

applying intervention strategies to several of the currently most prevalent types of crisis in the human experience. In addition, this course considers the importance of the personhood of the worker and crises that may occur in the human service workplace. (Same as PSYC 343) *One semester; three credits*

CJ 362. SOCIOLOGY OF ADDICTION

(Same as SOC 362) Prerequisite: SOC 101. *One semester; three credits*

CJ 365. DEVIANT BEHAVIOR

An exploration of theoretical perspectives on deviance, problems in defining deviance and specific categories of deviance. Deviant behaviors discussed may include but are not limited to prostitution, gambling, transsexualism, pornography, mental illness, physical disability, homosexuality, alcoholism, and drug abuse. (Same as PSYC 365 and SOC 365) *One semester; three credits*

CJ 370. APPLICATIONS OF MEMORY

An examination of the application of memory in such diverse areas as courtroom testimony (e.g. factors influencing witnesses, hypnosis, repressed memory, false memory, voice identification), memory for everyday events, memory aids, and advertising. The relevant theories and research in each are examined. Prerequisite: PSYC 105. (Same as PSYC 370 and SOC 370) *One semester; three credits*

CJ 380-387. SELECTED TOPICS IN CRIMINAL JUSTICE

Directed work on a special topic or project in criminal justice. *One semester; one to three credits*

CJ 401. CONSTITUTIONAL LAW

(Same as POLS 471) Prerequisite: POLS 112 or HIST 151 or Permissions of the department chair. *One semester; three credits*

CJ 455. CORRECTIONAL COUNSELING

This course is designed to present some of the counseling and treatment techniques that are available to assist correctional workers toward assisting the offender to establish a satisfying lifestyle that conforms to the regulations as well as protecting the community from harmful activity by offenders placed under the correctional workers' supervision. (Same as PSYC 455) *One semester; three credits*

CJ 480-487. ADVANCED TOPICS IN CRIMINAL JUSTICE

Directed work on a special topic or project in criminal justice. *One semester; one to three credits*

■ ECONOMICS COURSES

ECON 214. PRINCIPLES OF MICROECONOMICS (Formerly ECON 212)

Attention is focused on the micro concept of economic analysis, and primary attention given to the theory of the firm and partial equilibrium problems arising within any enterprise economy. Attention is also given to government regulation of business, the theory of income distribution as it pertains to the determination of wages, rents and profits, and international trade. *One semester; three credits*

ECON 215. PRINCIPLES OF MACROECONOMICS (Formerly ECON 211)

This course focuses attention on the aggregate or macroeconomic relationships and gives attention to the central problems of economic organization, the functioning of the price system, the economic role of government, the determination of national income, employment, the rate of inflation, and fiscal and monetary policy. Further, the student is introduced to the interactions between aggregate markets such as the product market, the factor/labor market, and the money market. Prerequisite: ECON 214. *One semester; three credits*

ECON 303. MONEY AND BANKING

A general survey of credit and credit instruments, activities and policies of financial institutions such as commercial and savings banks, the Federal Reserve System, and investment banks. Study of the place of money in modern economic life, including its relation to prices, employment, and business activity. Prerequisites: ECON 214, 215. *One semester; three credits*

ECON 343. INTERMEDIATE MACROECONOMICS

The theory of national income and employment, analysis of aggregate demand, the general degree of utilization of productive resources and the general level of prices as well as related questions of policy. Prerequisites: ECON 214, 215. *One semester; three credits*

ECON 344. INTERMEDIATE MICROECONOMICS

A study of basic economic theory as it pertains to the individual economic units of a society, a study of the tools which are used in analyzing these units. Price determination, market analysis, and resource allocation are stressed. Prerequisites: ECON 214, 215. *One semester; three credits*

ECON 420. MANAGERIAL ECONOMICS

This course focuses on the application of economics theory to the problems and decisions faced by business managers in a market-oriented economy. The economic aspects of business departments such as marketing, finance, accounting, and law are explored and integrated into the applicable economic theories and models. Thus, in a very general sense, this course attempts to provide the student with a method of looking at the world of microeconomics through the eyes of an economist and from the perspective of a business person. Prerequisites: ECON 214, 215. Offered in the Spring semester. *One semester; three credits*

ECON 422. INTERNATIONAL TRADE AND FINANCE

This course is designed to provide the student with a basic understanding of the principles of international trade, marketing, and finance. Specific topics which will be introduced include but are not limited to: tariffs, subsidies, import restrictions, foreign exchange, methods, agencies, and middlemen and business practices which influence trade relations. In addition, students will study the basics of the field of International Business including national differences in political economy and culture, global trade and investments, foreign direct investments, regional economic integration, foreign exchange markets, and strategic alliances. Prerequisites: ECON 214, 215. Offered in the Fall semester. *One semester; three credits*

ECON 460. SPECIAL TOPICS IN ECONOMICS

The reading and discussion of significant economic literature. The course is designed to improve the student's approach to modern economic problem solving and to stimulate economic thinking and the analysis of modern business problems. A study of basic economy theory as it pertains to the individual economic units of society and the study of tools which are used in analyzing these units. Price determination, market analysis and resource allocation are stressed. Prerequisites: ECON 214, 215. Offered in the Spring semester. *One semester; three credits*

■ EDUCATION COURSES**EDUC 110. INFORMATION TECHNOLOGY**

The purpose of this course is to explore the potential of the microcomputer as an aid to teaching and learning in the classroom. The course is designed to assist students in becoming computer literate in terms of (a) demonstrating a basic working knowledge of computer technology, (b) understanding the role of computers in the classroom, (c) using a variety of software packages for record keeping, material developing, and telecommunications, and (d) exploring copyright and other intellectual ownership issues. *One semester; three credits*

EDUC 211. FOUNDATIONS OF EDUCATION (Formerly EDUC 311)

Introduction to the profession of teaching and development of a personal philosophy of teaching

and learning; examination of American education and contemporary schools. Orients prospective teachers to licensure requirements and the Teacher Education Program. Field experience is a required part of the course. *One semester; three credits*

EDUC 302. PRACTICUM I

Required for students choosing middle or secondary teaching majors linked with the MAT route to middle or secondary licensure. Weekly one-hour seminar, readings, and 10 hours of field experience. