit each semester. Preparation and public performance of treble clef choral repertoire.
- 3230 Schola Cantorum.** One credit each semester. Preparation and public performance of English madrigals and traditional American choral repertoire. Open by audition.
- 3240 MTSU Singers.** One credit each semester. Participation and public performances of a variety of popular and commercial music. Open by audition.
- 3250 Opera Workshop.** One credit each semester. Preparation and public performance of opera. Technical and performing aspects of opera production as they pertain to light and grand opera.
- 3260 University Chorus.** Zero to one credit each semester. Preparation and public performance of varied choral repertoire. Open by audition.
- 3300 Symphony Orchestra.** Zero to one credit each semester. Participation in all phases of the orchestra, including rehearsals and appearances.
- 3400 Jazz Ensemble.** Zero to one credit each semester. A performing organization providing instruction and experience in playing jazz.
- 3410 Salsa Band.** One credit each semester. Preparation and public performance of appropriate repertoire. Open by audition.
- 3420 Commercial Music Ensemble.** One credit each semester. Acquaints the student with the rehearsal and performance of commercial music.
- 3430 Jazz Combo.** One credit each semester. Preparation and public performance of appropriate repertoire. Open by audition.
- 3500 Percussion Ensemble.** One credit each semester. Performance of percussion ensemble literature. Programs are presented.
- 3700 Mixed Chamber Ensemble.** One credit each semester. Preparation and public performance of music literature appropriate to the ensemble.
- 3710 Brass Chamber Ensembles.** One credit each semester. Preparation and public performance of appropriate chamber music repertoire. Open by audition.
- 3720 Guitar Chamber Ensembles.** One credit each semester. Preparation and public performance of appropriate chamber music. Open by audition.
- 3730 Piano Chamber Ensembles.** One credit each semester. Preparation and public performance of appropriate chamber music. Open by audition.
- 3740 String Chamber Ensemble.** One credit each semester. Preparation and public performance of appropriate chamber music. Open by audition.
- 3750 Woodwind Chamber Ensemble.** One credit each semester. Preparation and public performance of appropriate chamber music. Open by audition.
- veys the basic elements of music, world music cultures, American vernacular music, and Western art music. Establishes foundation of further music study.
- 2910 Styles and Analysis of Jazz.** Two credits. Technical features of various styles from the inception of jazz to present. Introduction of jazz style periods, performance practices, stylistic features, and artists.
- 3010 History of Western Art Music I.** Three credits. Prerequisites: MUHL 1610 and MUTH 1110 with grade of C- or better. Second required music history course for Music majors. A survey of Western art music from antiquity through the eighteenth century, including Medieval, Renaissance, and Baroque periods.
- 3020 History of Western Art Music II.** Three credits. Prerequisites: MUHL 1610 and MUTH 1110 with grade of C- or better. Third required music history course for music majors. A survey of Western art music of the eighteenth through twenty-first century, including Classical, Romantic, Modern, and Postmodern periods.
- 3120 Masterworks of Classical Music.** Three credits. Selected great works from the Western classical tradition. Listening, watching, reading, and concert attendance.
- 3140 History of Rock 'n' Roll.** Three credits. A historical and cultural examination of rock 'n' roll music from its origins to the present.
- 3150 Musics of the South.** Three credits. A cultural and historical examination of the musical traditions of the southern United States from the colonial era to the present.
- 3670 History of Popular Music in America.** Three credits. Chronological study of American popular music from the colonial period to the present. Formulation of perspectives of the role of popular music in American culture.
- 4060 Survey of Guitar Literature.** Three credits. Basic literature for the guitar from the Renaissance to the present. Analysis, listening, research, and performance.
- 4130 Survey of World Music.** Three credits. Selected music cultures from around the world and here at home. Listening, watching, reading, and concert attendance.
- 4140 Music of the Middle East.** Three credits. Examines various Middle Eastern cultural soundscapes from an ethnomusicological perspective, including the relationship between folk, classical, and popular musical traditions and music's role in religious experience.
- 4530 History of Jazz.** Three credits. Study of the history and literature of jazz music including African roots, developments and aspects of style periods, and the contemporary state of jazz. Listening and analysis.
- 4630 Seventeenth- and Eighteenth-Century Music.** Three credits. Prerequisite: Permission of instructor. A survey of Western classical music during the Baroque and Classic periods; emphasis on topics selected by instructor.
- 4640 Nineteenth-Century Music.** Three credits. Prerequisite: Permission of instructor. A survey of Western classical music during the Romantic period; emphasis on topics selected by instructor.
- 4650 Twentieth-Century Music.** Three credits. Prerequisite: Permission of instructor. A survey of twentieth century Western art music; emphasis on topics selected by instructor. Examines the major developments of music during the late Romantic, Modern, and Postmodern eras.

Music History and Literature [MUHL]

- 1610 The World of Music.** Two credits. Prerequisite: MUTH 1000 with a grade of C- or better or satisfactory score on theory diagnostic exam. The first required music history course for music majors. Sur-

- 4660 American Music.** Three credits. Prerequisite: Permission of instructor. A survey of American music from the colonial era to the present; added emphasis on topics selected by the instructor. Examines folk, popular, art, sacred, and secular traditions within their cultural and historical contexts.
- 4680 Choral Literature.** Two credits. Prerequisite: Permission of instructor. Examination of choral literature from the Renaissance to the present. Program selection. Analysis of choral pieces.
- 4690 Piano Literature.** Three credits. Prerequisite: Permission of instructor. Survey of the basic literature of the harpsichord and the piano from the eighteenth century to the present. Live performance, analysis, and research.
- 4710 Vocal Literature.** Three credits. Prerequisite: Permission of instructor. Basic repertoire of Italian airs, German lieder, French art songs, and solo vocal works of other nationalistic schools, as well as English and American song literature.
- 4720 Organ Literature.** Two credits. Prerequisite: Permission of instructor. A chronological study of organ literature from the Medieval period to the present. Objectives include knowledge of the repertoire and composers and historical perspective of styles and organ building.
- 4730 Brass Literature.** Two credits. Prerequisite: Permission of instructor. A chronological study of brass literature from the Renaissance period to the present. Objectives include knowledge of the repertoire and composers and historical perspective of styles, types, and common performance practice.
- 4740 Percussion Literature.** Two credits. Prerequisite: Permission of instructor. A chronological study of percussion literature from the nineteenth century to the present. Objectives include knowledge of the repertoire and composers and historical perspective of styles, types, and common performance practice.
- 4750 String Literature.** Two credits. Prerequisite: Permission of instructor. A chronological study of string literature from the nineteenth century to the present. Objectives include knowledge of the repertoire and its composers and historical perspective of styles, types, and common performance practice.
- 4760 Woodwind Literature.** Two credits. Prerequisite: Permission of instructor. A chronological study of woodwind literature from the Renaissance period to the present. Objectives include knowledge of the repertoire and composers and historical perspective of styles, types, and common performance practice.
- 4790 Orchestral and Wind Ensemble Literature.** Two credits. Prerequisite: Permission of instructor. An in-depth study of orchestral and wind ensemble repertoire.
- 4800 Art Music and African Americans.** Two credits. A chronological and topical overview of African American musicians and composers and the primary genres of African American art music from slavery to the present.
- ternational Phonetic Alphabet and correct pronunciation of texts in Italian.
- 2200 Diction for Singers III (German).** Two credits. Prerequisite: MUPD 2180. Lecture demonstration course for the familiarization of the International Phonetic Alphabet and correct pronunciation of texts in German.
- 2210 Diction for Singers IV (French).** Two credits. Prerequisite: MUPD 2180. Lecture demonstration course for familiarization of the International Phonetic Alphabet and correct pronunciation of texts in French.
- 3050 Jazz Pedagogy.** Two credits. Prerequisite: Permission of instructor. Techniques and methods of teaching jazz studies including the training of jazz ensembles and combos.
- 4110 Advanced Brass Pedagogy.** Two credits. Prerequisite: Permission of instructor. Advanced study of conceptual, physiological, acoustical, and pedagogical methods and materials used in the teaching of beginning, intermediate, and advanced brass students.
- 4120 Advanced Percussion Pedagogy.** Two credits. Prerequisite: Permission of instructor. Advanced study of conceptual, physiological, acoustical, and pedagogical methods and materials used in the teaching of beginning, intermediate, and advanced percussion students.
- 4130 Advanced String Pedagogy.** Two credits. Prerequisite: Permission of instructor. Advanced study of conceptual, physiological, acoustical, and pedagogical methods and materials used in the teaching of beginning, intermediate, and advanced string students.
- 4140 Advanced Woodwind Pedagogy.** Two credits. Prerequisite: Permission of instructor. Advanced study of conceptual, physiological, acoustical, and pedagogical methods and materials used in the teaching of beginning, intermediate, and advanced woodwind students.
- 4310 Vocal Pedagogy.** Two credits. Prerequisite: Permission of instructor. Techniques for teaching the fundamentals of singing. Vocalises and repertoire. Physical aspects of singing.
- 4320 Piano Pedagogy.** Two credits. Prerequisite: Permission of instructor. The various technical and philosophical approaches in teaching piano. Examination of teaching repertoire through intermediate level. Supervised teaching through intermediate level.
- 4330 Organ Pedagogy.** Two credits. Prerequisite: Permission of instructor. Instruction in the principles of teaching organ—(1) manual and pedal techniques, (2) organ methods, and (3) organ repertoire of varying degrees of difficulty and of all period styles from pre-Bach through twentieth century.
- 4350 Guitar Pedagogy.** Two credits. Prerequisite: Permission of instructor. Study of the theoretical and practical basis of teaching guitar.

Music Pedagogy [MUPD]

- 2180 Diction for Singers I (English and Latin).** Two credits. Lecture demonstration course for familiarization of the International Phonetic Alphabet and correct pronunciation of texts in English and Latin.
- 2190 Diction for Singers II (Italian).** Two credits. Prerequisite: MUPD 2180. Lecture demonstration course for familiarization of the In-
- 1000 Elements of Music.** Three credits. For those needing remedial work before enrolling in Theory 1110. Topics covered include music reading in G and F clefs, intervals, major and minor scales; rhythm.
- 1110 Theory and Aural Skills I.** Four credits. Prerequisite: MUTH 1000 with grade of C- or higher or satisfactory score on theory diagnostic exam. Harmonic tonality and fixed-do solfège through chorale analysis and harmonizations of given bass lines. Major and minor

Music Theory [MUTH]

scales and harmonizations through secondary function. Meets for five hours per week.

- 1120 Theory and Aural Skills II.** Four credits. Prerequisite: MUTH 1110. Harmonic tonality and fixed-do solfège through chorale analysis and harmonizations of given bass lines. Modal scales, harmonization, and analysis through the augmented sixth. Meets for five hours per week.
- 2110 Theory and Aural Skills III.** Three credits. Prerequisite: MUTH 1120. Harmonic tonality and twentieth-century vocabularies. Nineteenth-century chromaticism. Meets for four hours per week.
- 2120 Theory and Aural Skills IV.** Three credits. Prerequisite: MUTH 2110. Continued study of harmonic tonality and twentieth-century vocabularies. Twentieth-century practices. Meets for four hours per week.
- 3020 Commercial Songwriting.** Three credits. (Same as RIM 3020.) Prerequisites: RI majors - admission to candidacy and RIM 1230 or MUTH 1110 or permission of instructor; others - permission of instructor. Organization of ideas, words, and music into the writing of popular songs. Analysis of songwriting trends. Students will be expected to play guitar or piano and sing.
- 3110 Counterpoint.** Three credits. Prerequisite: MUTH 2120 with C- or better. Review and continuation of contrapuntal techniques. Canon, imitation, various contrapuntal devices, inventions, and beginning fugue. Analysis and some degree of original work.
- 3160 Jazz Theory I.** Three credits. Prerequisite: MUTH 1120. Exploration of the harmonic syntax, melodic construction, and song forms in jazz music. Analysis, listening, original composition, and practice hearing jazz chords and progressions.
- 3170 Jazz Theory II.** Three credits. Prerequisite MUTH 3160. Further study of jazz harmonic and melodic language, including non-functional harmony, modal progressions, and other post-bebop developments. Analysis, ear training, and much original composition.
- 4110 Form and Analysis.** Two credits. Prerequisite: MUTH 2120. Binary and ternary forms, simple rondos and sonatas progressing to sonata form, large rondos, theme and variations, art song, and free forms. Stylistic analysis and study of devices and materials from early to contemporary periods.
- 4130 Orchestration and Arranging.** Two credits. Prerequisite: MUTH 2120. Compass and tonal qualities of band and orchestra instruments; transposition. Fundamentals of arranging for various instrumental groupings.
- 4170 Jazz Arranging.** Two credits. Prerequisite: MUTH 3160 or permission of instructor. Fundamental considerations in arranging music for small jazz ensembles. Stylistic elements of melody, harmony, rhythm, texture, and form; notation, score preparation, and layout. Students will complete an arrangement for five horns and rhythm section.
- 4180 Improvisation I.** Two credits. Prerequisite: MUTH 1120 or permission of instructor. Basic tools of jazz improvisation including chord/scale relationships, melodic construction, and practice techniques. In-class playing over blues, rhythm changes, and other standard jazz progressions. Elements of the bebop style. Preparation of playing exercises and several solo transcriptions.
- 4190 Introduction to MIDI and Sound Synthesis.** Three credits. (Same as RIM 4190.) Prerequisites: RI majors - admission to candidacy and RIM 1230 or MUTH 1110; others-RIM 3010, RIM 1230,

or MUTH 1110 or permission of instructor. An introduction to synthesizer programming and the Musical Instrument Digital Interface (MIDI) with emphasis on history, theory, and application. Hands-on activities include synthesizer programming with virtual instruments and MIDI sequencing using a digital audio workstation. Laboratory required.

- 4270 Choral Arranging.** Two credits. The fundamentals of arranging musical works for vocal ensembles of various sizes, combinations, and skill levels.
- 4280 Jazz Arranging II.** Three credits. Prerequisite: MUTH 4170. Advanced analyzing and arranging of various combinations of instruments and voice for small and large jazz ensembles; periods, performance practices, stylistic features, and artists.
- 4290 MIDI Sequencing and Virtual Instruments.** Three credits. (Same as RIM 4290.) Prerequisites: RI majors - admission to candidacy and RIM/MUTH 4910; others - RIM/MUTH 4190 or permission of instructor. An advanced hands-on course with an emphasis on MIDI sequencing and virtual instruments within Pro Tools, Reason, and other music production software. Drum machines, synthesizers, samplers, and other electronic instruments used to create a commercial music track. Laboratory required.
- 4380 Improvisation II.** Two credits. Prerequisite: MUTH 4180. Continuation and expansion of materials covered in MUTH 4180. Application of advanced scales and construction of more chromatic melodies. Elements of post-bebop styles. In-class playing of exercises, transcriptions, and improvised solos.
- 4590 Computer-based Scoring for Visual Media.** Three credits. (Same as RIM 4590.) Prerequisites: RI majors - admission to candidacy, RIM/MUTH 4190 and either RIM 4200 or RIM/MUTH 4290; others - RIM/MUTH 4190 and either RIM 4200 or RIM/MUTH 4290 or permission of instructor. Writing music for visual media using the capabilities of a computer workstation. Introduces compositional techniques utilizing Macintosh sequencing software and QuickTime video playback in combination with synthesizers and sample playback programs. Concepts include synchronization of music to picture, tempo selection, sound source selection/manipulation, and analysis of the dramatic content of a scene. Laboratory required.

Nursing [NURS]

- 3000 Professionalism in Nursing.** One credit. Exposes the novice nursing student to the profession of nursing. Concept of professionalism explored and related to nursing. Includes a brief historical review of nursing and nursing theories. Professional values, practice standards, and communications with health care professional introduced. Legal implications for nursing explored.
- 3010 Pathophysiology.** Three credits. (Same as BIOL 3340.) Prerequisites: BIOL 2010/2011, 2020/2021, and 2230/2231. Basic mechanisms of disease processes and their role in disrupting normal physiology. Three hours lecture.
- 3030 Health Assessment.** Two credits. Prerequisites: BIOL 2010/2011 and 2020/2021; accepted into upper-division nursing. Corequisite: NURS 3040. Principles and techniques required for the assessment and analysis of data (diagnosis). Normal assessment findings and selected abnormal findings studied. Cultural variations and assessment variations across the lifespan explored.
- 3040 Health Assessment Laboratory.** One credit. Prerequisites: BIOL 2010/2011 and 2020/2021; accepted into upper-division nursing. Corequisite: NURS 3030. Opportunity to practice the basic principles and techniques required for the assessment and analysis

of data (diagnosis). Normal assessment findings in the adult as well as selected abnormal findings studied. Cultural variations and assessment variations across the lifespan explored. Two-hour laboratory.

3111 Professional Role Development. Three credits. Socializes the returning R.N. into the role of a baccalaureate nurse. Professionalism in nursing, role transition, history of nursing education, and issues pertinent to returning adult learners.

3170 Pharmacological Requisites for Nurse Agency. Three credits. Prerequisites: General Education Natural Science; BIOL 2230/2231, 2010/2011, 2020/2021; NURS 3000, 3010, 3030, 3040, 3370. Knowledge and responsibility necessary for the assessment and monitoring of clients receiving pharmacotherapeutics. Three hours lecture.

3350 Introduction to Nursing Practice. Five credits. Prerequisites: NURS 3000, 3010, 3030, 3040, and 3370. Corequisites: NURS 3170 and 3360. Introduces nursing care concepts necessary to support basic care of clients across the lifespan; foundation for subsequent nursing courses. Five hours lecture.

3360 Introduction to Nursing Practice—Clinical. Three credits. Prerequisites: NURS 3000, 3010, 3030, 3040, and 3370. Corequisites: NURS 3170 and 3350. Nursing practice applied in laboratory and clinical settings. Eight hours laboratory per week for duration of course.

3370 Health and Gerontology. Three credits. Focuses on the normal aging process and related health care issues from an interdisciplinary perspective. Incorporates concepts of health promotion, prevention, and adaptation for those who are aging and their families. Three hours lecture.

3530 Caring for Adult Clients I. Five credits. Prerequisites: NURS 3170, 3350, 3360, and 3570. Corequisite: NURS 3540. Professional nursing care in a variety of settings for the adult client with simple and chronic health problems. Five hours lecture.

3540 Caring for Adult Clients I—Clinical. Four credits. Prerequisites: NURS 3170, 3350, 3360, 3570. Corequisite: NURS 3530. Applying the nursing process in a clinical setting with the adult client experiencing acute and chronic health deviations. Twenty hours clinical/lab per week for duration of course.

3550 Caring for the Childbearing Family. Three credits. Prerequisites: NURS 3170, 3350, 3360, and 3570. Corequisite: NURS 3560. Incorporates the nursing process and critical thinking skills into the professional nursing care of the childbearing female and the family. Focuses on health promotion, prevention, and adaptation for the childbearing client. Three hours lecture.

3560 Caring for the Childbearing Family—Clinical. Two credits. Prerequisites: NURS 3170, 3350, 3360, and 3570. Corequisite: NURS 3550. Nursing process for applying the clinical application and principles of nursing and family theory to childbearing families. Focuses on health promotion, prevention, and adaptation for childbearing families. Sixteen hours clinical/lab per week for duration of course.

3570 Health Care Research. Three credits. Prerequisites: NURS 3000, 3010, 3030, 3040, and 3370; MATH 1530; or permission of the director of the School of Nursing. Utilizes systematic inquiry and analysis by reinforcing the problem-solving method. Utilization of research in the improvement of health care practice to affect positive client outcomes examined. Attention given to a thorough search and critique of current research literature related to a problem area selected by the student. Three hours lecture.

4005 Independent Health Care Study. One to three credits. Prerequisites: Admission to the upper division of the nursing program and permission of instructor. Allows the student to pursue individual interests in nursing by contracting with an instructor and documenting the plan of learning as well as its fulfillment. One to three lectures or two to six laboratory hours.

4035 Special Topics in Nursing. Three credits. Explores selected nursing topics in depth. Specified topic offered each semester according to student interest and faculty availability. Can be taken for a maximum of nine hours.

4036 Nursing's Image in the Media. Three credits. Explores the variety of images that the public, the media, and nurses hold of nurses and the nursing profession. Examines personal beliefs regarding these images and the influence these beliefs can play in major health care issues.

4037 End-of-Life Care. Three credits. Focuses on the role of the nurse in end-of-life care across the lifespan and among cultures. Covers a wide range of topics and issues, incorporating a holistic perspective. Students explore their personal values, beliefs, and practices related to end-of-life.

4038 Medical/Surgical Practicum. Three credits. Prerequisites: Admission to upper division nursing program; NURS 3530 and 3540; and permission of instructor. Allows students to pursue individual interests in nursing by contracting with an instructor and documenting the plan of learning as well as its fulfillment. Six laboratory hours.

4039 Health Care Issues and Trends. Three credits. Online course provides opportunities for examination and critical evaluation of significant issues and trends in the current health care environment.

4055 Informatics for the Health Care Professional. Three credits. Theoretical foundations of informatics for health care professionals. Examines information technology and tools on the Internet. Emphasis on impact of automated data management through information systems in health care.

4210 Health Care Research. Three credits. Prerequisites: MATH 1530. The research process in developing a research proposal for a student-identified problem in the health care delivery system. Discussion and critique of related research findings and research proposals of peers. Three hours lecture.

4330 Caring for Adult Clients II. Five credits. Prerequisites: NURS 3530, 3540, 3550, and 3560. Corequisite: NURS 4340. Incorporates the nursing process and critical thinking skills into the professional nursing care of the adult client experiencing complex, multi-system illness, failure, and trauma. Opportunities for the nursing student to combine acquired knowledge from previous nursing courses and courses from other disciplines with new phenomena encountered in a variety of high acuity care settings. Five hours lecture.

4340 Caring for Adult Clients II—Clinical. Four credits. Prerequisites: NURS 3530, 3540, 3550, and 3560. Corequisite: NURS 4330. Opportunity for nursing students to integrate didactic and empirical knowledge and skills for clients with critical needs into the acute care setting. Understanding of complex, multi-system illness, failure, and trauma in providing nursing care. Twenty hours clinical/lab for duration of course.

4350 Caring for Children and Teen Clients. Three credits. Prerequisites: NURS 3530, 3540, 3550, and 3560. Corequisite: NURS 4360. Incorporates the nursing process and critical thinking skills into the professional nursing care of children, adolescents, and

their families. Principles of growth and development and family-centered care. Three hours lecture.

4360 Caring for Children and Teen Clients—Clinical. Two credits. Prerequisites: NURS 3530, 3540, 3550, and 3560. Corequisite: NURS 4350. Provides assistance in transferring knowledge to the implementation of nursing care of children, adolescents, teens, and their families in a variety of clinical settings. Sixteen hours clinical/lab per week for duration of course.

4530 Caring for the Community as Client. Three credits. Prerequisites: NURS 4330, 4340, 4350, 4360. Corequisites: NURS 4550 and 4560. Opportunity for students to learn theoretical concepts and epidemiological principles related to health promotion and preventive services. Primary, secondary, and tertiary levels of prevention covered. Focuses on the work of an interdisciplinary health care team and concepts of nursing and public health when working with the individual, family, group, and community as client. Three hours lecture.

4540 Licensure Exam Preparation. One credit. Prerequisites: NURS 4330, 4340, 4350, and 4360. Offers preparation for writing the National Council for Licensing Examination for Registered Nurses (NCLEX-RN).

4550 Caring for Clients with Mental Health Alterations. Three credits. Prerequisites: NURS 4330, 4340, 4350, and 4360. Corequisites: NURS 4530, 4560. Opportunity for students to learn theoretical concepts relating to mental health and psychiatric nursing. Interpersonal and group communication, psychopathology, and legal and ethical issues explored. Methods used in providing nursing care for clients with alterations in mental health presented. Interdisciplinary health care team and its function in the psychiatric setting explored. Three hours lecture.

4560 Nursing Care of Vulnerable Aggregates Clinical. Three credits. Prerequisites: NURS 4330, 4340, 4350, and 4360. Corequisites: NURS 4530 and 4550. Familiarizes the undergraduate nursing student with ways to care for aggregates. Emphasis on clients in the community and in in-patient psychiatric facilities. Sixteen hours clinical/lab per week for duration of class.

4570 Professional Practice and Leadership. Three credits. Prerequisites: NURS 4330, 4340, 4350, and 4360. Corequisite: NURS 4580. Opportunity for students to learn theoretical concepts relating to leadership in nursing. Theories of leadership and management including legal and ethical issues explored. Three hours lecture.

4580 Professional Practice and Leadership Clinical. Three credits. Prerequisites: NURS 4330, 4340, 4350, 4360. Corequisite: NURS 4570. Clinical application of professional practice and leadership principles. Provides independence in the management of nursing systems in various health care institutions. Sixteen hours clinical/lab per week for duration of course.

Nutrition and Food Sciences [NFS]

1240 Principles of Nutrition. Three credits. Fundamentals of normal nutrition and its relationship to health and physical fitness with emphasis on the scientific, psychological, sociological, and economic aspects of nutrition. (Credit not allowed for Nutrition and Food Sciences major.)

2220 Nutrition for the Health Sciences. Three credits. Elements of scientific, psychological, sociological bases of nutrition and its relationship to prevention and treatment of degenerative diseases. Emphasis on fostering communication between health care practitioners in assessment and implementation of nutrition care.

3100 Food and Culture in the United States. Three credits. Online course traces development of foods in regions of the U.S. by immigration of ethnic groups or as native to areas. Influence of immigrant cultures and customs on the introduction and development of regional foods. Concepts include food production, supply, and food processing over the last 150 years and the impact on diet.

3200 Food Principles. Three credits. Basic physical and chemical principles, techniques, skills, sanitation, and economics involved in quality food selection, composition, and preparation. Five hours per week. Offered fall only.

3201 Food Principles Lab. Zero credits.

3210 Meal Management. Three credits. Functions of management applied to serving nutritionally adequate and aesthetically satisfying meals. Management of human and nonhuman resources in group situations. Five hours per week.

3260 Community Nutrition. Three credits. Prerequisite: NFS 1240 or 2220. Nutrition problems and practices in the community; nutrition programs of state and federal agencies; supervised field experiences; preparation of nutrition education materials.

3280 Nutrition in Health Promotion. Three credits. Prerequisite: NFS 1240 or 2220. Nutrition education resources and skills for individuals working in health promotion and wellness areas including methods for weight management, evaluating popular nutrition fads, dietary assessment, sports nutrition, dietary fat, and cholesterol programs.

4090 Field Experience in Foods and Nutrition. Three credits. Prerequisites: NFS 1240 or 2220, 4200, 4220; permission of instructor; 2.25 GPA. Directed and supervised experience in a specialized area of dietetics or food management. Includes a minimum of 150 hours at the work site.

4210 Nutrition in Aging. Three credits. Prerequisite: NFS 1240 or 2220. Nutritional needs of elderly individuals and how these requirements are affected by physiological, pathological, and socioeconomic changes associated with aging. Emphasis placed on assessment, nutrition counseling skills, and resources to assist elderly individuals with adequate nutrient intake.

4220 Food Systems Management. Three credits. Prerequisites: NFS 3200 and HSC 4430. Corequisite: NFS 4221. Principles and production of quantity foods. Emphasis on menu planning and evaluation, production planning, quality control, facilities and equipment, safety, and sanitation. Five hours per week.

4221 Food Systems Management Lab. Zero credits. Corequisite: NFS 4220.

4222 Nutrition and Food Service Management. Three credits. Prerequisite: HSC 4430. Roles and responsibilities of food and nutrition professionals. Emphasis on marketing food and nutrition services, financial management, facilities planning and design, human resource management, work improvement and productivity. Offered spring only.

4240 Experimental Food Study. Three credits. Prerequisites: NFS 3200 and CHEM 2030/2031 or permission of instructor. Chemical and physical factors affecting the flavor, texture, color, and appearance of food. Emphasis placed on evaluation of sensory qualities of food, using subjective and objective measurements and new food product development. Offered spring only.

4250 Maternal and Child Nutrition. Three credits. Prerequisite: NFS 1240 or 2220. Nutritional needs during pregnancy, infancy, and

childhood related to physical and mental development. Emphasis on cultural, social, and psychological aspects of the development of food patterns and nutrition education resources.

4251 Nutrition for the Young Child. Three credits. Fundamentals of nutrition with emphasis on its relationship to growth, development, and health during the prenatal period, infancy, and childhood. Geared to Early Childhood Education and Child Development and Family Studies majors.

4260 Food Safety Issues from Production to Consumption. Three credits. Issues impacting food production, food storage and transportation, food processing, and food consumption within food production facilities, the home, and food service facilities. Consumer concerns evaluated based on risk theory and scientific evaluation of safety, including decision-making through critical thinking. Food standards and regulations designed to improve safety of the food supply discussed.

4270 Advanced Nutrition. Three credits. Prerequisite: NFS 2220. Advanced study of nutrients, standards for determination of nutrient needs and metabolism of nutrients in the body. Offered spring only.

4300 Medical Nutrition Therapy I. Three credits. Prerequisites: BIOL 2030/2031 and NFS 4270. Modification of diets in pathological and special conditions. Diseases affecting the cardiac, hepatic, pancreatic, and gastrointestinal systems emphasized. Practice in applying strategies in medical nutrition therapy provided through structured case study format. Offered fall only.

4310 Medical Nutrition Therapy II. Three credits. Prerequisites: BIOL 2030/2031; NFS 4270 and 4300. Modification of diets in pathological and special conditions. Diseases affecting the renal system as well as cancer, diabetes, and metabolic stress emphasized. Practice in applying strategies in medical nutrition therapy provided through case study format. Offered spring only.

4400 Dietetic Practicum. Six credits. Prerequisites: NFS 4220, 4300, and 4310. Practical preparation in the field of clinical dietetics. Clinical experience provided with the cooperation of Middle Tennessee Medical Center and other facilities. For senior dietetics students only. Offered summer only.

Organizational Communication [ORCO]

3240 Introduction to Organizational Communication. Three credits. Theories and processes of communication within organizations.

3245 Women, Leadership, and Communication. Three credits. (Same as LEST 3245.) Prerequisites: COMM 2300 3340, and 3225; ORCO 3240. Communication behaviors and issues unique to women in leadership positions. Students exposed to various activities and discussions designed to develop critical-thinking skills, broaden perspectives, adapt decision-making skills to the professional environment, and create professional relationships.

3250 Organizational Communication in Communities. Three credits. Theories and techniques involving communication between organizations and their constituencies. Identification and analysis of communication involving corporate philanthropy and fundraising, fundraising events, volunteers, image, and ethical considerations.

3500 Strategic Communication in Organizations. Three credits. Prerequisite: Junior standing or permission of instructor. Organizational communication and its relationship to employees, leadership, corporate culture, diversity, change, and innovation.

3650 Conflict and Organizations. Three credits. Prerequisite: Junior standing or permission of instructor. The role of communication in conflict management/resolution between or among individuals and groups. Examines workplace violence, fraud, mediation, grievances, substance abuse, and discrimination.

3750 Organizational Communication Analysis. Three credits. Prerequisite: Junior standing or permission of instructor. Critical analysis of organizational communication using survey research and other methods including studies of content, readability, readership, information dissemination, and organizational effectiveness.

3800 Introduction to Arts Management. Three credits. (Same as THEA 3800.) Prerequisite: Junior standing or permission of instructor. Management of a not-for-profit arts organization. Topics include organizational design, strategic planning, budgeting, marketing, and fundraising within the context of a visual or performing arts organization. Guest lecturers from regional arts organizations. Projects and discussion for individual interests in various arts disciplines. Laboratory hours required and/or crew requirement.

4000 Topics in Organizational Communication. Three credits. Prerequisite: Completion of 60 credit hours. An in-depth study of a special topic which is significant in organizational communication literature and/or practice.

4200 Multinational Organizations. Three credits. Prerequisites: ORCO 3240 and completion of 60 credit hours. A critical study of nonprofit multinational organizations and expatriate employees, including analysis of organizational preparation and training.

4220 Internship in Organizational Communication. One to three credits. Prerequisites: ORCO 3240, permission of department, and completion of 60 hours. Practical experience in applying coursework to actual situations and projects in organizations, both on and off campus, in a supervised internship program. May be repeated for a maximum of six credits.

4450 Directed Study in Organizational Communication. Three credits. Prerequisites: ORCO 3240, permission of instructor, and completion of 60 credit hours. Intensive, independent study to pursue research in a specified area which is significant in organizational communication literature and/or practice.

4500 Senior Capstone in Organizational Communication. Three credits. Prerequisite: Senior standing or permission of instructor. Capstone course combines tools learned in both statistical methods and research methods courses with theory from other courses in the major. Addresses broader issues such as consulting ethics and social responsibility.

4850 Development for Arts Organizations. Three credits. (Same as THEA 4850.) Prerequisite: Junior standing or permission of instructor. Development of not-for-profit arts organizations. Focuses on comprehensive approaches to fundraising. Includes not-for-profit arts organizations, board structures, and the terminology and tools of the fundraising profession. Ideal for future artist, not-for-profit manager, or those interested in fundraising. Laboratory hours required.

Paralegal Studies [PLEG]

3010 Litigation. Three credits. Prerequisites: PS 2010 and 2440. Legal procedures required for introducing and pursuing cases in the judicial system.

3410 Family Law. Three credits. Prerequisites: PS 2010 and 2440. The law of marriage, divorce, child custody and support, adoption, paternity, and related issues.

- 3420 Torts.** Three credits. Prerequisites: PS 2010 and 2440. The law of injury to legally protected interests in personal safety, liberty, and property.
- 4010 Internship.** Three credits. Supervised work in a law office or agency as a paralegal assistant.

Photo Communication [PHOT]

- 2050 Basic Black and White Photography.** Three credits. Black and white processing and printing; principles and procedures combined with theories of visual perception. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3040 History of Photography.** Three credits. Evolution of photographic imagery from the invention through contemporary work. The movements, themes, and genres developed by individual photographers.
- 3110 Intermediate Photography I.** Three credits. Prerequisite: PHOT 2050. Further investigation into the exposure and development controls of black and white photography as a method of expression and communication. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3120 Intermediate Photography II.** Three credits. Prerequisites: PHOT 3110 and ART 1610. A continuation of 3110. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 3200 Still Digital Imaging.** Three credits. (Same as EMC 3200.) Prerequisites: Admission to candidacy; PHOT 2050 and instructor approval; must have some working knowledge of the Macintosh computer system. Computerization of traditional film images and use of digital cameras allows students to use different software programs to manipulate photographic images. Ethics and law discussed along with techniques and hands-on analysis of this new medium. **Lecture/lab, three-six contact hours per week.**
- 3580 Photography Practicum.** One to three credits. Prerequisites: Admission to candidacy; junior standing and permission of instructor. Practical experience in an on-campus photography setting. A minimum of 75 hours work for each hour of credit. **Note:** Total university credit for internship, practicum, and individual problems courses cannot exceed 6 credits. Pass/Fail.
- 3810 Color Photo Communication I.** Three credits. Prerequisites: Admission to candidacy; ART 1610 and PHOT 3110 or consent of instructor. The making of color images using transparencies and color print materials. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 4000 Photography Internship.** One to three credits. Prerequisites: Admission to candidacy; senior standing and permission of department chair or instructor. Practical experience for advanced students in a professional setting. A minimum of 75 hours work plus other assignments will be required for each hour of credit. **Note:** Total university credit for internship, practicum, and individual problems courses cannot exceed 6 credits. Pass/Fail.
- 4040 Color Photo Communication II.** Three credits. Prerequisites: Admission to candidacy; PHOT 3040 and 3810 or consent of instructor. A continuation of 3810. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 4060 Photojournalism.** Three credits. (Same as EMC 4060.) Prerequisites: Admission to candidacy; PHOT 3120 and 3810 or consent of instructor. Principles and practices of photography, including documentary, news and feature portraiture, photo stories and essays, and photo layout. Emphasis on newspaper assignments, participation in campus publications, portfolio editing and production, and internship preparation. Laboratory required. **Lecture/lab, three-six contact hours per week.**

- 4190 Ethics and Law for Visual Communicators.** Three credits. Prerequisites: Admission to candidacy; junior status with declared major. Background in ethics and law for the visual communicator. Focus on ethical philosophies, ethics case studies, and solutions to ethical dilemmas; copyright, privacy, and libel law.
- 4220 Advanced Photojournalism.** Three credits. Prerequisites: Admission to candidacy; PHOT 4060 and/or consent of instructor. Builds on the basic information given in PHOT 4060. Advanced photographic techniques, including digital imaging, information on ethics and law as they pertain to the image maker, along with an examination of different styles of photojournalism addressed by classroom demonstration, lecture, and practical assignments. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 4270 Photo Illustration.** Three credits. Prerequisites: Admission to candidacy; PHOT 4280. Studio illustration with food, fragrance, beverage, jewelry, glass, and flatware with an emphasis on tabletop. Introduction to large-format view camera and studio lighting. Problems in advertising photography including responsibilities under truth in advertising. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 4280 Editorial Photography.** Three credits. Prerequisites: Admission to candidacy; PHOT 3040, 3120, and 3810. Editorial illustration for fashion, corporate, annual report, home, and garden with emphasis on location lighting. Exploration of various career opportunities and business practices open to the professional photographer. Laboratory required. **Lecture/lab, three-six contact hours per week.**
- 4290 Documentary Photography.** Three credits. Prerequisites: PHOT 3120 and 3810. Those students using color print material must be enrolled in or have taken PHOT 4040. Students will photograph several short-term photo essays and picture stories in addition to a long-term project in a documentary style. Research on the aspects of and photographers practicing contemporary documentary photography. Laboratory required. **Lecture/lab, three-six contact hours per week.**

Physical Education [PHED]

The physical education activity courses are designed to prepare students for future participation in these activities by developing basic competencies in the fundamental skills of each activity. Opportunities for the improvement of skill and the learning of new skills are provided through intermediate and advanced level courses in certain activities.

- 1000 Team Games and Conditioning.** One credit.
- 1010 Beginning Folk and Square Dance.** One credit.
- 1020 Beginning Social Dance.** One credit.
- 1040 Beginning Tennis.** One credit.
- 1050, 1060 Adapted Physical Activity.** One credit each.
- 1080 Beginning Bowling.** One credit. Fee required.
- 1100 Beginning Karate.** One credit.
- 1110 Casting and Fishing Techniques.** One credit.
- 1120 Backpacking and Hiking.** One credit.
- 1130 Beginning Bicycling.** One credit.
- 1140 Gymnastics.** One credit.

- 1150 Beginning Badminton.** One credit.
- 1160 Beginning Archery.** One credit.
- 1170 Beginning Racquetball.** One credit.
- 1180 Aerobic Walking.** One credit.
- 1190 Aerobic Dance.** One credit.
- 1200 Beginning Weight Training.** One credit.
- 1210 Beginning Basketball.** One credit.
- 1220 Beginning Soccer.** One credit.
- 1230 Team Handball.** One credit.
- 1240 Water Aerobics.** One credit. No swimming skills required.
- 1250 Self Defense.** One credit.
- 1260 Intermediate Bicycling.** One credit.
- 1270 Yoga.** One credit.
- 1280 Beginning Pilates.** One credit. Series of floor exercises developed by Joseph H. Pilates designed to increase strength, flexibility, stamina, and concentration. Focus on postural alignment and body mechanics; facilitates enhancement of kinesthetic sense overall and increases body awareness.
- 1290 Tai Chi.** One credit. All 56 postures of Chen-style tai chi taught in one semester. Includes an overview of the history, philosophy, principles, and benefits of tai chi.
- 1300 Personal Conditioning.** One credit. Basic concepts, techniques, and activities needed to design an individual conditioning program. Basic nutrition also covered.
- 1310 Beginning Rugby.** One credit. Introduces the basics of the game of rugby. Coed, non-contact play coupled with classroom analysis.
- 1320 Intermediate Rugby.** One credit. Continued study of the continuous game. Principles of play with additional emphasis on coaching, officiating, and the laws and strategies of Rugby.
- 1330 Intermediate Tai Chi.** One credit. Prerequisite: PHED 1290 with a minimum grade of B or permission of instructor. All 40 postures of Yang International Competition Style Tai Chi taught in one semester. Explores history, philosophy, principles, and benefits of tai chi.
- 1340 Qigong (Ch'i Kung).** One credit. Involves the coordination of different breathing patterns with various physical postures and motions of the body. Research benefits: stress reduction, decreased blood pressure, improved health.
- 2000 Beginning Wrestling.** One credit.
- 2010 Beginning Modern Dance.** One credit.
- 2020 Beginning Golf.** One credit. Fee required.
- 2030 Tumbling and Trampoline.** One credit.
- 2040 Beginning Swimming.** One credit.
- 2050, 2060 Adapted Physical Activity.** One credit each.
- 2070 Intermediate Swimming.** One credit.
- 2071 Fitness Swimming.** One credit. Refining swimming strokes so students can swim with more ease, efficiency, and power. Offers information needed to design workout for using swimming as a fitness activity.
- 2080 Intermediate Modern Dance.** One credit.
- 2090 Intermediate Tennis.** One credit.
- 2110 Basic Horsemanship—Equitation.** One credit.
- 2120 Scuba Diving.** Two credits. Prerequisite: PHED 2070. Students must pass a swimming proficiency test.
- 2121 Advanced Scuba Diving I.** Two credits. Prerequisite: Open water certification; not a prerequisite for PHED 2124. Exposes divers to scuba equipment maintenance, navigation skills, ability to safely participate in night and limited visibility diving, and basic seamanship skills.
- 2123 First Aid for Scuba Divers.** Three credits. Prerequisite: PHED 2120. Provides knowledge and skills necessary for certification in CPR for the professional rescuer. Covers blood-borne pathogens, oxygen administration, and first aid for scuba divers.
- 2124 Advanced Scuba Diving II.** Two credits. Prerequisite: Open water certification; can be taken before PHED 2121. Offers training to prevent, recognize, and handle in-water problems and diving emergencies; search and recovery; oxygen administration; CPR; and to utilize enriched air nitrox as a breathing medium.
- 2130 Basic River Canoeing.** One credit. Prerequisite: PHED 2070. Students must pass a swimming proficiency test.
- 2140 Basic Lifeguarding.** Two credits. Includes lifeguard training, automated external defibrillation, professional rescuer oxygen administration, and preventing disease transmission.
- 2150 Synchronized Swimming.** One credit. Prerequisite: PHED 2070.
- 2160 Ballet—Primary.** One credit.
- 2170 Ballet—Intermediate.** One credit.
- 2180 Beginning Jazz Dance.** One credit.
- 2190 Beginning Tap Dance.** One credit.
- 2200 Modern Gymnastics.** One credit.
- 2240 Beginning Roller Skating.** One credit. Fee required.
- 2250 Intermediate Bowling.** One credit. Fee required.
- 2260 Basic Rock Climbing.** One credit.
- 2270 Beginning Volleyball.** One credit.
- 2280 Intermediate Tap Dancing.** One credit.
- 2290 Intermediate Roller Skating.** One credit.
- 2300 Beginning Handball.** One credit.
- 2320 Advanced Weight Training.** One credit.
- 2330 Advanced Karate.** One credit.

- 2340 Aquatic Instructor Certification.** One credit.
- 2350 Intermediate Badminton.** One credit.
- 2360 Intermediate Wrestling.** One credit.
- 2380 Intermediate Jazz Dance.** One credit.
- 2400 Intermediate Handball.** One credit.
- 2410 Beginning Softball.** One credit.
- 2420 Intermediate Golf.** One credit.
- 2430 Advanced Volleyball.** One credit.
- 2440 Advanced Swimming.** One credit.
- 2450 Advanced Tennis.** One credit.
- 3250 Workshops and Instructional Methods in Health Education.** Three credits. (Same as HLTH 3250.) Preparation for conducting workshops in a variety of professional settings.
- 3300 First Aid and Safety Education.** Three credits. (Same as HLTH 3300.) Deals with first aid measures, accident prevention, and cardiopulmonary resuscitation. Addresses issues related to drug use/abuse and related acts of violence. Satisfactory completion of the course qualifies the student for American Red Cross Standard and CPR certificates.
- 3430 Skill Themes: Games, Gymnastics, Rhythms.** Two credits. Fundamental areas of educational gymnastics, educational games, and educational/creative dance/rhythms. How movement education relates to an individual child's personal development—intellectually, emotionally, socially, and physically. Activities suitable for the needs, abilities, and interests of children and developmentally appropriate practices.
- 3500 Physical Education for Early Childhood.** Four credits. Principles, teaching strategies, and curriculum activities for young children. Planning age-appropriate physical activities and designing developmentally appropriate motor skill experiences for young children. Extensive practicum experiences in teaching. Two one-hour lectures and two one-hour labs per week.
- 3720 Fitness Education K–12.** Three credits. Planning, teaching, and participating in individual and group fitness programs for K–12. Offers preparation to administer and interpret assessment of related components with the understanding of physiological principles related to exercise in the K–12 student. Major lifetime wellness activities covered.
- 3730 Skills and Techniques of Teaching Tumbling, Stunts, and Gymnastics.** Three credits. Objectives, materials, and techniques for teaching tumbling and gymnastics. Laboratory and field experiences required.
- 3740 Skills and Techniques of Teaching Individual and Dual Sports.** Three credits. Knowledge of skills, methods, and materials necessary for teaching activities—archery, badminton, golf, tennis, and bowling—which will contribute to lifetime wellness. Laboratory and field experiences required.
- 3750 Skills and Techniques of Teaching Team Games.** Three credits. Skills, methods, and concepts in basketball, soccer, volleyball, softball, and team handball that would allow participants to engage in physical fitness activities into middle adult years. Laboratory and field experiences required.
- 3760 Water Safety Instructor.** Three credits. Prerequisite: Permission of instructor. Designed to teach students how to be water safety instructors according to the guidelines issues by the American Red Cross. Provides knowledge and skills needed to teach the Red Cross Swimming and Water Safety Program in a logical progression for aquatic skill development and to be certified as an American Red Cross Water Safety Instructor.
- 3800 Teaching Physical Education.** Three credits. Opportunity to observe the art of teaching and the act of learning in physical education and health classes at the elementary, middle, and high school levels. Students will use observation tools in public school settings designed to help them recognize the varied responsibilities and skills needed in teaching physical education.
- 3810 Directing Intramurals.** Two credits. The organization and administration of intramural programs. The student experiences actual participation in developing and supervising intramural activities.
- 3850 Foundations of Physical Education.** Three credits. Lectures, discussion, and reports introduce students to the importance of physical activity and nutritional values as they relate to lifetime wellness. Study of physical education through its history, philosophy, leadership, and organization including related principles from biology, physiology, sociology, and psychology.
- 3900 Adapted Physical Education.** Three credits. For physical education teacher candidates interested in improving the quality of physical education programs for students with disabilities. Includes best practices and approaches to planning and implementing physical education instruction for the inclusion of children and adults with disabilities in the educational, recreational, and physical fitness process and placement in the least restrictive environments and community programs. Addresses the unique needs of future physical education teachers.
- 3910 Officiating.** Two credits. Technique and practice in officiating major sports.
- 3930 Concepts and Tactics of Teaching Games.** Three credits. Introduces the tactical approach to teaching games in physical education. Striking, fielding, and target games emphasized.
- 4250 Internship.** Twelve credits. Prerequisites: PHED 3250, 4240, 4810, 4830, 4910; HLTH 3300; BIOL 2030/2031; NFS 1240. On-site practical experience in an exercise science/health promotion program.
- 4290 Corrective Therapy—Clinical Training Program.** Nine credits. Provides trainee-students clinical training in a paramedical specialty in order to treat illness and injury. Program is affiliated with the Veterans Administration Hospital, Murfreesboro.
- 4340 Fitness Education for the Adult.** Three credits. (Same as HLTH/REC 4340.) Planning, teaching, and participating in individual and group fitness programs for the adult. Offers preparation for administering and interpreting assessments of related components with understanding of physiological principles related to exercise in the adult. Major lifetime wellness activities covered.
- 4400 Motor Behavior.** Three credits. Processes related to the learning, control, and coordination of movement. Principles in motor learning, motor development, and motor control addressed in relation to movement and skill acquisition. Examines the major behavioral and control processes underlying the learning and performance of motor skills.
- 4470 Educational Rhythms for Teachers.** Three credits. Educational rhythms for teaching physical education. Rhythmic skills, pro-

gressive movement, and creative physical activities explored and utilized for the student's understanding of educational rhythms. Explores educational rhythms as an academic discipline as well as an art form and as a lifelong social/recreational activity.

4600 Technology Applications. One credit. Prerequisite: An introductory course in computer literacy or equivalent with instructor permission; corequisite: PHED 4601. Understanding and competency using a variety of technology applications related to the profession. Students required to enroll in corresponding lab during the same semester.

4601 Technology Applications Lab. Two credits. Corequisite: PHED 4600. Investigation and application of profession-specific software and hardware applications.

4700 Skills and Techniques of Teaching Rhythmic Activities. Three credits. Skills in various dance forms, methods and materials, evaluative procedures, experiences in teaching all forms of dance to students at the K-12 level. Lab required.

4710 Authentic Assessment in Teaching Physical Education. Three credits. Authentic assessment techniques used in teaching physical education. Matching appropriate assessment to different types of assessment instruments and to the objectives of the physical education curriculum. Computer applications related to assessment in physical education used.

4780 Curriculum in Physical Education. Three credits. For physical education teacher candidates interested in improving the quality of physical education programs for students with and without disabilities. Reviews best practices and approaches to planning and implementing instruction, as well as the curriculum models of physical education. Addresses unique needs of future physical education teachers.

4800 Elementary Physical Education Teaching Methods. Three credits. Prerequisite: Admission to teacher education program. Planning, implementing, and evaluating the teaching-learning process at the elementary school level. Requires field experience in teaching physical education at an area elementary school.

4801 Teaching Elementary Physical Education Practicum. One credit. Practicum experiences in teaching physical education to children with special emphasis on lesson planning, management, assessment, task presentation, and content development.

4900 Secondary Physical Education Teaching Methods. Three credits. Prerequisite: Admission to teacher education. Opportunity to observe the art of teaching and the act of learning in physical education classes at the secondary level. Advanced study and practice of effective teaching and learning theory in secondary physical education related to classroom, gymnasium, and field situations.

4901 Teaching Secondary Physical Education Practicum. One credit. Practicum experiences in teaching physical education to middle and high school learners with special emphasis on lesson planning, management, assessment, task presentation, and content development.

4910 Applied Kinesiology and Biomechanics. Three credits. Study of the analysis of human movement based on the anatomical, physiological, and mechanical principles of human activities. Laboratory experiences included.

4920 Independent Study. One, two, or three credits. (Same as ATHT/EXSC/HLTH/REC 4920.) Independent study topics based on a study plan prepared in cooperation with a faculty supervisor.

Culminates in a formal paper and/or comprehensive examination. Application forms must be completed and approved prior to enrollment. A maximum of three credit hours may be applied toward degree.

4930 Concepts and Tactics of Teaching Territory Games. Three credits. Games and skills associated with a variety of territory games. Includes basketball, soccer, flag football, lacrosse, field hockey, etc. Emphasis on planning and applying developmentally appropriate activities for all learners.

4940 Concepts and Tactics of Teaching Net/Wall Games. Three credits. Games and skills associated with a variety of net/wall games, including volleyball, tennis, badminton, table tennis, racquetball, etc. Emphasis placed on planning and applying developmentally appropriate activities for all learners.

4990 Seminar in Teaching Physical Education. Three credits. Prerequisites: PHED 3800 and 3900. A comprehensive review of the organization and management of physical education, presenting students with skills and strategies for becoming effective beginning teachers and administrators. Crucial issues and trends affecting the fields of physical education and sport discussed, including issues of advocacy, legal liability, alternative teaching strategies, ethics and professionalism, diversity, classroom management, and career planning.

Philosophy [PHIL]

1030 Introduction to Philosophy. Three credits. Basic philosophical problems suggested by everyday experience integrated into a coherent philosophy of life through comparison with solutions offered by prominent philosophers.

2110 Elementary Logic and Critical Thinking. Three credits. Principles of deductive and inductive reasoning, problem solving, and the analysis of arguments in everyday language.

3150 Ethics. Three credits. Major ethical theories, the moral nature of human beings, the meaning of good and right.

3200 Asian Thought. Three credits. The origins, development, essence, and implications of leading philosophical-religious traditions originating in Asia.

3300 Philosophy of Religion. Three credits. Examines issues of religious experience, religious knowledge, faith and reason, the existence and nature of God, evil, religious diversity, life after death.

3400 Symbolic Logic. Three credits. (Same as MATH 3400.)

3500 Philosophy and the African American Experience. Three credits. Examines sociopolitical and existential concerns of African Americans, especially in respect to issues of justice, equality, and the very meaning of life in a world of anti-black racism, against the backdrop of "enlightenment" philosophical discourse on race and personhood.

3600 Philosophy and Film. Three credits. Examination of the cinematic expression of philosophical issues and development of philosophical issues in cinema.

3690 Social Philosophy. Three credits. The main problems of social philosophy are surveyed: the distinctive nature of social reality and the nature of social knowledge and how they relate to value theory.

- 4010 History of Ancient and Medieval Philosophy.** Three credits. Prerequisite: PHIL 1030 or permission of instructor. The development of philosophical thought from Thales to Occam.
- 4020 History of Modern Philosophy.** Three credits. The development of philosophical thought from Hobbes to Hegel.
- 4050 Nineteenth-Century Philosophy.** Three credits. Emphasis on movements such as German idealism, the rise of the philosophy of the social sciences, historical materialism, utilitarianism, and early critiques of modernism.
- 4100 Aesthetics.** Three credits. The nature of art, aesthetic experience, and artistic creation.
- 4150 Formal Logic.** Three credits. The nature and methods of formal deductive logic, truth functional logic, quantification theory, identity relations, propositional calculus.
- 4200 Existentialism.** Three credits. The nature, significance, and application of the teachings of several outstanding existential thinkers.
- 4240 Recent Continental Philosophy.** Three credits. The critical examination of various movements and key figures in recent European philosophy.
- 4300 American Philosophy.** Three credits. Development of American thought with emphasis on naturalism, idealism, and pragmatism.
- 4350 Philosophy of Language.** Three credits. Prerequisite: PHIL 2110 recommended. Introduces students to the most influential analyses of meaning, reference, and truth of early twentieth-century Anglo-American philosophy; explores how the work of Ludwig Wittgenstein transforms canonical accounts of language; considers the role of metaphor in human communication and understanding.
- 4400 Analytic Philosophy.** Three credits. Examines twentieth-century analytic movement including logical atomism, logical positivism, indeterminacy semantics, ordinary language philosophy.
- 4450 Marx and Marxism.** Three credits. An examination of the development of Marxist philosophy up to and including the present.
- 4500 Philosophy of Science.** Three credits. The methods, problems, and presuppositions of scientific inquiry.
- 4550 Philosophy of Mind.** Three credits. Classical philosophy of mind (emphases: the mind-body problem, theories of consciousness) and contemporary applications of philosophy to psychology (emphases: logic and cognition, emotion and reason, artificial intelligence).
- 4560 Philosophy of Music.** Three credits. Examines issues in both traditional philosophies of music and contemporary philosophies of music making and musical perception.
- 4600 Philosophy of History.** Three credits. Nature of historical knowledge and problems of historical inquiry; meaning and value of history; reality of the past; historical determinism and human freedom.
- 4800 Readings in Philosophy.** Three credits. Prerequisite: Permission of instructor. Directed study concerning a particular philosophical problem or thinker.

Physical Science (General) [PSCI]

- 1030 Topics in Physical Science.** Four credits. Corequisite: PSCI 1031. Language, development, structure, and role of physical science (physics, chemistry, astronomy, and geology) as it relates to the knowledge and activities of the educated person. For nonscience majors. Three hours lecture and one two-hour laboratory. **(A General Education course [Nat Sci]. Does not count toward any major or minor.)**
- 1031 Topics in Physical Science Lab.** Zero credits. Corequisite: PSCI 1030.
- 3890 Physical Science Instruction Internship.** One credit. Prerequisite: Successful completion of the target course (PSCI 1030/1031) or one semester of chemistry and one semester of physics and permission of instructor. Opportunity to refine thinking, communication, and interpersonal skills through exposure to on-the-spot technical questions and a laboratory teaching experience as an assistant in an introductory physical science laboratory. Course credits will not count toward a major or minor in Chemistry or General Science. May be repeated for up to three credits.
- 4030 Experimental Physical Science.** Four credits. Prerequisite: PSCI 1030/1031. Basic concepts, laws, and principles of astronomy, chemistry, geology, and physics with particular emphasis on the utilization of equipment available or easily improvised in actual school situations to illustrate these concepts, laws, and principles.
- 4080 Problems in Physical Science.** Four credits. Prerequisite: Consent of instructor. A problem from chemistry, physics, or other physical science appropriate to the student's background and interest. A formal written report must be submitted and approved by the instructor to receive credit for this course.

Physics [PHYS]

- 1110 Discovering Physics.** Four credits. Prerequisite: MATH 1710, 1730, or 1630. Uncovers the fundamental concepts of physics in a hands-on approach that involves observations, measurements, forming hypotheses, and validation of ideas in groups of students' peers. Combined lecture/laboratory sessions.
- 1130 Contemporary Issues in Science.** Zero credits. (Same as CHEM 1130.) Corequisite: PHYS 1131. Lecture emphasizing the application of basic concepts in science to topics of contemporary interest to the general citizenry. Covers basic science related to selected topics. Specific topics will vary.
- 1131 Activities for Contemporary Issues in Science.** Four credits. (Same as CHEM 1131.) Corequisite: PHYS 1130. Laboratory emphasizing the application of basic concepts in science to topics of contemporary interest to the general citizenry. Includes laboratory activities, group-oriented problem-solving using computers, and class discussion of selected contemporary issues in science. Two two-hour laboratory sessions.
- 1600 Physics of Music.** Three credits. Prerequisite: MATH 1710 or consent of instructor. The physics of music, acoustics, and sound for students without prior physics background.
- 2010 Non-Calculus-Based Physics I.** Zero credit. Prerequisite: MATH 1710 or 1730. Required corequisite: PHYS 2011. Web-based discussion class to be taken in conjunction with cooperative-learning based problems lab PHYS 2011. Classical mechanics traditionally covered in a first-semester college physics course. Kinematics, forces, momentum, angular motion, calorimetry, and sound waves. Class time used for discussion of the Web-lecture material and for the administration of exams.

- 2011 Physics Problems Laboratory I.** Four credits. Prerequisite: MATH 1710 or 1730. Required corequisite: PHYS 2010. Group-oriented problems course taken in conjunction with the Web-based discussion class PHYS 2010. Students work in groups with the topics presented in the PHYS 2010 discussion class. Covers kinematics, forces, momentum, angular motion, calorimetry, and sound waves. Skills associated with the development of experimental investigations including graphical analysis and estimation of uncertainties emphasized. Two two-and-one-half-hour laboratory sessions.
- 2020 Non-Calculus-Based Physics II.** Zero credit. Prerequisites: PHYS 2011. Required corequisite: PHYS 2021. Web-based discussion class taken in conjunction with the cooperative-learning based problems lab PHYS 2021. Fundamentals of optics, modern physics, and electronics traditionally covered in a second-semester college physics course. Reflection and refraction, vision, diffraction effects, quantum mechanics, atomic and nuclear physics, and analog and digital electronics. Scheduled class time is used for discussions of the Web-lecture material and for the administration of exams.
- 2021 Physics Problems Laboratory II.** Four credits. Prerequisites: PHYS 2011. Required corequisite: PHYS 2020. Group-oriented problems course to be taken in conjunction with the Web-based discussion class PHYS 2020. Students work in groups with the topics presented and in the PHYS 2020 discussion class. Optics, modern physics, and electronics traditionally covered in a second-semester college physics course. Reflection and refraction, vision, diffraction effects, quantum mechanics, atomic and nuclear physics, and analog and digital electronics. The skills associated with the development of experimental investigations including graphical analysis and estimation of uncertainties emphasized. Two two-and-one-half-hour laboratory sessions.
- 2110 Calculus-Based Physics I.** Three credits. Prerequisite: MATH 1910. Corequisite: PHYS 2111. A calculus-based introduction to mechanics and wave motion.
- 2111 University Physics Laboratory I.** One credit. Prerequisite: MATH 1910. Corequisite: PHYS 2110. Laboratory course to accompany PHYS 2110. Experiments in mechanics, waves, and thermodynamics. Data reduction, error analysis, and report writing. One three-hour laboratory.
- 2120 Calculus-Based Physics II.** Three credits. Prerequisites: PHYS 2110; MATH 1920. Corequisite: PHYS 2121. A continuation of PHYS 2110. Electricity, magnetism, circuit analysis, and optics.
- 2121 University Physics Laboratory II.** One credit. Prerequisites: PHYS 2110 and 2111. Corequisite: PHYS 2120. Laboratory course to accompany PHYS 2120. A continuation of PHYS 2111. Experiments in electricity, magnetism, optics, and modern physics. Data reduction, error analysis, and report writing. One three-hour laboratory.
- 3000 Acoustics and Signal Analysis.** Three credits. Prerequisites: PHYS 1600 and MATH 1910. Detailed overview of acoustics including an introduction to digital signals and their analysis. Application areas include architectural, musical, and environmental acoustics. Intended for students interested in the technical side of the music industry.
- 3050 Directed Study in Physics.** One to four credits. Prerequisites: PHYS 2021 or 2120 and approval of department chair. Individualized intensive study of a specific topic in physics not normally covered to the extent desired in the standard curriculum. Arrangements must be made with an approved faculty member prior to registration.
- 3070 Concepts in Modern Physics I.** Three credits. Prerequisites: PHYS 2021 or 2120 and MATH 1920. Introduction to the concepts of twentieth-century physics. Discusses fundamental concepts of modern physics including relativity, atomic physics, wave optics, and quantum mechanics. Not intended to prepare students for graduate school in physics.
- 3080 Concepts in Modern Physics II.** Three credits. Prerequisite: PHYS 3070 or 3100. Introduction to the concepts of twentieth-century physics. Discusses the fundamental concepts of modern physics including molecular physics, statistical distributions, solid state physics, and nuclear particle physics. Not intended to prepare students for graduate school in physics.
- 3100 Modern Physics I.** Three credits. Prerequisites: PHYS 2021 or 2120 and MATH 1920. Introduction to the fundamental principles of modern physics (special relativity and quantum mechanics) and their application to atomic physics.
- 3110 Modern Physics II.** Three credits. Prerequisite: PHYS 3100. Survey of major topics including molecular physics, statistical physics, solid state physics and solid state devices, nuclear models, nuclear decay and reaction, and elementary particle physics.
- 3111 Modern Physics Laboratory.** One credit. Prerequisite or corequisite: PHYS 3110. Concepts and ideas which formed the basis for an understanding of the atom and atomic phenomena. One three-hour laboratory.
- 3150 Topics and Methods of Theoretical Physics I.** Three credits. Prerequisites: PHYS 2021 or 2120 and MATH 1920. Theoretical techniques used for problem solving in physics. Reference frames and coordinate systems, approximation techniques, solution of electrical circuits and mechanical systems, simple harmonic motion and wave motion, Maxwell's equations.
- 3160 Topics and Methods of Theoretical Physics II.** Three credits. Prerequisite: PHYS 3150. A continuation of PHYS 3150. The Schrodinger equation, heat flow, diffusion, the Lagrangian description of motion.
- 3200 Scientific Modeling and Problem Solving.** One credit. Prerequisites: One year of physics and MATH 1920 or consent of instructor. Techniques of computational physics as applied to the solution of scientific problems.
- 3300 Classical Mechanics.** Three credits. Prerequisite: PHYS 3150 (or PHYS 2110 and MATH 3120). Mechanics (including statics and dynamics) of particles in three dimensions using vector analysis, motion of rigid bodies, Lagrangian mechanics, and Hamilton's equations.
- 3310 Concepts and Applications of Digital Electronics.** Three credits. Prerequisite: PHYS 2021 or 2121 or ET 3610. Investigates applications of modern digital technology. Fundamentals of logic gates and programmable devices examined along with contemporary integrated circuits for use in data acquisition and the control of scientific experiments. Sound cards, alarm systems, and laboratory measurement circuits typify projects constructed in the hands-on laboratory. Two hours lecture and one three-hour laboratory.
- 3330 Health Physics and Radiation Protection.** Three credits. Prerequisites: PHYS 2021 or 2120. Radiation protection methods, dosimetry techniques, and survey instruments. Practical knowledge of the methodology for paramedical personnel, industrial workers, and others who deal with radioisotopes and X-ray equipment. Two hours lecture and one three-hour laboratory.
- 3340 Semiconductor Device Physics.** Three credits. Prerequisites: One year physics and MATH 1910. Operation principles of diodes, transistors, and photonic devices. Fundamental band structure investigated to learn how important performance characteristics

are related to physical principles. Modern designs include JFET, Bipolar, MOSFET, MODFET, and HEMT transistors.

- 3350 Concepts and Applications of Analog Electronics.** Four credits. Prerequisite: PHYS 2021 or 2121 or ET 3610. Introduction to contemporary analog electronics utilizing integrated circuits to treat traditional circuits, power supplies, operational amplifiers, comparators, and multivibrators. Conversion of analog to digital signal for interfacing to microcomputers. Emphasis on practical applications. Three hours lecture and one three-hour laboratory.
- 3500 Lasers and Fiber Optics.** Three credits. Prerequisites: One year physics and MATH 1910. Operation of fiber optic communication systems; how semiconductor lasers, modulators, and photodetectors work and how they are used in modern communication systems. Hands-on demonstrations and class projects will use lasers and optical components to illustrate basic principles.
- 3510 Concepts in Thermodynamics and Statistical Mechanics.** Three credits. Prerequisite: PHYS 3080 or 3110. Introduction to the concepts of thermodynamics and statistical mechanics. Discusses the fundamentals of thermodynamics from both the macroscopic and microscopic points of view including entropy, enthalpy, heat engines, Helmholtz and Gibbs free energy, the partition function, and quantum statistics. Not intended to prepare students for graduate school in physics.
- 3600 Radiation Oncology Physics.** Three credits. Prerequisites: MATH 1910 and a one-year introductory sequence in physics. Introduction to the field of radiation oncology physics, including a discussion of the fundamental physics and techniques associated with the diagnosis and treatment of cancer using electromagnetic radiation and particle beams. Includes experiences in a radiation oncology clinic and interactions with practicing medical physicists.
- 3601 Medical Physics Practicum.** One credit. Prerequisite or co-requisite: PHYS 3600. Real-world/clinical applications of concepts and theory from PHYS 3600, especially those associated with detectors and dosimetry. May include hands-on activities at the Vanderbilt-Ingram Cancer Center.
- 3610 Thermodynamics.** Three credits. Prerequisite: PHYS 3110 and 3150 or consent of instructor. Introduction to statistical physics, kinetic theory, and thermodynamics from a unified microscopic point of view. Selected applications to various systems of interest presented.
- 3800 Physics Seminar.** One credit. Prerequisite: PHYS 3100. Develops and refines inquiry, communication, and presentation skills through exposure to new developments in physics, technical brief writing, and resume and job interview preparations.
- 3900 Physics Practicum.** One credit. Prerequisites: PHYS 3100 and consent of instructor. Refines thinking, communication, and interpersonal skills through exposure to on-the-spot technical questions and a laboratory teaching experience as an assistant in an introductory physics laboratory.
- 3910, 3920 Advanced Physics Laboratory.** One credit each. Prerequisites: PHYS 2021 or 2120 and 2121. The skills, art, and physics important in pursuing independent research. Experiments dealing with mechanical, optical, or thermodynamical principles explored. Report writing, literature research, and the use of analysis tools emphasized.
- 4310 Electricity and Magnetism.** Three credits. Prerequisite: PHYS 3160. Topics including electric and magnetic fields, electrostatic potential, and potential energy and fields in matter, discussed in a mathematically rigorous manner. A variety of good applications of mathematical methods in physics.
- 4330 Electricity and Magnetism II.** Three credits. Prerequisite: PHYS 4310. Topics include theory of electromagnetic radiation, production and propagation of electromagnetic waves, and the solution of boundary-value problems with applications to optics, wave guides, and lasers.
- 4380 Introduction to Quantum Mechanics.** Three credits. Prerequisites: PHYS 3110 and 3160. Topics include both one- and three-dimensional solutions to the Schrodinger equation, including the infinite square-well, finite square-well, tunneling, the harmonic oscillator, and the hydrogen atom with a discussion of angular momentum at a mathematically rigorous undergraduate level.
- 4600 Topics in Medical Physics.** Three credits. Prerequisites: PHYS 3110 and 3160. Topics in medical physics at an advanced undergraduate level. Possible topics include charged-particle interactions and equilibrium in matter, cavity theory, dosimetry, CTs, and MRIs.
- 4630 Principles of the Solid State.** Three credits. Prerequisites: PHYS 3110 and 3150. Includes crystal structures, lattice dynamics, statistics of conductors and semiconductors, thermal properties, the metallic state, free electron theory, band theory of solids, dielectric and magnetic properties of solids, and the low temperature behavior of matter, particularly solids. Three hours lecture.
- 4800- Special Topics in Physics.** Three credits each. Prerequisites: An extensive physics background and permission of instructor. Detailed study of a selected topic of current interest in physics not normally covered in the regular undergraduate physics curriculum. Possible topics include advanced atomic physics, high-energy physics (nuclear and elementary particles), scattering theory, astrophysics, and general relativity.
- 4800 Special Topics A**
4810 Special Topics B
- 4850- Physics Research.** Two credits each. Prerequisite: Consent of instructor. Independent study of a selected research problem in physics. Includes experimental and/or theoretical investigation of an important, yet unexplored, problem. Includes literature research, experiment design/problem formulation and execution, resulting in oral and written presentation of results suitable for submission for publication in a suitable journal.
- 4900 Physics Senior Thesis.** Two credits. Prerequisites: PHYS 4850 and consent of department chair. Brings undergraduate experience to focus on a specific research problem; chosen with the consent of the thesis committee and with the potential for original discovery or for creative development of a tool or technique applicable to scientific research. Independent pursuit of research objectives outlined in a research proposal results in a written thesis whose approval will include an oral defense.

Political Science [PS]

Courses marked with an asterisk () are offered infrequently.*

- 1010 Foundations of Government.** Three credits. **Meets part of the General Education Social/Behavioral Sciences requirement.** Comparative theories and institutions of government. Law, constitutions, power, political socialization, ideologies, and the media.
- 2010 American Government and Politics.** Three credits. Constitutional principles, functions, and administration of American federal government; Congress, the presidency, and the Supreme Court. **A General Education Social/Behavioral Sciences course.**
- 2020 State and Local Government.** Three credits. Prerequisite: PS 2010. Politics and administration at the state and local level. Legislative, judicial, and administrative structures and processes; major issues and problems.

- 2100 Legal Courtroom Procedure.** One credit. For students interested in developing trial advocacy skills; practical course offering preparation for mock trial competition. May be repeated for up to four hours credit. Pass/Fail.
- 2105 Introduction to Latin American Studies.** Three credits. (Same as SPAN 2105, SOC 2105, ART 2105, ANTH 2105, GEOG 2105.) A multidisciplinary, team-taught introduction to Latin America. Covers the cultures and societies of the region: pre-history, history, geography, politics, art, languages, and literatures. Required course for all Latin American Studies minors.
- 2120 Mediation Procedure.** One credit. Prerequisite: PS 2440 or permission of department chair. For students interested in developing skills as mediators and advocates in mediation settings. Practical application of theories, methods, and ethical components of mediation. Participation in intercollegiate mediation competition. May be repeated for up to four hours of credit. Pass/Fail.
- 2130 Model United Nations/Crisis Simulation.** One credit. For students interested in developing skills in negotiation and conflict resolution involving international issues. A practical application of negotiating skills, policy process, and understanding of international conflicts and problems through participation in intercollegiate MUN/crisis simulation competition. Course may be repeated for up to 4 hours of credit. Pass/Fail.
- 2440 Law and the Legal System.** Three credits. Prerequisite: PS 2010. A general introduction to American law and the American legal system; focus on the case system.
- 3010 Women and the Law.** Three credits. Prerequisite: PS 1010 or 2010 or permission of the department chair. Analysis of the legal treatment of women in the home, school, and workplace. Examines development of law, relationship of law to political movements, and current state of law and legal theory on women's rights and gender equality.
- 3050 The U.S. Presidency.** Three credits. Prerequisite: PS 1010 or permission of instructor. A comprehensive analysis of the presidency; includes origins of the presidency, political power, the nature of the institutionalized presidency, campaigns and elections, and a careful look at selected presidents.
- 3060 The U.S. Congress.** Three credits. Prerequisite: PS 2010. An analysis of the United States Congress; its origins, political power, the nature of the institutionalized Congress, campaigns, and elections.
- 3100 Politics and Film.** Three credits. Prerequisite: PS 1010 or 2010 or permission of instructor. Analysis of political ideas as expressed in motion pictures. Topics include leadership, political biographies, campaigns and elections, ideology, and war.
- 3160 American Public Policy.** Three credits. Prerequisite: PS 1010 or 2010. Examines the public policy-making process in the United States, the stages of policy development and the problems inherent in policymaking. At least one substantive policy area examined in depth; examples: health care, environmental, welfare, agricultural, poverty, or budgetary policies.
- 3170 Civil Rights Policy and Politics.** Three credits. Assesses the institutional impact—past and present—of the civil rights movement on American political institutions (the presidency, Congress, the courts, the executive cabinets, the administrative regulatory agencies, and the U.S. Commission on Civil Rights). Events and topics include the 1964 Civil Rights Act, the Voting Rights Act of 1965, the 1991 Civil Rights Act, voter dilution, felony disenfranchisement and sentencing disparities, campaign finance reform, affirmative action, disability rights, gender discrimination, and majority-minority congressional districts.
- 3200 British Government and Films.** Three credits. Prerequisite: PS 1010 or 2010 or permission of instructor. The evolution of parliamentary government in the United Kingdom and its current distinctive characteristics, processes, and functions in contrast to other parliamentary regimes.
- 3210 International Relations.** Three credits. Prerequisite: PS 1010. The state system and national power, balance of power, balance of terror, game theory, psychological aspects of international conflict, decision making, diplomacy and negotiation, war, disarmament, and collective security.
- 3220 International and Comparative Politics in Theory and Practice.** Three credits. Prerequisites: PS 1010 and 3210. A reading and discussion seminar; theoretical approaches to studying international relations and comparative politics. Offers preparation for upper-division international relations and comparative politics courses; helps in choice of career goals.
- 3250 Public Administration.** Three credits. Prerequisite: PS 1010 or 2010. Fundamentals of public management—organization theory, leadership, policy making, planning, budgeting, personnel, administrative law, bureaucratic behavior.
- 3260 Applied Public Administration.** Three credits. Prerequisite: PS 3250 or permission of instructor. Emphasizes selected issues, agencies, and problems. Normally entails the application of administrative concepts to administrative problems and learning by doing.
- 3320 Public Opinion.** Three credits. Prerequisite: PS 1010 or 2010. The nature of public opinion and its role in the political and social process. How opinion is shaped, created, and measured.
- 3330 Political Parties.** Three credits. Prerequisite: PS 1010 or 2010. The nature of democracy, politics, and political parties; party organization and role in government; campaigning; primaries, conventions, general elections; the Electoral College; voting behavior and pressure groups.
- 3340 Political Campaign Management.** Three credits. Prerequisite: PS 1010 or 2010 or permission of instructor. An analysis of applied politics; how to plan and manage a modern political campaign. Readings, discussions, and hands-on projects; students will learn the strategies, tactics, and varied techniques of political campaigning.
- 3350 Interest Groups and Social Change.** Three credits. Prerequisite: Upper-level standing required. Examines role of interest groups in American politics and the policymaking process, including the role of lobbyists, money, and politics, and case studies of several specific interest groups.
- 3370 American Constitutional Law.** Three credits. Prerequisite: PS 2010; PS 2440 recommended. Analysis of theories of judicial decision making as well as the establishment of judicial review itself, followed by case studies of major Supreme Court decisions in federalism. Issues covered include commerce, contracts, police, and war powers as well as restrictions placed on state governments after the ratification of the Civil War Amendments.
- 3380 American Constitutional Law.** Three credits. Prerequisite: PS 3370. The Supreme Court as a policy-making body in the governmental system. Focuses on case studies of major Supreme Court decisions dealing with civil liberties. Issues covered include racial and gender discrimination, freedom of speech and religion, as well as rights of the criminally accused and the right to privacy.

- 3400 Municipal Government.** Three credits. Prerequisite: PS 1010 or 2010. Powers, functions, and politics of municipal governments from the standpoint of city management. Attention is given to problems related to the execution of municipal policy.*
- 3420 African American Politics.** Three credits. Prerequisite: PS 2010 or permission of instructor. The unique history, content, and form of African American political participation; examines the nature of consequences of African American influence within, or exclusion from, the workings of various American political institutions; the nature and types of issues that influence contemporary discussions in American and African American politics related to the socioeconomic conditions of African Americans. Students who have taken PS 4390 Special Topics (Black Politics in America) may not take PS 3420 for credit.
- 3440 Governmental Budgeting and Finance Administration.** Three credits. Prerequisite: PS 1010 or 2010; PS 3250 recommended. Analysis of the legal and social nature of government budgets emphasizing the procedures and administrative methods of fiscal control. Budget documents at state and local levels.*
- 3490 Alternative Dispute Resolution.** Three credits. Prerequisite: PS 2440 or permission of the department chair. Theory, methods, and ethical components of alternative dispute resolution (ADR); emphasis on various forms of mediation, but including other ADR formats such as arbitration, negotiation, and summary jury trial.
- 3500 International Law.** Three credits. Prerequisite: PS 1010 or 2010. General principles of modern international law taught by the case study method in a seminar format encouraging debate and discussion. Issues concerning the development of international law and human rights will be studied.
- 3510 International Political Economy.** Three credits. Prerequisites: PS 1010 and 3210 or permission of instructor. The relation between politics and economics in international affairs and its implications for global peace, security, ecology, and social welfare.
- 3530 Legal Writing and Research.** Three credits. Prerequisite: Junior status. A specialized composition course for the student planning to attend law school or paralegal school or to become a legal secretary. Practice in legal research, documentation, and a variety of legal problems.
- 3780 Study Abroad.** Three or six credits. Prerequisite: PS 1010 or permission of instructor. Supervised study in a foreign country; familiarizes students with foreign cultures and political systems. Three to six hour classes may be repeated once if country of destination varies. No more than 6 hours may count toward a political science major. Pass/Fail.
- 3790 Eastern European Politics.** Three credits. Prerequisite: PS 1010. Comparative study of Eastern Europe states and societies. Emphasis on post-Communist transition, democratization, and interethnic relations.
- 3910 International Organization.** Three credits. Prerequisite: PS 1010; PS 3210 recommended. Development and prospects of the United Nations Organization and its major approaches to peace—pacific settlement, collective security, international law, arms control, trusteeship, preventive diplomacy, international conferences, functionalism.*
- 4000 Quantitative Methods of Research.** Three credits. Prerequisite: 9 hours of political science. Fundamentals of quantitative methods in empirical research problems in the social sciences.
- 4020 Political Science Laboratory.** Three credits. Prerequisite: PS 4000 or permission of instructor. Studies of a research, statistical, data processing, or simulation nature as related to political and social questions.
- 4030 Human Rights.** Three credits. Prerequisite: PS 1010. Fosters critical thinking about human rights by developing skills in weighing powerful but opposing arguments in complex moral situations. Familiarizes students with the role of both national and international organizations in global politics.
- 4040 Pre-Law Internship.** Three credits. Prerequisites: Senior standing, competitive selection, PS 2440, or by permission of instructor. Familiarizes pre-law students with general law office procedures and an active law environment.
- 4050 Introduction to City and Regional Planning.** Three credits. Prerequisite: PS 1010 or 2010; PS 2020 recommended. Analysis of the basis of particular forms in urban settlements and regions; introduction to planning history, theory, methods, processes, and current trends.
- 4070 Political Violence and Terrorism.** Three credits. Prerequisite: PS 1010 or permission of instructor. Examines political violence, including assassination, terror, repression, and genocide, in comparative and international perspectives. Theoretical and case study approaches used to examine forms, goals of, tactics, and responses to political violence.
- 4110 Quantitative Methods of Research.** Three credits. Prerequisite: PS 4000. Intermediate quantitative methods.
- 4120 Tennessee Government.** Three credits. Prerequisite: PS 2010; PS 2020 recommended. Structure, functions, and processes of Tennessee's governmental and political institutions. Policy issues studied.
- 4126 Contemporary Issues in World Affairs.** Three credits. Prerequisite: PS 1010; PS 3210 recommended or permission of instructor. Issue oriented; explores and analyzes the leading issues facing the international community and actions that various actors in world politics have employed to deal with the issues and with what results.
- 4180 African Politics.** Three credits. (Same as AAS 3180.) Prerequisite: PS 1010. Comparative study of selected African political systems with different colonial traditions in the process of rapid change. The ideology and politics of development, political system forms and processes, modernization efforts, and the challenges of nation building.
- 4190 Middle East Politics.** Three credits. Prerequisite: PS 1010. Emphasis on the Palestinian question, the Arab-Israeli wars, the role of the United Nations; conflicts between and among the Arab nations; the various peace initiatives that have been proposed.
- 4200 Problems in Government.** Three credits. Prerequisites: PS 1010 or 2010 and at least 12 hours of PS classes. Work done under the close direction of a professor on a tutorial basis. Student expected to present a sound proposal for departmental consideration and acceptance before enrolling in this course.
- 4210 International Conflict: Causes, Consequences, and Responses.** Three credits. Prerequisite: PS 1010; PS 3210 recommended. Theoretical and empirical approaches to understanding the causes of interstate war, intrastate war, and transnational terrorism as well as the social consequences of and policy responses to international conflict.
- 4220 World Politics.** Three credits. Prerequisite: PS 1010; 3210 recommended. Experiencing contemporary international politics through

the medium of simulation. Particular focus areas include the U.S., F.S.U., People's Republic of China, the Middle East, South Asia, and Southern Africa.

- 4230 Classical Political Theory.** Three credits. Prerequisite: PS 1010 or 2010. Western political theory from the ancient Greeks through the medieval Christians. Includes Sophocles, Aristophanes, Plato, Aristotle, stoicism, skepticism, Lucretius, Augustine, Thomas Aquinas, Thomas More.
- 4240 American Foreign Policy.** Three credits. Prerequisite: PS 1010 or 2010; PS 3210 recommended. Foreign policies in the nuclear age from Kennan and Containment to the present with particular emphasis on contemporary problems and policies.
- 4250 U.S. National Security Policy.** Three credits. Prerequisite: PS 1010 or 2010; PS 3210 recommended. The concept of national security, nature of the U.S. security experience, decision-making process, policymaking process, threats to security, and analysis of specific policy areas such as military and strategic doctrines, force postures, arms control, and budgetary decisions.
- 4260 The Political Status of Women in the World.** Three credits. Prerequisite: PS 1010 or 2010 or WMST 2100. Comparative examination of the political, economic, and social status of women in the United States and abroad. Particular emphasis on women in developing countries, the relationship between economic and political power, and the impact of both conflict and globalization on the status of women.
- 4270 Political Campaign Internship.** One to six credits. Prerequisites: Sophomore standing, PS 2010, and a 2.50 minimum GPA. Students work for a political campaign as an employee under the joint administration of the campaign and the department. Only six hours may count toward a political science major and three hours toward a political science minor. Arrangement for this course must be made in advance. Pass/Fail.
- 4280 The Washington Experience.** Twelve credits. A cooperative program with the Washington Center that provides for student service with a governmental office in Washington, D.C., on a full-time basis during the fall or spring semester. On-the-job training will be supplemented with lectures and other activities. Students selected on a competitive basis. Only six hours count toward a Political Science major or minor.
- 4290 Public Service Internship.** One to twelve credits. Prerequisites: Junior standing and 2.50 minimum GPA. Student assigned to a public service agency as an employee under the joint administration of the agency and the department. Only six hours may count toward a political science major or minor. Arrangement for this course must be made in advance. Pass-Fail course.
- 4300 Comparative European Government.** Three credits. Prerequisite: PS 1010. Comparative analysis of the governmental forms and practices of England, France, Germany, the European community, and others.
- 4310 Comparative Asian Government.** Three credits. Prerequisite: PS 1010. Comparative analysis of the governmental forms and practices of China, Japan, India, and other governments in the region.
- 4360 Legislative Internship.** Twelve credits. A cooperative program with the State of Tennessee that provides for student service with the legislature on a full-time basis during the spring semester. Students selected on a competitive basis. Only six hours may count toward a Political Science major or minor.
- 4390 Special Topics in Political Science.** Three credits. Prerequisite: PS 1010 or 2010 or permission of the instructor. An in-depth study of a special topic significant in contemporary political developments or political science literature. May be taken more than once, as topics change, with up to six credit hours applied to a Political Science major.
- 4410 American Political Economy.** Three credits. Prerequisite: PS 1010 or 2010. Interaction of politics and economics in the United States. Three primary topics: (1) the connection between the American political system and U.S. economic goals and performance; (2) the relationship between the American state and private economic interests in determining American economic and business policies; (3) the politics surrounding the major current economic issues facing America.
- 4590 Administrative Law.** Three credits. Prerequisite: PS 2010; PS 3250 recommended. Procedural aspects, substantive issues, judicial review of the type of law concerned with the powers and procedures of government agencies and the rights of citizens affected by them.
- 4630 Personnel Management.** Three credits. Prerequisite: PS 3250 or permission of instructor. Human resources administration in government agencies. Patterns of position classification, compensation, recruitment, selection, training, performance appraisal, promotion, discipline, separation, collective bargaining.*
- 4690 Comparative Foreign Policies and International Relations of the Middle East.** Three credits. Prerequisite: PS 1010, 3210, 3190 or MES 2100. Examines framework within which to understand Middle East international relations. Includes Arab/Israeli conflict; oil and Middle East international relations; political Islam; the war on terror; and United States, European, Chinese, and Russian policies in the Middle East.
- 4700 American Political Thought.** Three credits. Prerequisite: PS 2010. Major thinkers and movements in American political thought from colonial times to the twentieth century with special emphasis on the thoughts of the framers of the American Constitution and their contemporaries.
- 4770 Russian Politics.** Three credits. Prerequisite: PS 1010. The formation and evolution of the Russian state from the pre-Communist to the Soviet (Communist) and post-Soviet stages of its development. Special attention given to the historical origins and the role of authoritarianism in the Russian political culture and to the ideological foundations, formation, evolution, and the reasons for decline of the Communist system.
- 4800 Senior Seminar.** Three credits. Prerequisites: PS 1010, 2010, and senior standing. A reading and discussion seminar designed to integrate knowledge of the subfields of political science through critical reflection on politics, law, ideology, and culture from both a domestic and global perspective.
- 4900 Latin American Politics.** Three credits. Prerequisite: PS 1010. Emphasis on the comparative analysis of structures, functions, and aspects of Latin American political cultures and systems.
- 4920 Modern Political Theory.** Three credits. Prerequisite: PS 1010 or 2010. Western political theory from the Renaissance to the twentieth century. Includes Machiavelli, Hobbes, Locke, Rousseau, J.S. Mill, Marx and Engels, Kierkegaard, Nietzsche, facism, existentialism, Strauss, Arendt, and contemporary thought.
- 4930 Introduction to Contemporary Political Philosophy.** Three credits. Prerequisite: PS 1010. Aims to foster critical thinking about contemporary political philosophy by introducing students

to four main approaches: Aristotelianism, Utilitarianism, Contractarian Liberalism, and Marxism. Familiarizes students with certain philosophical arguments about important issues in both national and global politics such as multiculturalism, justice, democracy, and freedom.

Courses marked with an asterisk () are offered infrequently.*

Portuguese [PORT]

- 1010 Elementary Portuguese I.** Three credits. Portuguese grammar with readings and oral exercises designed to improve the student's ability to understand the written and spoken language.
- 1020 Elementary Portuguese II.** Three credits. Prerequisite: PORT 1010 or permission of instructor. Continuation of materials introduced in PORT 1010.
- 2010 Intermediate Portuguese I.** Three credits. Prerequisite: PORT 1020 or permission of instructor. A review of Portuguese grammar with readings and oral exercises designed to improve the student's skills and understanding of Brazilian culture.
- 2020 Intermediate Portuguese II.** Three credits. Prerequisite: PORT 2010 or permission of instructor. Continuation of PORT 2010.
- 3010 Advanced Portuguese I.** Three credits. Prerequisite: PORT 2020 or permission of instructor. Advanced-level practice in language skills of listening, speaking, reading, and writing, including review of Portuguese grammar.
- 3020 Advanced Portuguese II.** Three credits. Prerequisite: PORT 3010 or permission of instructor. A continuation of PORT 3010.
- 3070 Brazilian Popular Culture.** Three credits. Provides the necessary context, critical analysis, and perspectives on contemporary culture studies and practices to prepare the student for a better understanding of popular culture in Brazil.
- 3990 Study Abroad.** Three to twelve credits. Designed for students participating in Study Abroad courses for the existing consortium agreements. The credits depend on the number of hours of study in the foreign country (e.g., a four-week, six-week, or semester program).

Professional Seminar [PRSE]

- 4900 Professional Seminar.** One credit. Prerequisites: Sixty credits and consent of instructor. A professional development seminar for students who want to learn about doing research and prepare for graduate school. May be repeated for up to six credits total.

Psychology [PSY]

- 1410 General Psychology.** Three credits. Introductory survey course. Includes biological foundations, perception, principles of learning, intelligence, motivation, emotion, human development, personality, social psychology, behavior disorders, and psychotherapy.
- 1420 Psychology of Adjustment.** Three credits. Processes of human adjustment, adaptation, and environmental influences. Development of self-understanding, constructive management of emotion and stress, and healthy interpersonal relationships.
- 2000 Seminar on Careers in Psychology.** One credit. Prerequisite: PSY 1410. Required for Psychology majors in the first 21 hours of

psychology courses. Requirements needed for success in jobs or graduate school. Interest exploration and development of a career timeline and a resume/vita. Students who choose to complete assessment inventories will pay Testing Services an assessment fee of approximately \$20.

- 2180 Thinking: Intelligence and Creativity.** Three credits. Psychological approaches to the study of information processing, thinking, and knowing, with emphasis on cognitive style, problem solving, and creative thinking.
- 2190 Human Brain, Behavior, and Consciousness.** Three credits. Introduction to the involvement of the brain in behavior and conscious experiences. Altered states of consciousness, mental illness, drug-induced states, sleep, learning, memory, and language. No biology background required.
- 2210 Psychology of Social Behavior.** Three credits. Prerequisite: PSY 1410 recommended but not required. Systematic study of social behavior. Includes interaction between people, perception of others, interpersonal attraction, aggression, altruism, conformity, attitudes, and group behavior.
- 2300 Developmental Psychology.** Three credits. Broad survey of the biological and environmental factors influencing physical, cognitive, and social development from conception until death. Emphasis on current research and theory. Will not substitute for SOC 3150 or CDFS 3340.
- 3020 Basic Statistics for Behavioral Science.** Three credits. Prerequisite: 3 credit hours of college-level mathematics. PSY 3030 may be required. (See online schedule.) Elementary descriptive and inferential statistics and their applications.
- 3030 Laboratory in Psychology.** One credit.
- 3070 Research Methods.** Three credits. Prerequisite: PSY 3020. Corequisite: PSY 3071. Analysis of methodological issues in psychological research. Designed to teach skills in the formulation, execution, interpretation, and presentation of psychological investigations. Three hours lecture and one one-hour laboratory.
- 3071 Research Methods Lab.** One credit. Corequisite: PSY 3070.
- 3230 Abnormal Psychology.** Three credits. Prerequisite: PSY 1410. Patterns of maladaptive behavior, including anxiety, depression, schizophrenia, and antisocial behavior.
- 3240 Abnormal Child Psychology.** Three credits. Prerequisite: PSY 1410. Emotional and behavioral disorders in childhood and adolescence including autism and depression and child maltreatment.
- 3250 Perspectives on Black Psychology.** Three credits. Application of psychological principles to the personality development and behavior patterns of African Americans, in light of cultural heritage and contemporary events. Implications for assessment and counseling.
- 3320 Introduction to Industrial/Organizational Psychology.** Three credits. Application of psychology to business and industry. Topics include employee selection, performance appraisal, training, leadership, motivation, job analysis, legal issues, job satisfaction, work teams, and occupational health.
- 3590 Personality.** Three credits. Historical and contemporary personality theory and research, including the trait, cognitive, and motivational approaches. Topics include personality development, the unconscious, the self, goals, emotions, coping, disorders, and personality change.

- 3750 Introduction to Clinical Psychology.** Three credits. Reviews the historical background, roles, and responsibilities of clinical psychologists and differentiates their duties from other mental health professionals. Introduction to assessment and clinical interventions.
- 3990 Research in Psychology.** One to three credits. Prerequisites: 6 hours of psychology recommended but not required. Supervised research in current topics in psychology. Contact individual faculty members for research possibilities and requirements. May be repeated. (Students majoring in Psychology or the Pre-graduate School concentration may apply up to 6 hours of credit to the major. Students majoring in I/O Psychology may apply up to 4 hours of credit to the major. Students minoring in Psychology may apply up to 6 hours of credit to the minor.)
- 4010 Laboratory in Psychology: Honors.** One credit. May be repeated. Prerequisite: PSY 3020. Supervised laboratory in an area of psychology related to a content course. The laboratory can only be taken during the semester the student is enrolled in the content course.
- 4030 Psychology of Sensation and Perception.** Three credits. Prerequisite: PSY 1410 or permission of instructor. Perceptual and physiological (sensory) mechanisms involved in vision, hearing, taste, smell, and touch. Perceptual consequences of central nervous system events. Historical perspectives.
- 4040 Introduction to Cognitive Psychology.** Three credits. Information processing approach to the study of cognitive processes: attention, perception, memory, language, reasoning, problem solving, and decision making.
- 4050 Applied Psychopharmacology.** Three credits. Reviews current information on the action and uses of the most important groups of psychoactive drugs. Clinical, legal, and ethical aspects.
- 4060 Sport Psychology.** Three credits. Prerequisite: PSY 1410 or consent of instructor. Application of psychological principles, motivational research, and social/psychological findings to the arena of sports. Theory and application of performance enhancement and teamwork in sports. See ATHC 4060.
- 4070 Advanced Statistics for the Behavioral Sciences.** Three credits. Prerequisites: Grade of B- or higher in PSY 3020 or equivalent course. Topics include multiple regression, factorial anova, repeated measures ANOVA, ANCOVA, and categorical data analysis. Offers preparation for graduate-level statistics courses often required in master's and doctoral level programs as well as for employment positions in business and government.
- 4080 Advanced Research Methods.** Three credits. Prerequisites: Grade of B- or higher in PSY 3070 or equivalent training (POD) and PSY 4070. Design, conduct, analyze, and report psychological research. Advanced research conducted individually or in small groups. Offers preparation for graduate-level research required in master's and doctoral programs and for research applications in business and government settings.
- 4110 Issues and Ethics in Mental Health Services.** Three credits. Prerequisites: PSY 1410 and 3230. Overview of mental health services that can be provided by the bachelor's graduate. Offers training necessary for entry-level positions in mental health agencies, emphasizing ethical guidelines and legal issues.
- 4120 Psychology of Criminal Behavior.** Three credits. Survey of theory and research pertaining to criminal behavior, covering topics such as mental illness and crime, criminal homicide, assault, and sex offenses.
- 4130 Laboratory in Psychology (Sensation and Perception).** One credit.
- 4140 Laboratory in Psychology (Cognitive).** One credit.
- 4150 Laboratory in Psychology (Behavioral Neuroscience).** One credit.
- 4180 Laboratory in Psychology.** One credit.
- 4190 Child Psychology.** Three credits. Prerequisite: PSY 2300 recommended but not required. Intensive research-based overview of child development from conception to puberty, including experiences in observation and/or interaction with children. Cognitive development, language development, peer interaction, moral development, and the contexts of child development.
- 4210 Adolescent Psychology.** Three credits. Prerequisite: PSY 2300 recommended but not required. Physiological, emotional, mental, and social characteristics of adolescent development, including primary factors of influence.
- 4220 Correctional Psychology.** Three credits. Legal, law enforcement, delinquency, and criminal psychology, including psychological evaluation, classification, therapy, and rehabilitation. Special classifications. Field problems. Preventive implications.
- 4240 Behavioral Neuroscience.** Three credits. The role of the brain in those areas which are typically considered by psychology, such as sensory and motor functions, motivation, higher mental functions, and mental disorders.
- 4250 Psychology of Exceptional Children.** Three credits. Identification and etiology of patterns of exceptionality, with consideration given to behavioral manifestations and preventive and correctional programs.
- 4260 Introduction to Psychological Testing.** Three credits. Modern practices in test construction, selection, and application to a variety of situations such as schools, clinics, and businesses.
- 4270 Personnel Selection and Placement.** Three credits. Survey of test, interview, and other variables relating to applicant evaluation, placement, selection, and promotion.
- 4290 Wage and Salary Administration.** Three credits. Analysis of theory and practice in the administration of compensation. Practices and issues related to job evaluation, salary market data, pay for performance, and legal considerations.
- 4320 Psychology Labs.** One credit.
- 4330 Industrial/Organizational Training and Development.** Three credits. Examination of training and development methods for industrial and other organizational use. Includes both managerial and worker training. Includes learning, needs assessment, program development, and program evaluation.
- 4340 Human Factors Psychology.** Three credits. Prerequisite: PSY 3320 or consent of instructor. The process of designing for human use. Considers individual differences, visual, auditory, and tactile displays, anthropometry, illumination, noise, humans in motion, and space and environmental studies.
- 4350 Safety Psychology.** Three credits. Survey of basic theories of accident causation, safety research literature, methods of accident prevention, and industrial hygiene.

- 4360 Organizational Psychology.** Three credits. Prerequisite: PSY 1410. Application to human interaction, group processes, and leadership.
- 4370 Motivation and Work Attitudes.** Three credits. Motivation theories and applications to workplace. Emotions, attitudes, e.g., job satisfaction, organizational commitment, work-family balance. Performance effects.
- 4380 Group Dynamics.** Three credits. The functioning of groups. Includes development of group structure, group conflict, cohesion, social influence, leadership, group productivity, group decision making, and growth groups.
- 4390 Persuasion.** Three credits. Prerequisite: PSY 1410. Survey and analysis of theory and research on interpersonal influence. Applications of findings to various areas of human experience.
- 4400 Behavioral Modification.** Three credits. The application of behavioral change principles and evaluation strategies to the solution of individual, classroom, institutional, and organizational behavior problems.
- 4440 Social Psychology of Close Relationships.** Three credits. Prerequisite: PSY 1410. Theoretical and empirical issues in the scientific study of adult, close relationships from a social psychological perspective: initial attraction, relationship formation, maintenance, and dissolution. (Not a course in the broad area of marriage and the family: See CDFS 3320 Family Relations and SOC 2500 Marriage and Family.)
- 4460 Psychology of Happiness and Well-Being.** Three credits. Prerequisite: PSY 1410; PSY 2210 and 3230 recommended. Survey of theoretical and research literature in the areas of subjective well-being, happiness, life satisfaction, stress-resistant personality styles, and self-actualization.
- 4470 Theories of Counseling.** Three credits. Integration of the major theories of counseling and psychotherapy and their application.
- 4480 Learning Theories.** Three credits. Survey of research and major theories of learning with emphasis on classical and instrumental conditioning and related topics.
- 4490 Operant Conditioning.** Three credits. Prerequisite: PSY 1410. Philosophy of B.F. Skinner's behaviorism explored in his writings and those of his followers and critics. Current applications of behaviorism in all areas of psychology (child, marriage and family, animal conditioning, mental health, addictions, etc.) also examined.
- 4510 Science and Pseudoscience.** Three credits. Provides a definition of science and explores issues related to that definition. Explores psychology as a science. Evaluation of topics in psychology in the context of the class discussion of science.
- 4600 Psychosexual Adjustment.** Three credits. Psychological, cultural, and biological facets of the human sexual experience. Attitudes and behaviors, variances and dysfunctions, implications and strategies for treatment.
- 4610 Adult Psychology and Aging.** Three credits. Prerequisite: PSY 2300 recommended but not required. A survey of the research on adult development with emphasis on old age. Examines the physical, intellectual, social, vocational, and personality changes during the adult years.
- 4620 Psychology of Women.** Three credits. Psychological impact of the culture on women's attitudes, roles, aspirations, problems, and personality development.
- 4630 Death and Dying.** Three credits. An experiential course covering the folklore of thanatology, the funeral industry, handling grief, counseling the bereaved, and the hospice concept. Objectives include an attempt to view death with equanimity and personal growth from confronting death.
- 4650 Health Psychology.** Three credits. Prerequisite: PSY 1410 or consent of instructor. Psychological factors and principles involved in the study of correlates of health and illness, disease prevention, therapeutic interventions, and rehabilitative strategies.
- 4655 Foundations of Mental Health Counseling.** Three credits. Prerequisites: PSY 1410 and 3230 or equivalent. History, roles, and duties of the professional mental health counselor. Managed care and third party reimbursement issues, administration and supervision of mental health services, and other salient issues relating to the role of the professional mental health counselor. Preparation for graduate-level training in mental health counseling.
- 4660- Psychology Seminar.** One credit each. Representative and integrative study of scientific journals of field. May be taken for a total of three credits.
- 4660 Industrial-Social**
4670 Clinical-Personality
4680 General-Experimental
- 4700 History and Systems of Psychology.** Three credits. Prerequisites: Upper-division status; PSY 1410 recommended but not required. A survey of the history of psychology and an intensive study of current systems of psychology.
- 4720 Multicultural Perspectives in Psychology and Education.** Three credits. Theories and research relative to the education of multi-ethnic/racial minorities. Relation of culture and socialization to learning styles, assessment practices, and counseling considerations.
- 4730- Apprenticeship.** One to three credits. Supervised practical experience utilizing psychological principles and tools in an established organization.
- 4730 Industrial.** Three credits. (must be taken for 3 credits)
4740 Child. One to three credits.
4750 Pre-clinical. One to three credits.
4760 Adolescent. One to three credits.
- 4780 Human Neuropsychology.** Three credits. Prerequisite: PSY 4240 or consent of instructor. Organization and function of specific brain areas and the behavioral deficits and changes resulting from focal and diffuse brain damage.
- 4820 Psychology of Language.** Three credits. Prerequisite: PSY 1410. A cognitive approach to how people learn and use language to communicate. Covers basic psycholinguistics (production, perception, comprehension, and mental representation), language acquisition, and applied psycholinguistics (bilingualism, language disorders, and machine language).

Public Relations [PR]

- 3040 Public Relations Principles.** Three credits. Practice of public relations, including its fundamental concepts and theories, historical development, and current issues.
- 3360 Public Relations Communication.** Three credits. Prerequisite: Admission to candidacy. Techniques of creating and writing, including the planning and development of corporate, public service, and other persuasive messages.

3380 Public Relations Publications. Three credits. Prerequisites: Admission to candidacy; GRAF 2010. Effective print-design techniques with emphasis on organizational publications.

3400 Case Studies in Public Relations. Three credits. Prerequisite: PR 3040. Practical methods of handling problems in public relations with emphasis on fact-finding, planning, promoting, and evaluating. Possible topics include media relations for healthcare, international public relations, government relations and public relations, sports public relations, public relations in the publishing industry, public relations administration and management, and public relations for the small business entrepreneur.

4740 Public Relations Campaigns. Three credits. Prerequisites: Admission to candidacy; PR 3360; PR 3380 or GRAF 2950; senior standing. Researching and planning public relations campaigns. An opportunity for senior-level students to synthesize and apply knowledge and skills from previous courses.

Quantitative Methods [QM]

2610 Statistical Methods I. Three credits. Prerequisite: MATH 1630 or 1810. Identification, interpretation, and use of statistical data. Topics include measures of central tendency, variation, probability theory, point and interval estimation, and hypothesis testing. Computer applications emphasized.

3620 Statistical Methods II. Three credits. Prerequisites: QM 2610; junior standing. More advanced methods of statistical analysis including simple and multivariate tests of hypotheses, non-parametric methods, correlation, regression, and time-series analysis. Computer applications emphasized.

3640 Introduction to Operations Research. Three credits. Prerequisites: QM 3620; junior standing. Optimization techniques used in business decision making.

4010 Decision Science Techniques. Three credits. Prerequisites: QM 2610 and MGMT 3620; junior standing. Current topics of quantitative management decision analysis and modeling. Computer application emphasized.

Reading [READ]

1000 Reading Skills Enrichment. Three credits. Prerequisite: Admission based on placement testing or permission of the instructor. Development of reading skills necessary for comprehending academic texts. Customized curriculum in laboratory setting. Does not count for General Education credit. Four instructional hours.

3340 Teaching Reading in the Secondary School. Three credits. Prerequisite: Admission to teacher education. Materials, methods, and techniques for teaching reading at the secondary level, including clinical laboratory experiences. Designed for teachers of language arts.

4015 Language and Literacy, K–6. Six credits. Prerequisites: Admission to teacher education; ELED 3050. Introduces various strategies and techniques for teaching reading and writing in the elementary school.

4035 Language and Literacy in the Middle Grades. Six credits. Prerequisites: Admission to teacher education; ELED 3070. Introduces various strategies and techniques for teaching and assessing literacy in the middle school.

4130 Corrective Reading. Three credits. Prerequisite: Admission to teacher education program; Interdisciplinary Studies majors must

also complete ELED 3050 or 3070 and READ 4015 or 4035. Diagnostic skills needed to identify specific reading problems found in typical K-8 classrooms and processes needed to resolve the difficulties.

4460 Teaching Reading in the Content Areas. Three credits. Prerequisite: Admission to teacher education. Emphasis on the teaching of reading in content subjects, such as mathematics, science, and social studies in upper elementary, middle, and secondary schools. Specific suggestions for activities and lesson strategies included.

Recording Industry [RIM]

1020 American Media and Social Institutions. Three credits. (Same as JOUR/RIM 1020.) The power of the mass media and its effect on social institutions and practices. Develops skills of qualitative and quantitative social science research in the area of mass communication processes; examines media as social, cultural, and economic institutions that shape the values of American society, its political dialogues, its social practices, and institutions.

1230 Musicianship for Engineers. Three credits. Prerequisite: MATH 1710 or higher level math. A variety of music subjects explored within the context of commercial music as related to audio recording and production. Specific topics include music fundamentals, commercial music theory, commercial form and styles, and basic aural and keyboard skills. Students who have passed MUTH 1110 with a grade of C or better may not enroll in RIM 1230 for credit. Laboratory required.

3000 History of the Recording Industry. Three credits. Traces the development of the technology, business, major record labels, and the music recorded as well as significant individuals in these areas.

3010 Audio Fundamentals. Three credits. Prerequisite: MATH 1710 or higher level math. Examines theories and technologies used in audio production for music, radio, TV, and film. Provides the management-oriented student with a useful vocabulary covering the area of audio production and provides the production-oriented student with the basic theory upon which production skills can be built.

3020 Commercial Songwriting. Three credits. (Same as MUTH 3020.) Prerequisites: RI majors - admission to candidacy and RIM 1230 or MUTH 1110 or permission of instructor; others - permission of instructor. Organization of ideas, words, and music into the writing of popular songs. Analysis of songwriting trends. Students expected to play guitar or piano and sing.

3100 Music as Popular Culture. Three credits. (Same as JOUR 3100.) Prerequisites: RI majors - admission to candidacy; others - permission of instructor. Introduces range of scholarly approaches to the study of popular music. Encourages perspectives other than those of "producer" or "consumer." Requires application of analytic and critical methods in research paper assignments. Writing intensive.

3200 History of Country Music. Three credits. Prerequisite: Admission to candidacy. History and culture of American country music. Explores the historical progression of the genre and analyzes topics such as race and gender relations, material culture, generational conflict, and the role of "authenticity" in the creation and commodification of the music. Reading, writing, and listening intensive.

3450 Advanced Musicianship for Engineers. Three credits. Prerequisites: Admission to candidacy; RIM 1230 or MUTH 1110. (Not available to students enrolled in or who have completed MUTH 1120.) Continuation of RIM 1230. Furthering the application of

musical concepts previously learned to popular music. Topics include syncopation, modulation, two-handed accompaniment patterns, and selected secondary chords. Introduction to music notation software and the preparation of a lead sheet. Laboratory required.

- 3500 Lecture Series.** One credit. Prerequisite: RI majors - admission to candidacy. Major executives, producers, and others in the recording industry speak to students about contemporary topics in the music business. May be taken only once for credit toward the major. Pass/Fail.
- 3580 RIM Practicum.** One to three credits. Prerequisites: RI majors - admission to candidacy, approval of instructor prior to enrollment, and approved application. On-campus experiences in and related to the recording industry. Course may be repeated up to three times, but no more than six total credits toward the major allowed for RIM 3580, 4000, and 4010. Pass/Fail.
- 3600 Survey of the Recording Industry.** Three credits. Examination of the industry including, but not limited to, artist development, songwriting, publishing, record companies, record marketing and promotion, copyright, performance rights, and careers.
- 3650 Free Expression, Mass Media, and the American Public.** Three credits. (Same as JOUR/EMC 3650.) A general introduction to the issues surrounding free expression and its relationship to mass media in contemporary America. A comprehensive analysis of the history, philosophies, cases, and controls associated with freedom of expression.
- 3700 Copyright Law.** Three credits. Prerequisite: RI majors - admission to candidacy; others - RIM 3600. Examination of copyright law with particular reference to the music industry. Emphasis on understanding and applying the law to work in the industry.
- 3720 Artist Management.** Three credits. Prerequisite: RI majors - admission to candidacy; others - RIM 3600. Examines the role of recording artists' representatives. Topics include personal appearances, touring, unions, and contractual considerations.
- 3770 Publicity in the Recording Industry.** Three credits. Prerequisites: RI majors - admission to candidacy and JOUR 2710; others - RIM 3600 and JOUR 2710. Experience in creating publicity materials and developing media relations, press releases, press kits, and publicity campaigns.
- 3780 Entertainment Reporting and Writing.** Three credits. Prerequisites: RI majors - admission to candidacy and JOUR 2710; others - RIM 3600 and JOUR 2710. Theory and practice of the fundamentals of entertainment journalism, including music industry writing, feature stories, and CD and concert reviews.
- 3890 International Recording Industry.** Three credits. Prerequisites: RI majors - admission to candidacy; others - RIM 3600. Cultural, media, business, and legal aspects of making and selling records on a worldwide basis. Specific studies in foreign record company operations, i.e., production, distribution, marketing, promotion, and licensing. Immigration, union, and tax implications of artists recording abroad.
- 3900 Music Publishing.** Three credits. Prerequisites: RI majors - admission to candidacy and previous or concurrent enrollment in RIM 3700; others - RIM 3600 and 3700. Operations and functions of music publishing industry including songwriter-publisher relations. Primary thrust is popular music publishing, but art, religious, and educational music also discussed.
- 4000 Recording Industry Internship: Business.** One to six credits. Prerequisites: Admission to candidacy; 90 credit hours completed; RIM 3700 and three of the following sub-core courses must be completed: RIM 3720, 3900, 4320, or 4620; approved internship application. Practical experience for advanced students in a professional recording industry setting. This course may be repeated for additional credit. No more than six hours toward the major are allowed for RIM 3580, 4000, and 4010. Pass/Fail.
- 4010 Recording Industry Internship: Technology.** One to six credits. Prerequisites: Admission to candidacy; senior standing (90 hours), RIM 4190, RIM 4200, RIM 4400, and an approved internship application. Practical experience for advanced students in a professional recording industry setting. This course may be repeated for additional credit. No more than six hours toward the major are allowed for RIM 3580, 4000, and 4010. Pass/Fail.
- 4020 Advanced Songwriting.** Three credits. Prerequisite: RIM/MUTH 3020. Builds on concepts learned in RIM 3020. Students will work closely with mentors from the songwriting and publishing community and cowrite with professional staff writers. New topics include concept and assignment writing and cowriting.
- 4190 Introduction to MIDI and Sound Synthesis.** Three credits. (Same as MUTH 4190.) Prerequisites: RI majors - admission to candidacy and RIM 1230 or MUTH 1110; others - RIM 3010, RIM 1230, or MUTH 1110 or permission of instructor. An introduction to synthesizer programming and the Musical Instrument Digital Interface (MIDI) with emphasis on history, theory, and application. Hands-on activities include synthesizer programming with virtual instruments and MIDI sequencing using a digital audio workstation. Laboratory required.
- 4200 Digital Audio Technology.** Three credits. Prerequisites: RI majors - admission to candidacy and RIM 1230 or MUTH 1110; others - permission of instructor. An overview of digital audio technology with an emphasis on computer technology related to music production, digital audio workstation hardware and software (e.g., Pro Tools), and digital audio theory. Laboratory required.
- 4210 Personal Desktop Music Production.** Three credits. Prerequisites: RI majors - admission to candidacy; others - permission of instructor. Theory and application of audio hardware and software for personal desktop music production. For RIM Music Business and Commercial Songwriting majors and Music majors, specifically Music Education majors. Emphasis on application through hands-on instructional techniques. May not be used for credit by RIM Audio Production majors. Satisfies the music production component of the RIM Commercial Songwriting concentration. Laboratory required.
- 4290 MIDI Sequencing and Virtual Instruments.** Three credits. (Same as MUTH 4290). Prerequisites: RI majors - admission to candidacy and RIM/MUTH 4910; others - RIM/MUTH 4190 or permission of instructor. An advanced hands-on course with an emphasis on MIDI sequencing and virtual instruments within Pro Tools, Reason, and other music production software. Drum machines, synthesizers, samplers, and other electronic instruments used to create a commercial music track. Laboratory required.
- 4300 Advanced Pro Tools Techniques.** Three credits. Prerequisites: RI majors - admission to candidacy and RIM 4200; others - permission of instructor (POD). A detailed examination of digital audio workstation (DAW) techniques used in a variety of production environments. Comprehensive in-depth instruction in the use of Pro Tools hardware and software with emphasis on file management, stereo and multitrack editing, tuning, use of plug-ins, and delivery formats. Lab exercises to develop hands-on competency; hands-on proficiencies to assess abilities. Laboratory required.
- 4320 Concert Promotion and Touring.** Three credits. Prerequisites: RI majors - admission to candidacy; others - RIM 3010 and 3600.

An in-depth study of the theoretical and practical aspects of presenting contemporary arts and entertainment performances. Topics include talent acquisition, contracts and riders, production, venues, budgeting, ticket services, and promotion.

4330 Sound Reinforcement. Three credits. Prerequisite: RI majors - admission to candidacy; others - RIM 3010. Current technologies and techniques involved in modern sound reinforcement. Topics include club venue and large concert systems. Field work required.

4400 Recording Studio Techniques. Three credits. Prerequisites: RI majors - admission to candidacy, RIM 1230 or MUTH 1110, and RIM 4200 or concurrent enrollment in RIM 4200 (corequisite); others - permission of instructor. Develops understanding of techniques and technology in modern multitrack recording and mixing. Extensive hands-on experience. Laboratory required.

4440 Critical Listening. Three credits. Prerequisites: RI majors - admission to candidacy and previous or concurrent enrollment in RIM 4400; others - permission of instructor. Ear-training and aesthetics for recording engineers. Class activities involve listening and analysis of master tape and disc formats. Sources include a wide variety of music genres as well as specialized technical ear-training materials. Development of a vocabulary for communication of aural impressions. Introduction to "high-end" audio.

4480 Mastering. Three credits. Prerequisites: RI majors - admission to candidacy and RIM 4200 and 4400; others - permission of instructor. An advanced hands-on approach to the principles and practices of mastering. Focuses on the use of digital audio workstations specially designed for audio mastering and related outboard equipment. Additional focus on surround mastering and DVD authoring. Laboratory required.

4510 Study Abroad. One to three credits. Prerequisite: Permission of department. Topics related to the recording industry in the country in course delivered. May be taken two times.

4570 The Art of Soundtrack Design. Three credits. Prerequisite: RI majors - admission to candidacy; others - permission of instructor. Examines the creative use of sound in film and theatre through critical listening to various soundtracks. The theory and practice of sound design analyzed and discussed in a lecture-oriented class.

4580 Sound for Picture. Three credits. Prerequisites: RI majors - admission to candidacy, RIM 4200 and 4400; others - permission of instructor. In-depth, interactive study of sound and its relationship to picture. Time code, synchronization, workflow, data interchange, sound recording and editing, ADR, Foley, routing structures, sound mixing, and delivery methods. Demonstrations and lab use digital audio workstations and controllers found in professional facilities. Laboratory required.

4590 Computer-based Scoring for Visual Media. Three credits. (Same as MUTH 4590.) Prerequisites: RI majors - admission to candidacy, RIM/MUTH 4190 and either RIM 4200 or RIM/MUTH 4290; others - RIM/MUTH 4190 and either RIM 4200 or RIM/MUTH 4290 or permission of instructor. Writing music for visual media using the capabilities of a computer workstation. Introduces compositional techniques utilizing Macintosh sequencing software and QuickTime video playback in combination with synthesizers and sample playback programs. Concepts include synchronization of music to picture, tempo selection, sound source selection/manipulation, and analysis of the dramatic content of a scene. Laboratory required.

4620 Marketing of Recordings. Three credits. Prerequisite: RI majors - admission to candidacy; others - RIM 3600. Special emphasis on the particular structures and problems involved in the movement

of recordings from manufacturer to the buying public. Topics include product marketing, promotion, and distribution.

4630 Recording Industry Research. Three credits. Prerequisites: RI majors - admission to candidacy, RIM 4620 or MKT 3820, computer literacy, and permission of instructor. Provides hands-on experiences in research in the recording industry. Involvement in group projects to provide music and consumer research services to various clients in the industry. Workshop oriented.

4650 Multitrack Music Recording: Studio B. Three credits. Prerequisites: RI majors - RIM 4200 and 4400; others - permission of instructor. In-depth study of the technology and techniques of contemporary multitrack music recording. Lectures and labs focus on modern recording techniques, the analog and digital audio hardware/software installed in Studio B, systemic aspects of recording studios, and preparation for professional work in the studio environment. Laboratory required.

4651 Multitrack Music Recording: Studio A. Three credits. Prerequisites: RI majors - RIM 4200 and 4000; others - permission of instructor. In-depth study of the technology and techniques of contemporary multitrack music recording. Lectures and labs focus on modern recording techniques, the analog and digital audio hardware/software installed in Studio A, systemic aspects of recording studios, and preparation for professional work in the studio environment. Laboratory required.

4660 Advanced Music Engineering. Three credits. Prerequisites: RI majors - admission to candidacy and 4650 or 4651; others - permission of instructor; concurrent or previous completion of RIM 4300 recommended. Project-based class emphasizing creative and aesthetic aspects of multitrack music recording. Topics include microphone techniques, session protocols, incorporation of MIDI elements, sample replacement and augmentation, rough mixing, console automation techniques, signal processing, and ear-training for recording engineers. Laboratory required.

4670 Studio Production. Three credits. Prerequisites: RI majors - admission to candidacy and RIM 4300 or 4650 or 4651; others - permission of instructor. Laboratory experience and lectures in commercial music, recording techniques, and business designed to develop the abilities needed to become an independent producer of contemporary commercial recordings. Laboratory required.

4690 New Media for the Music Business. Three credits. Prerequisite: RIM 4620 or permission of the instructor. Applied theory on promoting the services and products of the recording industry through the Internet. Students will create interactive Web sites for companies associated with the recording industry.

4700 Contracts and Legal Issues. Three credits. Prerequisites: RI majors - admission to candidacy and RIM 3700; others - RIM 3600 and 3700. An overview of legal problems encountered in the recording industry with specific attention to contractual considerations in recording and producing.

4720 Record Retail Operation. Three credits. Prerequisites: RI majors - admission to candidacy and MKT 3820 or RIM 4620; others - RIM 3600 and MKT 3820. Problems and practices of recording industry retailers, including pricing, inventory control, advertising, operations, and retail locations for audio and video recordings and printed music.

4730 The A&R Function. Three credits. Prerequisites: RI majors - completion of concentration sub-core. Role and responsibilities of a record company's artist and repertoire department. Emphasis on finding and guiding an artist as well as the administration of the production and marketing of a project.

- 4740 Studio Business Operations.** Three credits. Prerequisite: RI majors - admission to candidacy; others - permission of instructor. Applications course involving the administrative functions of recording studio operations, including accounting, marketing, personnel, planning, and computer applications.
- 4800 Understanding the Nashville Music Business—Past and Future.** Three credits. Prerequisites: Concurrent with or subsequent to RIM 4000 or RIM 4010. Acquaints interns and students working in the Nashville music industry with industry practices through a historic perspective and through conducting a research project.
- 4810 Topics in Recording Industry.** One to three credits. Prerequisite: RI majors - admission to candidacy. Examination and critical evaluation of current issues related to the operation and function of various aspects of the recording industry. Subject matter varies. Course may be repeated one time for additional credit.
- 4820 Record Label Operations.** Three credits. Prerequisites: RI majors - admission to candidacy and RIM 4620 or MKT 3820; RIM 4620. Day-to-day marketing tasks conducted onsite for a record label offer students training on the practical application of the latest marketing software. Must be able to travel to Music Row and commit to 10 hours per week at a record label.
- 4830 Recording Studio Maintenance.** Three credits. Prerequisites: RI majors - admission to candidacy, MATH 1710 or higher level math (MATH 1010 will not fulfill this requirement), or permission of instructor; others - permission of instructor. Focuses on studio maintenance and troubleshooting techniques. Includes soldering, wiring standards, machine alignment, and system architecture. Laboratory required.
- 4840 Music Publishing Administration.** Three credits. Prerequisites: RIM 3600, 3900, or permission of instructor. Common relationships between music publishers and the community of the music industry as it relates to the licensing and protection of copyrighted materials.
- 4900 Individual Problems in the Recording Industry.** One to three credits. Prerequisites: RI majors - admission to candidacy, approved application, and permission of department. Advanced project in production or music business. Students submit applications to production and technology or music business faculty committees. Once approved, a determination is made as to credit to be awarded. Project is reviewed by a panel of three faculty members to determine grade. No more than three credits toward the major are allowed.
- 4910 Advanced Production Seminar.** Three credits. Prerequisites: RI majors - admission to candidacy and permission of instructor only. The conceptualization, management, and production of a specific program format integrating theory and skills from other EMC/RIM courses. Sports, music, and drama are probable topics. Topics will vary by semester offering.
- 3360 Camping and Camp Counseling.** Three credits. Emphasis on the camp counselor, including discussion of techniques and skills appropriate in various camp settings. Day-to-day management of residential, trip/travel, and special emphasis camps examined. Some off-campus experience.
- 3370 Principles of Outdoor Recreation.** Three credits. Concepts, principles, and practices in various types of park, recreation, and tourism settings. Emphasis on overall and critical subsystems of the outdoor recreation management system primarily in public land settings.
- 3371 Principles of Interpretation and Resource Education.** Three credits. The study of natural, cultural, and historical interpretation and resource education concepts, principles, and practices applicable to various types of recreation and leisure service settings. Emphasis on interpretation and resource education, why and how to interpret and educate about resources, as well as how to effectively manage interpretation and resource education in varied settings.
- 3380 Introduction to Recreation for Persons with a Disability.** Three credits. Explores issues surrounding recreation opportunities for persons with disabilities. Introduces important issues such as attitudes, advocacy, accessibility, legislation, and the broad range of opportunities in the provision of recreational services for persons with disabilities in our society.
- 3390 Tourism and Commercial Recreation.** Three credits. Introduces the broad sector of recreation and leisure services profession which focuses on delivery of leisure travel and tourism-based recreation services and programs. Particular emphasis placed upon understanding the relationship between commercial recreation organizations and historical, cultural, and natural resources.
- 3520 Leadership and Group Processes in Recreation and Leisure Services.** Three credits. Conceptual and human relationship skills required of effective professionals. Emphasis on understanding group dynamics and processes associated with leading activities, programs, and personnel in recreation and leisure settings. Key component will be field application of skills.
- 3530 Program Planning in Recreation and Parks.** Three credits. The understanding of participant leisure behavior and needs, and ways organizations create services to respond to these leisure needs.
- 3540 Planning of Park and Recreation Areas and Facilities.** Three credits. Prerequisite: REC 3010. Planning principles, techniques, and standards as they relate to the construction of park and recreation areas and facilities.
- 3560 Field Studies in Recreation and Parks.** Three credits. Prerequisites: REC 3010 and 3530. Provides an opportunity for supervised practical application of classroom theory in professional field work.
- 3570 Outdoor Pursuits Education.** Three credits. Concentration on developing student's ability in adventure-based recreation and education. Emphasis placed on learning how to implement an outdoor pursuit experience for oneself and others. Both on- and off-campus experiences will be conducted and may involve day/overnight camping, canoeing, kayaking, rock climbing, rappelling, caving, ropes courses, and orienteering.

Recreation [REC]

- 3000 Leisure in Your Life.** Three credits. Issues relative to choices an individual and society make when utilizing "free" time and resources. Increased understanding of the multibillion dollar leisure industry and its effect on our personal and collective lives.
- 3010 Introduction to Recreation and Leisure Services.** Three credits. Development and basic concepts of the recreation and leisure services profession. History, definitions, theories, and social psychological concepts as well career opportunities and areas of service delivery.
- 4110 Youth Sport Programming and Administration.** Three credits. Explores and examines youth sport history, philosophy, developmental stages of youth, administration and programming for youth, and current issues and events necessary to deliver youth sport activities within a variety of settings, agencies, and/or organizations. Addresses the various learning stages of youth sport and the impact these experiences can have on youth.

- 4340 Fitness Education for the Adult.** Three credits. (Same as HLTH/PHED 4340.) Planning, teaching, and participating in individual and group fitness programs for the adult. Offers preparation for administering and interpreting assessments of related components with understanding of physiological principles related to exercise in the adult. Major lifetime wellness activities covered.
- 4470 Leisure and Aging.** Three credits. Aging relative to the individual, family, peers, and society with an emphasis on leisure. The holistic approach including physical, psychological, social, cultural, environmental, and cognitive aspects. Interdisciplinary approach makes this course ideal for the developing or practicing human service professional.
- 4480 Recreational Therapy Techniques.** Three credits. Exploration of the many activity-based therapeutic interventions currently utilized to alleviate existing health-related problems, maintain current level of functioning, or to assist in overall rehabilitation efforts of the transdisciplinary treatment team.
- 4490 Campus Recreation.** Three credits. For those wishing to acquire a specific and comprehensive knowledge of the recreational sports program and an understanding of its place and value in education and society.
- 4499 Therapeutic Terminology in Recreational Therapy.** Three credits. Designed to provide students with an understanding of therapeutic terminology and the utilization of appropriate terminology for third party reimbursement, treatment teams, counseling, and medical documentation.
- 4500 Introduction to Recreational Therapy.** Three credits. Explores the profession of recreational therapy, the wide range of disabilities, and the role of intervention in a variety of settings: clinical, community, and transitional. Topics include history, philosophy, professional development/certification, systemic program design, and implementation.
- 4510 Recreational Therapy in Clinical Settings.** Three credits. Increases understanding of recreational therapy in clinical settings, working with persons with health-related issues and/or disability. Concepts of disease and disability, holistic approach, interdisciplinary treatment, assessment, intervention planning and implementation, evaluation, documentation, and third party reimbursement explored.
- 4520 Transitional and Community Recreational Therapy.** Three credits. Addresses issues clients may face when leaving institutions and returning to their communities. Examines the role and provision of recreational therapy services in transitional and community-based settings.
- 4540 Organization and Administration of Recreation.** Three credits. Prerequisites: REC 3010 and nine additional hours of recreation coursework. Provides an opportunity for understanding the duties and responsibilities of an administrator and for developing the ability to perform these in recreation and leisure settings.
- 4550 Business Applications in Leisure Services.** Three credits. Explores the application of public relations, customer service, marketing principles, and financial management of leisure service delivery systems, including procedures for developing marketing and budget plans for leisure services. Emphasizes public and customer relations, budgeting, and organizing and analyzing the marketing strategies in leisure service organizations.
- 4570 Outdoor Recreation Workshop.** Three credits. An off-campus course that provides materials and experiences unobtainable in the traditional classroom. Exposure to issues, trends, and concerns relevant to outdoor recreation, resource management, and the delivery of programs and services in outdoor environments. Public, private non-profits, and commercial agencies will be experienced through a series of field trips, talks, groups exercises, and other experiential-based activities.
- 4580 Seminar: Outdoor Recreation and Environmental Issues.** Three credits. Increases awareness of the importance of environmental considerations when planning, managing, or administering outdoor recreation programs. Includes environmental issues and methods of seeking solutions to environmental problems.
- 4590 Readings in Parks and Recreation.** Three credits. In-depth reading; preparation of an annotated bibliography and report. Arrangements for course should be made with the instructor prior to registration.
- 4600 Technology Applications.** One credit. Corequisite: REC 4601. Understanding and competency using a variety of technology applications related to the profession. Students required to enroll in corresponding lab during the same semester.
- 4601 Technology Applications Lab.** Two credits. Corequisite: REC 4600. Investigation and application of profession-specific software and hardware applications.
- 4660 Evaluation of Recreation and Leisure Services.** Three credits. Research and evaluation procedures and techniques applicable to assessing recreation and leisure service programs, participants, administrative structures, and resources. Emphasis on beginning and completing a “real-world” evaluation project.
- 4700 Challenge Course Facilitation.** Three credits. A systematic approach to the fundamentals of group management in an experiential ropes course setting. Focuses on both interpersonal and technical facilitation skills. Several on- and off-campus experiential, demonstration, and practical application sessions required.
- 4790 Sport and Society.** Three credits. (Same as SOC 4790.) A behavioral approach to the sport and leisure phenomena from the related perspectives of sociology and anthropology.
- 4850 Cross-Cultural Perspectives in Leisure and Tourism.** Three credits. An in-depth study of the leisure experience in other (non-U.S.) cultures through onsite observations; visits to cultural/historic sites; and interactions with managers and staff at selected parks, museums, attractions, and world heritage sites.
- 4890 Pre-Internship Seminar.** One credit. Prerequisites: REC 3010 and junior standing. Review of philosophy and professional ethics of recreation and leisure services. Self assessment of student’s strengths, limitations, and career aspirations. Preparation of reference files, letters, and resumes. Identification of, application to, and acceptance by department-approved agencies for completion of internship. Pass/Fail.
- 4900 Internship in Therapeutic Recreation.** Six or twelve credits. Prerequisites: Departmental approval; minimum 2.25 GPA; REC 3010, 3530, 3540, 4540, and 4890; additional prerequisites: REC 4500, 4510, and 4480 or 4520. Provides practical experience. Student assigned to a field experience to spend an entire semester or two summer sessions in on-the-job training with a recreational agency.
- 4901 Internship in Outdoor Recreation.** Six or twelve credits. Prerequisites: Departmental approval; minimum 2.25 GPA; REC 3010, 3530, 3540, 4540, and 4890. Provides practical experience. Student assigned to a field experience to spend an entire semester or two summer sessions in on-the-job training with a recreational agency.

4902 Internship in Recreation. Six or twelve credits. Prerequisites: Departmental approval; minimum 2.25 GPA; REC 3010, 3530, 3540, 4540, and 4890. Provides practical experience. Student assigned to a field experience to spend an entire semester or two summer sessions in on-the-job training with a recreational agency.

4920 Independent Study. One, two, or three credits. (Same as ATHT/EXSC/HLTH/PHED 4920.) Independent study topics based on a study plan prepared in cooperation with a faculty supervisor. Culminates in a formal paper and/or comprehensive examination. Application forms must be completed and approved prior to enrollment. A maximum of three credit hours may be applied toward degree.

4965 Aquatic Exercise and Therapeutic Rehabilitation Techniques. Three credits. (Same as ATHT/EXSC 4965.) Examines the various uses of the aquatic environment to develop, maintain, and improve physical performance with practical development of skills and techniques and aquatic exercise programming. Combines both didactic and laboratory activities in an experiential learning environment.

Religious Studies [RS]

3010 The Bible: Its Origin and Content. Three credits. How the Bible came into being, including the origin of manuscripts, principles of textual criticism, inspiration, inerrancy, history, and translations. An introduction to the individual books of the Bible.

3020 Comparative Religion. Three credits. The meaning of religion in life, both ancient and modern. The impact of intellectual and emotional commitment upon conduct is emphasized through a study of world religions.

3040 The History of Christianity. Three credits. Main developments in the doctrinal affirmations of the Christian church and their Biblical background.

4020 Jesus of Nazareth. Three credits. The life of Jesus presented against the historical, religious, geographical, and archaeological background of the world of the first century A.D. and in light of recent discussions, movements, and books.

4050 Judaism, Christianity, and Islam. Three credits. Historical development of the idea of one God through Judaism, Christianity, and Islam; their relation to other religions of the world.

4800 Readings in Religious Studies. Three credits. Directed study concerning a particular problem or thinker within religious studies.

Russian [RUSS]

1010 Elementary Russian I. Three credits. A beginning course in written and spoken Russian. Special emphasis on noun declension and verbal aspects.

1020 Elementary Russian II. Second semester. Three credits. Prerequisite: RUSS 1010 or advanced placement. A continuation of RUSS 1010.

2010 Intermediate Russian I. Three credits. Prerequisite: RUSS 1020 or equivalent.

2020 Intermediate Russian II. Second semester. Three credits. Prerequisite: RUSS 2010 or equivalent.

Safety [SAFE]

4320 Principles of Accident Control. Three credits. Basic course on principles, concepts, and methodology of the safety movement. Introductory experiences dealing with accident prevention and control efforts recommended for various social institutions and agencies.

4350 Automotive Transportation Safety Programs. Three credits. Safety elements of automotive and other forms of transportation. Federal, state, and local legislation concerning transportation control and design.

4850 Driver and Traffic Safety Fundamentals. Three credits. Prerequisite: Valid driver's license. Introduction to driver and traffic safety education. Primary focus on current concepts related to safe driving.

4870 Teaching Driver and Traffic Safety. Three credits. Prerequisite: SAFE 4850. Designed to develop teaching techniques for laboratory instruction including on-street, driving simulator, and multiple-car-range programs.

Social Work [SW]

2570 Introduction to Social Work. Three credits. The methods, history, philosophy, and present organization of the social work profession.

2630 Interviewing Skills for Social Work Practice. Three credits. An introduction to principles and processes of social work practice including interviewing and developing relationships.

3000 Social Policy. Three credits. Prerequisite: SW 2570. Emphasis on recurring themes in social welfare policy development processes, historical turning points; societal ethics; causal relationship—social problems, social change, and social welfare policy analytical frameworks for assessing social welfare policy and programs.

3050 Women and Poverty. Three credits. (Same as WMST 3050.) Prerequisite: WMST 2100 or SW 2570. Predominant theories, policies, and programs dealing with poverty among women. Explores the effects of poverty on women in addition to a general knowledge of poverty; ageism, sexism, and racism in relation to poverty; historical treatment of women and views of poverty.

3100 International Social Work. Three credits. International dimensions of social work. Explores the impact of globalization on social work problems. Includes status of women, aging populations, family breakdown, drug addiction, child abuse and neglect, poverty, and emerging problems such as civil strife, ethnic cleansing, resettlement, and AIDS.

3110 Research Methods for Social Work Practice. Three credits. Prerequisite: SW 2570. Research processes; includes information about values for research, knowledge of methods, and opportunities for skill development.

3120 Data Analysis for Social Work Practice. Three credits. Prerequisite: SW 3110. Data analysis and interpretation. Opportunities for skill development in the use of statistical procedures and knowledge of the meaning of results of such procedures. Instruction in computer use for data entry and data analysis, including the development of programming skills using the SPSS-X software package on the University computer system.

3160 Human Behavior and the Social Environment I: Individuals and Families. Three credits. Major theories of human development across the life span and life course; useful for entry-level social

work practice. Ecological relationship of diverse individuals and families with other systems in the social environment described with focus on biological, psychological, and social context and content.

3161 Human Behavior and the Social Environment II: Groups, Organizations, and Communities. Three credits. Prerequisites: SW 3160. Builds on concepts learned in SW 3160. Presents theories on and about the development, structure, and function of small groups, organizations, and communities and how they interrelate eco-systemically with individuals and families.

3170 Family Caregiving Across the Life Span. Three credits. Caregivers—gender roles, cost of caregiving, managing stress, respite care, finding recourses, financial and legal matters, establishing support groups, differential caregiving tips for various illnesses and disabilities from infancy to old age, emerging trends, and long distance caregiving.

3200 Cultural Diversity: Competency for Practice. Three credits. (Same as AAS 3200.) An examination of culturally appropriate practice issues that are essential considerations for effective service delivery, including African American families and ethnic subcultures predominant in the U.S.

3250 School Social Work. Three credits. Prerequisites: SW 2570 and 2630. Introduces social work students to practice in school settings. Examines various roles of social workers in school systems and the specifics of practicing with students from 3–21 years of age in individual, group, and organizational level interventions.

4150 Topics in Social Work. Three credits. Selected topics important in current social work practice but too specialized to be taught as regularly scheduled courses.

4200 Creativity and Personal Growth. Three credits. Prerequisites: Junior standing, including 18 hours in the arts, social work, and/or social or behavior sciences, or permission of instructor. Introduces the creative process and the use of that process in the development of self-awareness and empathetic relationships with others. Assignments include the creation of individual and group projects and the facilitation of a creative project in a community agency or school.

4430 Social Work with the Terminally Ill. Three credits. Factors and principles involved with the terminally ill which should stimulate students to learn and think about what he/she values and anticipates experiencing in the area of medical social work.

4440 Social Work with the Disabled Individual. Three credits. The effects of disability on the individual, the family, and society. An examination of a variety of intervention strategies from a social work perspective.

4480 Social Work with Groups. Three credits. Prerequisites: SW 2570, 2630, and 4580. Group process and group techniques as they apply to social work practice, including both treatment and task groups (Must be admitted to Social Work program.)

4580 Social Work: Practice I. Three credits. Prerequisites: SW 2570, 2630, 3000, and 3160. Theories and related techniques for beginning-level social work. (Must be admitted to Social Work program.)

4590 Field Instruction I. Six credits. Prerequisites: SW 2570, 2630, 3000, 3110, 3160, 3161, 4580; completion of all General Education requirements; and senior standing. Student is assigned to a social agency under the joint supervision of agency and instructor with concurrent seminar. Application must be made the preceding semester. (Must be admitted to Social Work program.)

4620 Child Welfare Services. Three credits. The contemporary child welfare system and services designed to strengthen families. Historical trends, policy issues, and child advocacy.

4640 Health: Organizations, Policy, and Ethics. Three credits. (Same as SOC 4640.) A resource allocation assessment of U.S. health care systems. Applied ethics topics (i.e., justice, virtue, and informed consent) included.

4650 Social Work: Practice II. Three credits. Prerequisites: SW 3110, 3120, 4580, and senior standing. Theories and related techniques for advanced-level social work practice. (Must be admitted to Social Work program.)

4680 Field Instruction II. Nine credits. Prerequisites: SW 4580, 4590, senior standing, and all other major requirements. Second field placement for social work majors. Application must be made the preceding semester. (Must be admitted to Social Work program.) Pass/Fail.

4690 Integrative Seminar in Social Work. Three credits. Prerequisites: SW 4650 and 4680 or concurrent enrollment. An opportunity for the student, with instructor and peers, to explore the knowledge, values, and skills gained from academic and field experiences and to synthesize and integrate theory and practice. (Must be admitted to Social Work program.)

4720 Crisis Intervention. Three credits. The basis of crisis theory applied to intervention services for suicide, rape, natural disasters, and other crises.

4800 Special Projects. One to six credits. Field experiences or reading courses through which special interests or needs of the student may be pursued under individual supervision. Arrangements must be made with an instructor prior to registration.

School Personnel Services Education [SPSE]

3220 Technology in Teaching. Three credits. Prerequisite: Admission to teacher education program. Enables teachers to use technology to deliver curriculum, prepare course materials, and keep student records. Key concepts and skills include preparation of lesson plans and unit plans; development of an e-portfolio and Web page; and the integration of technology to teaching, learning, and assessment.

4100 Counseling and Leadership Seminar in Student Affairs. Three credits. Prerequisite: Permission of Student Affairs personnel. Offers student leaders in Student Affairs opportunities to learn and practice skills to help them be more effective leaders. Credit for this class may not be counted toward the student's major or minor.

4210 General Methods Including Audio-Visual. Three credits. Methods and teaching strategies generally applicable to the secondary school: instructional planning, classroom management, and the effective utilization of learning materials and audio/visual aids.

4260 Problems in Education. One to three credits. An opportunity for individuals or groups to work on problems related to their needs. Topic and credit to be determined at the time of scheduling. Maximum of six semester hours credit may be applied toward a degree.

Sociology [SOC]

- 1010 Introductory Sociology.** Three credits. **Counts toward General Education Social/Behavioral Sciences requirement.** Covers the central concepts, theories, and methods of sociology. Focuses on social processes and institutions in modern societies. Assists students in understanding and applying this knowledge in their everyday lives.
- 2010 Social Problems.** Three credits. A survey of issues defined as problems by society; examines programs and agencies that address them. Problems addressed include poverty, crime, environment, energy, health, etc.
- 2105 Introduction to Latin American Studies.** Three credits. (Same as SPAN 2105, PS 2105, ART 2105, ANTH 2105, GEOG 2105.) A multidisciplinary, team-taught introduction to Latin America. Covers the cultures and societies of the region: prehistory, history, geography, politics, art, languages, and literatures. Required course for all Latin American Studies minors.
- 2500 Marriage and Family.** Three credits. Social, cultural, and personal factors relating to mate selection, intimate relationships, and family life with an emphasis on families in the United States.
- 2600 Introduction to Gerontology.** Three credits. (Same as GERO 2600.) Basic concepts, overview of the field, illustrations of problems, and applications for an aging America.
- 2930, 2940, 3970, 3980 Cooperative Education.** Three credits each. Each course may be taken for one, two, or three credits after consultation with instructor. Courses must be taken in sequence.
- 3040 Research Methods.** Three credits. (Same as ANTH 3040.) Issues and strategies used by sociologists in their scientific studies and in their applied work in society.
- 3050 Data Analysis.** Four credits. (Same as ANTH 3050.) Analysis, interpretation, and reporting of social science data. Incorporates the use of a statistical package such as SPSS or SAS. Offers fundamental applied research skills for the job market. Laboratory required.
- 3060 Sociological Theory.** Three credits. Theoretical foundations of sociology with emphasis on the major theories in sociology and their development. Addresses diverse intellectual traditions in both classical and contemporary theory.
- 3150 Life Cycle and the Social Environment.** Three credits. Prerequisites: PSY 1410 or SOC 1010 or 2010 or BIOL 1010/1011. Overview of life course structure and processes examining physical, cognitive, social, and personality development including the role of institutions.
- 3210 Drugs and Alcohol.** Three credits. Prerequisite: SOC 1010, 2010, or permission of instructor. Sociological, historical, political-economic, and cultural dimensions of drugs and alcohol in society.
- 3250 Social Deviance.** Three credits. A general survey and theoretical review of the definitions, causes, and consequences of deviance and social control. Analyzes drugs, panics, sex, media violence, and emotions in society.
- 3320 Public Opinion and Propaganda.** Three credits. Nature of public opinion and its role in the political and social process; myths, symbols, and other instruments and techniques of propaganda in opinion formation.
- 3400 Gender and Society.** Three credits. Prerequisite: SOC 1010 or WMST 2100. A sociohistorical and cultural exploration of the socialization patterns, relationships, expectations, influences, organizational, institutional, and aging experiences of women and men in American society.
- 3950 Social Organizations and Institutions.** Three credits. Prerequisite: SOC 1010 or 2010. Theory, analysis, and public policy applications for contemporary organizations (corporations and social agencies) and institutions (family, education, health, media.)
- 4010 Social Inequality.** Three credits. The origins, variations, and consequences of class, status, and power in society. Individual and group economic interests, social prestige, ideology, market and institutional inequality.
- 4020 Sociology of Aging.** Three credits. Demographic, social, and cultural aspects of aging with particular emphasis on the types of problems encountered by older persons in American society.
- 4030 Topics in Gerontology.** Three credits. (Same as GERO 4030.) An opportunity to integrate gerontological theory and research techniques with the practical problems of older persons.
- 4040 Health Care Delivery Issues.** Three credits. An assessment of critical issues with special emphasis on policies, procedures, and intervention strategies in long-term care settings.
- 4050 Sociology of Families.** Three credits. Analysis of the family as a social institution with an emphasis on contemporary trends and diversity.
- 4090 Health Care Management.** Three credits. Details of the technical aspects of health care management with an emphasis on long-term care settings.
- 4100 Sociology of Work.** Three credits. Comparative analysis of work structure and processes in organizational contexts, including study of management and employee organizations and legal environments regarding workplace relations.
- 4140 Violence in the Family.** Three credits. (Same as CDFS 4140.) The causes, dynamics, and consequences of violence in the family. Includes a discussion of violence toward children, spouses, dating partners, siblings, and elders. Emphasizes the social conditions that lead to these types of violence.
- 4150 Topics in Sociology.** Three credits each. An in-depth study of a special topic which is significant in current sociological literature.
- 4160 Sociology of Gangs.** Three credits. Prerequisite: SOC 1010. History of gangs in the United States, the factors that account for their formation and perpetuation, and current empirical data on gang composition, demographics, and culture. Policy strategies for prevention, law enforcement, and nonlegal intervention assessed.
- 4170 The Social Context of Southern Music.** Three credits. A socio-historical analysis of Southern music providing a framework for examining the relationship between culture and popular culture, the production of popular culture, and popular culture as a vehicle for examining social issues of the Southern region.
- 4200 African American Film, Theater, and Television Images.** Three credits. (Same as AAS 4200.) Prerequisite: SOC 1010 or PSY 1410. Survey of African American film, theater, and television images in relation to social movements and social policy. Human behavior theory application and sociological paradigm application required.
- 4240 Race and Ethnic Relations.** Three credits. The dynamics of race and ethnic relations in the United States from a sociohistoric perspective.

- 4300 Criminology.** Three credits. Theories of the causes of criminal behavior and coverage of its development and incidence; punishment and methods of control and rehabilitation.
- 4360 Medical Sociology.** Three credits. Sociological analysis of health care delivery including problems, policies, and issues faced by recipients and providers of care. Focuses on the U.S., role theory, and demographics.
- 4361 Contemporary Issues in Women's Health.** Three credits. Examines the social and cultural issues that shape women's health-related experiences and disparities in health and illness in contemporary culture. Critically analyzes problems associated with medicalization, technological favoritism, and for-profit intrusion. Explores issues and experiences among women by race/ethnicity, socioeconomic class, age, sexual orientation, and abilities.
- 4500 Social Psychology.** Three credits. Individual behavior in social contexts and symbolic interaction in groups. Includes social influences on perception, conformity, attitudes, communication, group structure, leadership, and role behavior.
- 4510 Social Movements and Social Change.** Three credits. Study of the major sociological theories of revolutions, rebellions, civil wars, and protest movements of the past and present and their relationship to significant social changes.
- 4520 Population and Society.** Three credits. Prerequisite: SOC 1010 or 2010 or permission of instructor. Examination of world and U.S. population trends and the impact of social forces on such demographic variables as births, deaths, migration, age, sex, education, and marital status and how these impact social conditions.
- 4540 Juvenile Delinquency.** Three credits. Social factors related to delinquency including family, peer-group, school, and community. Includes juvenile justice system and its agents.
- 4550 Sociology of Religion.** Three credits. Religion as social process and institution. An ideological, structural, and functional analysis. Specific U.S. religions examined in detail.
- 4560 Organizational Structures and Processes.** Three credits. Analysis of structure and processes of change, organizational environments, modes of power, ideologies, forms of control and resistance including alternatives to bureaucracy.
- 4640 Health: Organizations, Policy, and Ethics.** Three credits. (Same as SW 4640.)
- 4660 Urban and Community Studies.** Three credits. Prerequisite: SOC 1010. Focuses on the concept of community as a core idea in the historical development of sociology, concentrating on theories and historical trends of urbanization and current urban problems and policies.
- 4790 Sport and Society.** Three credits. (Same as REC 4790.) Behavioral approach to sport and leisure from the related perspectives of sociology and anthropology.
- 4800 Special Projects.** One to six credits. (Same as AS 4800.) Field experiences or reading courses through which special interests or needs of the student may be pursued under individual supervision. No more than three hours may be used in the major. Arrangements must be made with an instructor prior to registration.
- 4900 Sociology Internship.** Three to six credits. Supervised independent study in which student is placed in an organization on a contractual basis as a means of applying the principles of his/her training in preparation for eventual employment. Arrangements should be made with the intern supervisor prior to registration.

- 4980 Senior Seminar in Sociology.** Three credits. Prerequisites: At least 18 hours of sociology, including SOC 1010, 3040, 3050, 3060, and senior standing. Integrates coursework in the major through coverage of theory and method, analysis of critical issues, and applications to modern society.

Spanish [SPAN]

- 1010 Elementary Spanish I.** Three credits. A foundation course in reading, writing, speaking Spanish with an emphasis on conversation.
- 1020 Elementary Spanish II.** Second semester. Three credits. Prerequisite: SPAN 1010 or advanced placement. A continuation of materials introduced in 1010.
- 2010 Intermediate Spanish I.** Three credits. Prerequisites: SPAN 1020 or advanced placement. A review of Spanish grammar with reading and oral exercises designed to improve the ability to understand the written and spoken language.
- 2020 Intermediate Spanish II.** Second semester. Three credits. Prerequisite: SPAN 2010 or advanced placement. A continuation of 2010.
- 2105 Introduction to Latin American Studies.** Three credits. (Same as PS 2105, SOC 2105, ART 2105, ANTH 2105, GEOG 2105.) A multidisciplinary, team-taught introduction to Latin America. Covers the cultures and societies of the region: pre-history, history, geography, politics, art, languages, and literatures. Required course for all Latin American Studies minors. Does not count for Spanish major or minor.
- 3000 Group Conversational Spanish.** One credit. Prerequisite: SPAN 2010 or permission of instructor. Conducted entirely in Spanish by a native speaker and designed to improve students' ability to converse fluently. Graded Pass/Fail. May be repeated for a maximum of 3 hours credit for the major; does not count for the minor.
- 3010, 3020 Advanced Spanish.** Three credits each. Prerequisite: SPAN 2020 or equivalent. Advanced-level practice in language skills of listening, speaking, reading, and writing, including review of Spanish grammar. Native Spanish speakers should consult with instructors before enrolling.
- 3015 Contemporary Cuba.** Three credits. Prerequisite: Permission of instructor. Taught in Cuba. Explores Cuban life and culture through history, education, health, economics, politics, art, society, music, and language. Credit may not be applied toward the major or minor in Spanish but may be counted toward the minor in Latin American Studies.
- 3030 Business Spanish.** Three credits. Prerequisite: SPAN 2020 or equivalent. Native speakers should consult with instructor. The linguistic and cultural skills necessary to conduct business in a Spanish-speaking setting.
- 3040 Intensive Conversational Spanish.** Three credits. Prerequisite: SPAN 2020 or permission of instructor. Intensive conversation practice in simulated and real-life situations.
- 3050 Introduction to Hispanic Studies.** Three credits. Prerequisite: SPAN 2020 or permission of instructor. Introduction to specialized study in three areas of Hispanic studies: language, culture, and literature.
- 3060 Introduction to Hispanic Culture.** Three credits. Prerequisite: SPAN 2020 or permission of instructor. Peninsular Spanish culture

focusing on the geography, history, social institutions, values, and beliefs.

3070 Introduction to Latin American Civilizations and Cultures. Three credits. Prerequisite: SPAN 3010 or permission of instructor. Historical and cultural overview of Latin America from its early pre-Columbian origins to this region's dynamic realities in the twenty-first century.

3080 Introduction to Hispanic Literature. Three credits. Prerequisite: SPAN 3020 or permission of instructor. Acquaints students with a basic knowledge of literary criticism and theory through the study of representative works from both Spanish and Spanish-American literature.

3120 Spanish Phonetics and Pronunciation. Three credits. Prerequisite: SPAN 2020 or equivalent or instructor permission. A practical introduction to phonetic principles involved in achieving native-sounding Spanish pronunciation, including sounds, stress, intonation, and smooth speech styles. Native Spanish speakers or students with native-like Spanish pronunciation may not take this course for credit without instructor permission.

3130 Spanish Grammar and Composition. Three credits. Prerequisite: SPAN 3010, 3020, or permission of instructor. Review of major concepts of Spanish grammar and intensive practice of writing in Spanish.

3970, 3980 Cooperative Education. Three credits. Provides students with opportunities for on-the-job training in conjunction with on-campus academic experiences. Students will participate in professional growth seminars. Requirements of the department must be completed to receive credit.

3990 Study Abroad. Three to twelve credits. Prerequisites: One to two years of language study depending on the program or approval of the instructor. Students will spend at least four weeks in a Spanish-speaking country studying Spanish language, literature, and culture. Students may earn credits in study abroad programs approved by the Department of Foreign Languages and Literatures.

4010 History of the Spanish Language. Three credits. Prerequisite: SPAN 3010 completed or currently enrolled. Traces the historical development of Spanish from Latin. Students also become familiar with the characteristics of Old Spanish.

4015 Advanced Spanish Grammar. Three credits. Prerequisites: SPAN 3010 and 3020 and one other 3000-level course or permission of instructor. An in-depth study of problematic grammar structures.

4020 Spanish Literature I. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Spanish literature from its beginnings to 1700; emphasis on literary history, styles, and themes. Prose fiction and nonfiction, poetry, and drama included.

4030 Spanish Literature II. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Spanish literature from the eighteenth century to the present.

4040 Latin American Literature I. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Latin American literature from pre-Columbian times through Romanticism. Prose fiction and nonfiction, poetry, and drama included.

4045 Topics in Hispanic Cinema. Three credits. Prerequisite: SPAN 3020 or permission of the instructor. A cultural study of the peoples and societies of Latin America and Spain through film.

4050 Latin American Literature II. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Major works of Latin American literature from the late nineteenth century to the present.

4055 Cervantes' *Don Quixote*. Three credits. Prerequisite: SPAN 3080 or permission of instructor. *Don Quixote* in the social, historical, and cultural context of Spanish Renaissance literature.

4060 Special Topics in Hispanic Studies. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Topics selected from specialized fields of language, culture, or literature.

4065 Studies in Hispanic Popular Culture. Three credits. Prerequisites: SPAN 3010 and/or 3020 or permission of instructor. Context, critical analysis, and perspectives on contemporary culture studies and practices. Offers preparation for a better understanding of popular culture in Hispanic countries.

4070 Special Topics in Spanish Literature or Culture. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Topics selected from specialized areas of peninsular Spanish literature or culture.

4080 Theory and Practice of Spanish Drama. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Drama theory and participation in a theatrical production.

4090 Special Topics in Latin American Literature or Culture. Three credits. Prerequisite: SPAN 3080 or permission of instructor. Topics selected from specialized areas of Latin American literature or culture.

4900 Directed Readings in Spanish Literature and Culture. One to six credits. Prerequisites: 15 hours of Spanish or permission of instructor. Individualized intensive reading in primary and secondary sources relating to a specific topic in Spanish literature or culture.

4910 Directed Readings in Latin American Literature and Culture. One to six credits. Prerequisites: 15 hours of Spanish or permission of instructor. Individualized intensive reading in primary and secondary sources relating to a specific topic in Latin American literature or culture.

Special Education [SPED]

3010 Characteristics and Teaching of Diverse Learners. Three credits. A study of learners with disabilities as they deviate from the norm in physical, emotional, cognitive, or social characteristics. Includes meeting the needs of these learners through differentiated instruction in the least restrictive environment. (Required of all individuals who major or minor in education for state licensure.)

3210 Practicum in Special Education (Modified). Three credits. Prerequisites: Admission to teacher education; SPED 3010. Participation in a variety of educational settings with learners with high incidence disabilities. Directed laboratory experiences for a minimum of five hours per week with a weekly seminar required.

3220 Practicum in Special Education (Comprehensive). Three credits. Prerequisites: Admission to teacher education; SPED 3010. Participation in a variety of educational settings with learners with low incidence disabilities. Directed laboratory experiences for a minimum of five hours per week with a weekly seminar required.

3430 Characteristics of High Incidence Populations (Modified). Three credits. Prerequisites: Admission to teacher education; SPED 3010. In-depth study of characteristics, needs, and etiology of learners with high incidence disabilities in appropriate classroom settings.

3440 Characteristics of Low Incidence Populations (Comprehensive). Three credits. Prerequisites: Admission to teacher education; SPED 3010. In-depth study of characteristics, needs, and etiology of learners with low incidence disabilities in appropriate classroom settings.

4000 Teaching Reading to Diverse Learners. Three credits. Prerequisite: Admission to teacher education program or permission of the department. Opportunity for classroom teachers to better meet the needs of struggling readers in a variety of settings.

4120 Curriculum, Methods, and Materials for Special Education (Comprehensive). Three credits. Prerequisites: Admission to teacher education program; SPED 3440. Corequisite: SPED 4140. Development of skills in planning and implementing programs for learners with low incidence disabilities including techniques and strategies in practical applications.

4140 Techniques and Strategies for Instruction in Special Education (Comprehensive). Three credits. Prerequisites: Admission to teacher education; SPED 3440. Corequisite: SPED 4120. A practical application of techniques and strategies for teaching learners with low incidence disabilities. Includes teaching technique, theories and approaches, data collection, and environmental management.

4150 Techniques, Methods, and Materials in Special Education (Modified). Three credits. Prerequisites: Admission to teacher education; SPED 3430. The practical application of special education techniques and methods for teaching learners with low incidence disabilities. Includes curriculum planning, methods and materials, data collection, and environmental management for learners with low incidence disabilities.

4160 Educational Assessment of Exceptional Learners. Three credits. Prerequisites: Admission to teacher education; SPED 3430 or 3440. Selection and administration of standardized tests and subtests for the specific purpose of planning an effective instructional program. Includes information gathering techniques, evaluation of this information in selection of tests, and interpretation of information and test scores.

4170 Strategic Teaching and Learning in Secondary Special Education (Modified). Three credits. Prerequisites: SPED 3010, 3430; admission to teacher education program. Learning strategies instruction and the use of content enhancement routines in inclusive settings with diverse learning populations. Includes metacognitive strategies, development, and application of strategic instruction.

4240 Methods and Techniques of Behavior Management. Three credits. Prerequisites: Admission to teacher education; SPED 3010. An overview of various approaches to behavior management and their application in a variety of environments.

4250 Education in the Affective Domain. Three credits. Prerequisites: Admission to teacher education program or permission of department; SPED 3010 and 3430. Origins of emotional/social problems in learners with disabilities and strategies for promoting positive social/emotional outcomes for these learners in schools.

4260 Problems in Special Education. One to three credits. A problem-oriented course, on or off campus, planned and designed for individuals, a school faculty, school system, or other professional groups. Will provide opportunities for pre- or in-service education related to assessed needs.

4280 Assistive Technology in Special Education. Three credits. Prerequisites: SPED 3010, 3430 or 3440, and admission to teacher education program or permission of department. Technology—low

tech and high—and how it applies to the needs of school-aged learners with disabilities. Assessing and supporting these needs through the delivery of assistive technology.

4320 Directed Teaching in Special Education (Comprehensive). Twelve credits. Full-day supervised teaching experience of 15 weeks duration in a public school setting. Pass/Fail.

4350 Directed Teaching in Special Education (Modified). Twelve credits. Full-day supervised teaching experience of 15 weeks duration in a public school setting. Pass/Fail.

4360 Directed Teaching in Special Education (Speech and Hearing). Twelve credits. Full-day supervised teaching experience of 15 weeks duration in a public school setting. Pass/Fail.

4380 Collaboration/Consultation. Three credits. Prerequisites: SPED 3010, 3430, 3440; admission to teacher education program. Examines ways the special educator/consultant interacts with general educators, educational systems, communities, families, and learners to create appropriate educational services for exceptional learners. Examines group processes, human behavior related to interaction, and the provision of skills and knowledge critical to effective collaboration and consultation with others about the education of learners with special needs.

4510 Teaching Internship, Special Education. Nine credits. Supervised teaching available only for those with at least one year of paid teaching experience in the major in which endorsement is sought. Applicants must meet all prerequisites for student teaching in Special Education. Pass/Fail.

Statistics [STAT]

3150 Mathematical Statistics I. Three credits. Prerequisite: Two semesters of calculus. Probability theory including basic probability laws, properties of distributions, mathematical expectation, special discrete and continuous distributions, functions of random variables, and selected applications.

4190 Mathematical Statistics II. Three credits. Prerequisite: STAT 3150 or equivalent. Theory of statistical inference. Topics include sampling distributions, decision theory, estimation, test of hypothesis, regression analysis, analysis of variance, and selected applications.

4200 Statistical Methods for Forecasting. Three credits. Prerequisite: STAT 4190. Topics include application of regression models in forecasting and exponential smoothing methods to forecast non-seasonal time-series, seasonal series, and globally constant seasonal models; stochastic time series models; and forecast evaluation.

4280 Undergraduate Research. One to four credits. Prerequisite: Permission of department. Independent investigation of a selected research problem under the guidance of a faculty member resulting in an oral and written report of results. May be repeated for a maximum of four credits.

4320 Probability and Stochastic Processes. Three credits. Prerequisites: Two semesters of calculus and STAT 3150 (or MATH 2050) or consent of instructor. Theoretical basis for stochastic processes and their use as models of real-world phenomena. Topics include Markov chains, Poisson processes, Brownian motion and stationary processes. Applications include Gambler's Ruin, birth and death models, hitting times, stock option pricing, and the Black-Scholes model.

4360 Regression Analysis. Three credits. Prerequisite: MATH 2050 or QM 3620. Theory and application of regression models. Ap-

proaches to model building and data analysis. Computation and interpretation of results facilitated through the use of statistical software packages.

4370 Nonparametric Statistics. Three credits. Prerequisite: MATH 2050 or equivalent. Statistical tests that require no assertions about parameters or about the form of the population from which the samples are drawn. A wide range of practical problems studied.

4380 Experimental Design. Three credits. Prerequisite: MATH 2050 or QM 3620. Topics include one-way analysis of variances, multiple comparison, multifactor analysis of variance, and various practical issues in experimental design. Computation and interpretation of results facilitated through the use of statistical software packages.

4600 Problems in Statistics. One to six credits. Prerequisites: Senior standing and consent of instructor. Students wishing to enroll must submit a written course/topic proposal to the department prior to the semester in which STAT 4600 is taken. Proposal must be approved prior to taking the course. At the conclusion, each enrollee must submit a written report to the department.

Textiles, Merchandising, and Design [TXMD]

1110 Basic Design. Three credits. Experience in design fundamentals and problem solving. Analysis, experiments, and application of the elements and principles of design as they relate to the fashion industry. Five contact hours per week.

1170 Introduction to the Fashion Industry. Three credits. How the fashion world operates from planning stages to consumer. Emphasis on production and distribution of fashion goods, current trends, and technological developments.

2110 Fashion Forecasting. Three credits. Prerequisites: TXMD 1110 and 1170. Explores forecasting frameworks and theories for explaining fashion dynamics. Application of forecasting techniques to project future change.

2170 Clothing I. Three credits. Prerequisites: TXMD 1110 and 1170. Fundamental clothing construction processes necessary for advanced work in clothing, including sewing machine operation. Basic garment construction from a commercial pattern and quality standards. Five contact hours per week. Offered once a year.

2180 Textiles I. Three credits. Prerequisites: TXMD 1110 and 1170. An overview of the textile industry including fibers, yarns, fabric construction, dyeing/printing techniques, and finishes. Emphasis placed on the selection of textile products in relation to end use. Includes labwork involving physical testing. Four contact hours per week.

2181 Textiles I Lab. Zero credits.

2320 Clothing II. Three credits. Prerequisite: TXMD 1110, 1170, 2170. Poses fashion problems to be solved with an emphasis on fitting and finishing. A series of half-scale sample exercise projects will be completed, as well as full-scale garments. Explores use of and development of wearable art as an aid in developing design concepts. Five contact hours per week. Offered once a year.

3110 Fashion Promotion. Three credits. Prerequisites: TXMD 1110 and 1170. An overview of the sales promotion process in relation to the fashion industry; emphasis on advertising, visual merchandising, special events, and fashion show production. Offered once per year.

3120 Textiles II. Three credits. Prerequisites: TXMD 1110, 1170, 2180/2181. An overview of quality control using state-of-the-

art textile testing equipment. Analysis of fibers and fabrics with emphasis on labwork involving chemical and physical testing. Correlation of test results in predicting fabric performance in relation to end use. Four contact hours per week.

3150 Apparel Selection and Evaluation. Three credits. Prerequisites: TXMD 1110, 1170, and 2180/2181. An overview of the apparel industry structure and the functions of each division. Emphasis on recognizing quality in relation to fabrication, construction, and design of garments. No construction involved.

3170 Fashion Branding. Three credits. Prerequisite: TXMD 1110 and 1170. Principles underlying the fashion process and the study of fashion branding. Special emphasis on the dissemination of fashion throughout the world market and to the fashion designers and business leaders in the fashion world today.

3220 Patternmaking I. Three credits. Prerequisites: TXMD 1110, 1170, 2170, and 2320. Adaptation of commercial sloper patterns to individual proportions, pattern designing and application of principles of design to apparel designing. Five contact hours per week. Offered once a year.

3320 Patternmaking II. Three credits. Prerequisites: TXMD 1110, 1170, 2170, 2320, 3220. Advanced apparel design techniques including patterning, draping, drafting, grading, and marker development via manual and computerized techniques. Five contact hours per week. Offered once a year.

3370 Fashion Illustration. Three credits. Prerequisites: TXMD 1110, 1170, 2180/2181, and either 3150 or 3220. An overview of fashion illustration techniques allowing skill development of the fashion croquis and garments using various media techniques to communicate fashion ideas, moods, and details. Five contact hours per week. Offered once a year.

4140 Apparel Manufacturing and Sourcing. Three credits. Prerequisites: TXMD 1110, 1170, 2180/2181, and 3150. Overview of textiles/apparel industry processes from raw material to consumption for apparel and other consumer products. Examines production and marketing of products, technological developments, domestic and global market strategies, and environmental practices via field trips.

4150 Fashion Buying. Three credits. Prerequisite: TXMD 1110, 1170. Principles of marketing, retailing, and sales as they apply to the merchandising of fashion goods. Special emphasis on fashion buying, planning, control, and computer applications for apparel businesses.

4170 Social Aspects of Clothing. Three credits. Prerequisites: TXMD 1110 and 1170. The interaction of sociological, psychological, economic, and cultural implications of clothing and textiles.

4180 History of Fashion. Three credits. Survey of clothing and design from ancient to modern periods; consideration given to social, economic, and cultural conditions reflected in dress and the application to today's fashion industry.

4220 Computer-Aided Apparel Design I. Three credits. Prerequisites: TXMD 1110, 1170, 2180/2181, 3200, and 3370. Computer-aided design applications related to the apparel and textile industries. Design problem identification; development and application of design problem solving processes. Uses Adobe Photoshop and Illustrator. Five contact hours per week. Offered once a year.

4320 Computer-Aided Apparel Design II. Three credits. Prerequisites: TXMD 1110, 1170, 2180/2181, 3220, 3370, and 4220. Provides opportunity to develop advanced skills using state-of-the-art CAD software. Focuses on developing textile and apparel activities ap-

plicable within the industry today. Students will investigate career opportunities and develop a portfolio containing applicable design projects and business forms. Five contact hours per week. Offered once a year.

4370 Advanced Fashion Illustration. Three credits. Prerequisite: TXMD 3370. Further exploration of the color rendering begun in TXMD 3370. Students use markers and colored pencils for graphic depiction of garment silhouette, textiles, details, and mood. Five contact hours per week.

Theatre [THEA]

1030 Theatre Appreciation. Three credits. Overview of theatre as an art form. Appreciation and understanding of the production process. **Can be used to satisfy part of the General Education Humanities and/or Fine Arts requirement.**

1900 Production Practicum I. One credit. Prerequisite: Permission of instructor. Specific area of study in relation to a particular theatrical event or production during a given semester. Topics range from the performance to technical crews. Students may take up to four times, but only one hour will count towards graduation.

1910 Production Practicum for the Governor's School for the Arts. Three credits. Prerequisite: Permission of instructor. For students involved with the Tennessee Governor's School for the Arts. Designed to give experience in specific areas of theatre study while students prepare for the Finale production. Topics range from performance to technical crews.

2100 Introduction to Production Practices. Three credits. Prerequisite: Theatre majors. Corequisite: THEA 2900. Lectures and seminars in the techniques of planning, building, painting, and handling all types of scenery; knowledge of theatre architecture and how sets are mounted, shifted, and run. Laboratory hours and/or crew required.

2110 Stagecraft. Three credits. Lectures and practical experience in the techniques of planning, building, painting, and handling all types of scenery; knowledge of theatre architecture and how sets are mounted, shifted, and run. Laboratory hours and/or crew required.

2500 Fundamentals of Acting. Three credits. The mechanics of acting in terms of physical movement body control and character-building techniques.

2900 Production Lab. One credit. Corequisite: THEA 2100. Examines the execution of the various scenic elements covered in THEA 2100 as well as the safety requirements of the scene shop and its equipment.

3000 Sound Design for Arts and Entertainment. Three credits. Theory and practice of theatrical sound designers conducted through classroom lecture and practical project. Utilizes tools, equipment, and techniques of sound designers with emphasis on design process and critical methods of study. Technical performance production component expected. Laboratory hours required.

3100 Make-Up Techniques for Performers. Three credits. Application of make-up techniques and concepts for performers in theatre, television, film, dance, opera, and other performing arts. Laboratory hours and/or crew requirement.

3200 Introduction to Costume for Arts and Entertainment. Three credits. Overview of costume in the arts and entertainment; an orientation to costume, design, management, technology, wardrobe practices, and costume critique methods through projects

developed through research, problem-solving, and documentation; focus on student career and portfolio development. Laboratory hours and/or crew requirement.

3300 Scene Design. Three credits. Prerequisite: THEA 2110 or permission of instructor. Lectures and practical experience in planning and designing settings for the stage. Emphasis on forms and styles of scenery, historical period research designers, and new theatrical materials, methods, and techniques. Major projects in set design. Laboratory hours and/or crew requirement.

3310 Technical Drawing for Arts and Entertainment. Three credits. Prerequisite: THEA 2110 or permission of instructor. Lectures and projects in all phases of technical drawing for the theatre and related arts and entertainment disciplines. Developing technical drawing skills needed for scenic, lighting, and technical direction areas using both manual and CAD techniques. Purchase of supplies necessary.

3400 Introduction to Lighting for Arts and Entertainment. Three credits. Prerequisite: THEA 2110 or permission of instructor. Lectures and practical experience in the methods and techniques of lighting for the stage. Emphasis on developing plots through knowledge of electricity, circuitry, instrumentation, and control equipment. Major projects in lighting design. Laboratory hours and/or crew requirement.

3500 Stage Movement. Three credits. A theoretical and practical study of stage movement. Styles and techniques for physical realization of character and performance.

3510 Scene Preparation. Three credits. Prerequisite: THEA 2500 or permission of instructor. Provides opportunity for advanced study in acting with emphasis on techniques, analysis, and methods of developing a character through scene preparation while utilizing various genres of theatre.

3520 Voice for the Actor. Three credits. Development of vocal technique for acting. Integrates exercises to develop an awareness of the vocal instrument and physicality required for producing a healthy vocal sound. Examines common vocabulary for discussion of vocal technique used with directors, coaches, teachers, and other actors. Involves a significant component of physical activity.

3600 Child Drama. Three credits. Methodology for using theatre and theatre techniques for teaching children in various venues. Motivational, self-directed learning through creative drama, improvisation, role-playing, and theatre games.

3700 Fundamentals of Play Directing. Three credits. Prerequisite: THEA 2500 or permission of instructor. Director as literary analyst and production critic. Play analysis, production concepts, staging, theory and techniques; rehearsal methods and procedures. Scene work.

3800 Introduction to Arts Management. Three credits. (Same as ORCO 3800.) Prerequisite: Junior standing or permission of instructor. Management of a not-for-profit arts organization. Topics include organizational design, strategic planning, budgeting, marketing, and fundraising within the context of a visual or performing arts organization. Guest lecturers from regional arts organizations. Projects and discussion for individual interests in various arts disciplines. Laboratory hours required and/or crew requirement.

3810 Stage Management. Three credits. Prerequisite: Junior standing or permission of instructor. Explores the role and function of the stage manager in creating live theatre. Focuses on the duties, terminology, and required skills and traits of an effective stage manager. Laboratory hours required and/or crew requirement.

- 3820 Script Analysis.** Three credits. Analysis of plays for the purposes of directing, designing, or acting in productions. Theatre majors preferred.
- 3870 Women in Theatre.** Three credits. Women's representation and participation in Western theatre from ancient Greece to the present.
- 3900 Production Practicum III.** One credit. Prerequisite: Permission of instructor. Specific area of study in relation to a particular theatrical event or production during a given semester. Topics range from the performance to technical crews. Students may take up to four times, but only two hours will count towards graduation.
- 3910 Internship in Theatre.** One to three credits. Prerequisites: Minimum cumulative GPA of 2.5, successful completion of 15 credit hours (not including THEA 3900/4900), and permission of department. Students undertake supervised work experiences in a professional theatre setting and/or in arts education organizations. Experiences offered to enhance student's understanding and development of skills for work in the profession. Paper-based projects also required.
- 4000 Advanced Sound Design for Arts and Entertainment.** Three credits. Prerequisite: THEA 3000. Advanced studies, theories, and practices of theatrical sound design with a strong emphasis on the design process and critical methods of study used in this specialized field. Additional focus placed on student career and portfolio development in this field.
- 4090 Topics in Sound for Arts and Entertainment.** Three credits. Prerequisite: THEA 3000, 4000, or permission of instructor. Designed to meet individual needs for advanced study in sound for entertainment and the arts. Topic to be determined at time of scheduling. A maximum of 6 semester hours may be applied toward a degree.
- 4100 Special Effects Make-Up.** Three credits. Prerequisite: THEA 3100 or permission of instructor. Orientation to special effects make-up design, techniques, and design realization through make-up projects and research for various performance venues with a focus on student career and portfolio development.
- 4110 Make-Up Design and Creation.** Three credits. Prerequisites: THEA 3100 or permission of instructor. Designed to meet individual and group needs; an intensive application of make-up design incorporating all aspects of make-up in the performing arts focusing on in-depth historical research, advanced techniques, hair/wig design, creative problem-solving, and portfolio and resume development. Laboratory hours required.
- 4190 Topics in Make-up for Arts and Entertainment.** Three credits. Prerequisites: THEA 3100, 4100, 4110, or permission of instructor. Designed to meet individual needs for advanced study in make-up for entertainment and the arts. Topics to be determined at time of scheduling. A maximum of 6 semester hours may be applied toward a degree.
- 4200 Costume Technology and Production.** Three credits. Prerequisite: THEA 3200 or permission of instructor. Incorporates all aspects of costume production in the performing arts, focusing on research techniques, historical reproduction methods, construction design, resource management, problem-solving, and portfolio and resume development. Laboratory hours required.
- 4210 Advanced Costume Technology and Production.** Three credits. Prerequisite: THEA 4200 or permission of instructor. Designed to meet individual and group needs; an intensive application of costume technology in the performing arts focusing on in-depth research, methods, construction design, management, problem-solving, and portfolio and resume development. Laboratory hours required.
- 4220 Costume Design for Arts and Entertainment.** Three credits. Prerequisite: THEA 3200 or permission of instructor. Costume design in the performing arts; an orientation to the costume application of design and development principles through costume design projects developed through research for various performance venues with a focus on student career and portfolio development.
- 4230 Advanced Costume Design for Arts and Entertainment.** Three credits. Prerequisite: THEA 4220 or permission of instructor. Designed to meet individual and group needs for advanced study and principles in theatrical costume design. Projects developed through in-depth research for various performance venues with a focus on student career and portfolio development.
- 4280 Topics in Costume for Arts and Entertainment.** Three credits. Prerequisites: THEA 3200, 4200, 4210, or permission of instructor. Designed to meet individual needs for advanced study in costume for entertainment and the arts. Topic to be determined at time of scheduling. A maximum of 6 semester hours may be applied toward a degree.
- 4290 Problems in Theatre.** One to three credits. Prerequisite: Permission of instructor. Designed to meet individual and/or group needs in all aspects of theatre arts. Topic and credit to be determined at the time of scheduling. A maximum of 6 semester hours credit may be applied toward a degree.
- 4300 Advanced Scenic Design.** Three credits. Prerequisites: THEA 2110 and 3300 or permission of instructor. Advanced methods and theories of scenic design. A strong emphasis on practical projects, the design process, and critical methods of study. Includes components on design history and theory/criticism.
- 4390 Topics in Scenography.** One to three credits. Prerequisites: THEA 2110 and permission of instructor. Designed to meet individual and group needs for advanced study in theatre. Topic to be determined at time of scheduling. A maximum of 6 semester hours credit may be applied toward a degree.
- 4400 Intermediate Lighting for Arts and Entertainment.** Three credits. Prerequisite: THEA 3400 or permission of instructor. Advanced methods and theories of lighting design. Strong emphasis on practical projects, design process, and critical methods of study. Includes components on design history and theory/criticism.
- 4480 Advanced Lighting Practicum for Arts and Entertainment.** Three credits. Prerequisites: THEA 3400, 4400, or permission of instructor. Theory and practice of lighting design for arts and entertainment. Extensive practical and realized projects that utilize the tools, equipment, and techniques of the lighting designer with an emphasis on the design process and critical methods of study. Laboratory hours required.
- 4490 Topics in Lighting for Arts and Entertainment.** Three credits. Prerequisite: THEA 3400, 4400, 4480, or permission of instructor. Designed to meet individual needs for advanced study in lighting for entertainment and the arts. Topic to be determined at time of scheduling. A maximum of 6 semester hours may be applied toward a degree.
- 4500 Character Development.** Three credits. Prerequisite: THEA 2500 or permission of instructor. The development of advanced skills in the ability to analyze and interpret the more complex characters in drama. Study of classical acting styles.

- 4560 Auditioning.** Three credits. Prerequisites: THEA 2500, 3510, and 4500 or permission of instructor. Students will prepare auditions from a variety of genres. Designed to help students understand, appreciate, and execute various types of auditions used in the profession.
- 4570 The Body Intelligent: A Study of the Alexander Technique.** Three credits. (Same as MUS 4570.) For those interested in improving ease and freedom of movement, balance, support, flexibility, and coordination in daily activity.
- 4580 Styles of Acting.** Three credits. Prerequisites: THEA 2500, 3510, and 4500 or permission of instructor. Various styles of acting throughout history. Topics to be determined at time of scheduling. A maximum of nine credit hours may be applied toward a degree.
- 4600 Storytelling.** Three credits. Instruction and experience in the art of storytelling. Individually designed course requirements for educational, professional, corporate, and personal storytelling techniques.
- 4610 Theatre in Education.** Three credits. For current and prospective teachers. Integration of drama across the curriculum. The creation, construction, performance, and touring of a play for elementary school children.
- 4620 Drama Across the Curriculum: Practicum.** Three credits. Prerequisite: THEA 3600 and/or permission of department. Advanced techniques and methods for teaching core curriculum in upper elementary classes using drama and role-playing. Practicum experiences provided.
- 4690 International Studies in Theatre.** Three credits. A short-term international theatre experience designed to broaden international and cultural awareness and to promote international theatrical exchanges. Class may be repeated for up to six credit hours if destination is the same country or up to a total of nine credit hours if the country designation varies.
- 4700 Advanced Play Directing.** Three credits. Prerequisite: THEA 3700. Case studies and problem solving of rehearsals and production. Director's relationship with designers. Investigation of style. Rehearsal and presentation of a one-act play.
- 4800 Theatre History I: Greek Period to Restoration.** Three credits. Prerequisite: Junior or senior standing or permission of instructor. The development of drama and the theatre; critical study of representative plays of the period.
- 4810 Theatre History II: Restoration to Present.** Three credits. Prerequisite: Junior or senior standing or permission of instructor. The development of drama and the theatre; critical study of representative plays of the period.
- 4820 Playwriting.** Three credits. Prerequisite: Permission of department. Theory and practice in the creation of original plays. Development and revision of original scripts while studying the methods and works of influential playwrights.
- 4830 Advanced Playwriting.** Three credits. Prerequisite: THEA 4820. Further application of dramatic structure through writing, reading, responding, and revising workshop format.
- 4850 Development for Arts Organizations.** Three credits. (Same as ORCO 4850.) Prerequisite: Junior standing or permission of instructor. Development of not-for-profit arts organizations. Focuses on comprehensive approaches to fundraising. Includes not-for-profit arts organizations, board structures, and the terminology and tools of the fundraising profession. Ideal for future artist, not-

for-profit manager, or those interested in fundraising. Laboratory hours required.

- 4890 Topics in Playwrights and Dramatic Theory.** Three hours. Prerequisite: THEA 4800 or 4810 or permission of instructor. Selected major playwrights linked by theme or a particular genre of dramatic theory; an intensive examination of plays which either survey playwrights' careers or represent a significant portion of a genre's canon. May be repeated for credit once.
- 4900 Production Practicum IV.** One credit. Prerequisite: Permission of instructor. Specific area of study in relation to a particular theatrical event or production during a given semester. Topics range from the performance to technical crews. Students may take up to four times, but only two hours will count towards graduation.
- 4950 Directed Studies.** Three credits. Prerequisites: Available only to students in Speech and Theatre who have completed 50 percent of the coursework in the Theatre concentration and have an overall GPA of 3.2 for their last 30 hours of study; permission of department required. Proposals must be submitted and approved by theatre and dance faculty the semester prior to the beginning of the semester of enrollment. Individualized intensive instruction for students to pursue research and creative activity in a specialized area with faculty mentorship.
- 4990 Senior Seminar.** Three credits. Prerequisite: Theatre majors only; successful completion of 75 credit hours and permission of department. A capstone to the Theatre major's undergraduate career and preparation for transition to the professional theatre or graduate study. Includes lectures, workshops, professional guest speakers, and discussion sessions. Students will complete various paper-based projects including a senior project, resume, and portfolio construction.

Transportation [TRNS]

- 1610 Introduction to Transportation.** Three credits. Transportation development, identification, and evaluation of the elements of the transportation system including historical, legislative, and trend analysis. Fall only.
- 2620 Transportation Freight Systems.** Three credits. An overview of cargo systems and transportation freight rates. Includes an analysis of transportation issues and the relationship between the shipper, the modes of transportation, and the consumer. Spring only.
- 3630 Transportation Systems.** Three credits. Prerequisite: TRNS 1610 or 2620 or permission of instructor. An overview of the structure and management of a logistics distribution system. Distribution logistics as a function area and as a strategic element of the total transportation system. Fall only.
- 4640 Topics in Transportation.** Three credits. Prerequisites: TRNS 3630 and senior standing. Capstone course for students selecting the transportation management focus within Aerospace Administration. Individually directed course on a selected topic in transportation. Topics include regional, domestic, or global factors impacting the transportation industry. Covers the elements of a transportation system, historical development, legislation, and significant trends

University Honors [UH]

- 3000 University Honors Lecture Series.** One credit. A series of weekly one-hour lectures designed to stimulate thought and broaden the student's knowledge in a variety of fields. May be repeated for up to 3 hours credit. Pass/Fail.

- 3001 Honors Service Learning Practicum.** One to three credits. Prerequisite: Permission of instructor. Opportunity to take part in service learning projects with community or on-campus partners. Pass/Fail. (May be repeated once for a total of three credits.)
- 3200 Visiting Artist's Seminar.** One credit. Prerequisites: Sophomore standing and maintenance of a 3.25 GPA. An intensive workshop/seminar in one artistic form. The instructor will be a visiting artist whose course topic will depend on his or her field of experience.
- 3500 Junior Interdisciplinary Seminar.** Three credits. (May be taken more than one time as topics change.) Introduces students to the political, social, economic, scientific, artistic, and/or humanistic aspects of culture, using an interdisciplinary approach. See class schedule for current semester's topic.
- 4010 MTSU Institute of Leadership Excellence.** Three credits. Prerequisites: Permission of instructor; 3.0 cumulative GPA; must have completed 60 credit hours by start of course. An intensive learning experience in leadership excellence. Involves significantly more clock hours than the typical three-credit-hour course but offers a remarkably unique experience. The institute has three primary objectives: academic study of leadership theory and practice, with an emphasis on application; extensive exposure to accomplished leaders; and completion of a substantial student project, a part of which will be a personal action plan for leadership growth. Participants must be prepared to attend morning, afternoon, and evening sessions for three weeks during May term.
- 4600 Senior Interdisciplinary Seminar.** Three credits. (May be taken more than once as topics change.) Examines humanistic ideas. Reading materials drawn from literature, history, philosophy, science, art, and/or any other areas relevant to the semester topic. See online or RaiderMT class schedule for current semester's topic.
- 4900 Honors Thesis Tutorial.** One credit. Designed to guide students and their advisors in the completion of an Honors thesis. Specific objectives include choosing and narrowing an appropriate topic, collecting a working bibliography, preliminary reading, and writing a thesis proposal. Pass/Fail.
- 4950 Honors Independent Research.** Three to nine credits. (Only 3 credit hours may be counted toward the 31-hour requirement.) Interdisciplinary research for the advanced Honors student. Research proposals must be approved by the Honors Council the semester prior to the study.

University Seminar [UNIV]

- 1000 English Language Seminar.** One credit. Reserved for participants in the English Language School and not for degree-seeking students. Credits not applicable to a degree program; elective credit only. May repeat up to 6 hours. Pass/Fail.
- 1010 University Seminar.** Three credits. Provides information to ease the transition to college during the first semester on campus. Helps student develop strategies for a successful college career.
- 2020 Successful Transitions.** One credit. A seminar for transfer students. Facilitates successful transition to the University through group interaction and collaboration, goal setting, self-management, and accessing campus resources.
- 4010 MTSU Institute of Leadership Excellence.** Three credits. Prerequisites: Permission of instructor; 3.0 cumulative GPA; must have completed 60 credit hours by start of course. An intensive learning experience in leadership excellence. Involves significantly more clock hours than the typical three-credit-hour course but offers a remarkably unique experience. The institute has three primary objectives: academic study of leadership theory and practice, with an emphasis on application; extensive exposure to accomplished leaders; and completion of a substantial student project, a part of which will be a personal action plan for leadership growth. Participants must be prepared to attend morning, afternoon, and evening sessions for three weeks during S1–May Term.
- 4380 Independent Study.** One to six credits.

Women's Studies [WMST]

- 2100 Introduction to Women's Studies.** Three credits. Designed to inform and enlighten students about the lives and history of diverse women and the social construction of gender. Areas of study may include work, the family, health, sexuality, violence in women's lives, images of women, and feminist activism. **Required for all Women's and Gender Studies minors.**
- 2500 Women and Leadership.** Three credits. An exploration of the concepts of leadership and followership through historical, contemporary, and personal perspectives as they apply to women. Provides an opportunity to examine, evaluate, and enhance personal leadership skills. WMST 2100 is recommended as a prerequisite but not required.
- 3000 Women's Leadership Conference Practicum A.** Three credits. Prerequisites: WMST 2100 and permission of instructor. WMST 2500 recommended but not required. Theory and concepts of women's leadership through participation in major women's conference. Provides an opportunity to engage in creative planning, decision-making, and collaborative and experiential learning and to assume significant responsibility for conference related to women's issues. No more than 6 hours of practicum and independent study may count toward the Women's and Gender Studies minor.
- 3001 Women's Leadership Conference Practicum B.** Three credits. Prerequisites: WMST 2100, 3000, and permission of instructor. WMST 2500 recommended but not required. Theory and concepts of women's leadership through participation in major women's conference. Provides an opportunity to engage in creative planning, decision-making, and collaborative and experiential learning and to assume significant responsibility for conference related to women's issues. No more than 6 hours of practicum and independent study may count toward the Women's and Gender Studies minor.
- 3500 Women in the Media.** Three credits. Prerequisites: WMST 2100 and 1000- and 2000-level English requirements or permission of instructor. Women in popular/mass media. Emphases include images of women in the media; women as producers and consumers of media; the intersections of gender, race, and class in the media; comparative global images and issues; and feminist approaches to media study.
- 3900 Women and Globalism.** Three credits. Prerequisites: WMST 2100 and ENGL 1020 or ANTH 2010. Introduces the most relevant issues affecting women globally. Focused survey of the experiences of women around the world. Exposes students to transnational examples and critical ways of thinking about poverty, violence, and resistance. Seeks to further understanding of the global dimensions of gender, race, class, and sexuality.
- 4201–Symposium in Women's Studies.** Three credits. Prerequisite: **4213** WMST 2100 or permission of instructor. Additional prerequisites may apply to individual courses within the series. A variable-content course highlighting contributions of women to various fields and disciplines and exploring special problems

which may be encountered by women. Specific courses include:

- 4201 Women and Spirituality
- 4202 Lesbian Studies
- 4204 Women and Television
- 4205 Women and Science
- 4206 Women and the Holocaust
- 4207 Women and the Social Construction of Illness
- 4209 Desire in History and Literature
- 4210 Ecofeminism
- 4211 Asian-American Women's Literature and Culture
- 4212 Multicultural Women's Voices
- 4213 Gender and Horror

4500 Feminist Theory. Three credits. Prerequisites: WMST 2100 and junior standing or permission of instructor. Major voices, texts, and ideas in the field of feminist theory from the early seventeenth century through the present within the contexts of a variety of critical discourses and emergent critical fields. Intended as a capstone for the minor. **Required for all Women's and Gender Studies minors.**

4900 Independent Study. Three credits. Prerequisite: Permission of instructor. A variable-content course examining a topic within the study of women and gender not covered in depth in other Women's and Gender Studies courses. Student develops project, conducts research, and confers regularly with the instructor. Student must submit a formal project proposal to be approved by the Women's Studies Program's Independent Studies Committee at least one semester prior to enrolling for WMST 4900 (Not offered during Summer terms. Please consult the Women's Studies Web site for more information.) **May be taken for credit no more than twice.**

Youth Education [YOED]

3500 Instructional Design for Critical Thinking. Three credits. Prerequisites: FOED 1110 and 2110; admission to teacher education program. Focuses on practical application, including some practice of multiple teaching strategies designed to foster critical thinking skills. Students will teach mini-lessons and engage in micro-teaching episodes. Teaching assignment in a public school required.

4000 Managing the Classroom for Instruction. Three credits. Prerequisite: Admission to teacher education program. Course will be taken in conjunction with YOED 4110/5110. Introduction, examination, and practice in multiple models and approaches to classroom management and discipline. Analysis and interpretation of related research. Application of principles and procedures in classroom management to school and classroom settings. Field experience in a public school required.

4110 Directed Teaching, Grades 7–12. Nine or twelve credits. Prerequisites: All required professional education courses; appropriate special methods course(s); senior standing, minimum grade point average of 2.50 overall and in the teaching major; admission to teacher education. A full-day, full-semester supervised teaching experience in a public school classroom. Pass/Fail.

4510 The Teaching Internship, Grades 7–12. Nine credits. Supervised teaching available only to those with at least one year of paid teaching experience in the major in which endorsement is sought. Applicants must meet all prerequisites for directed teaching.

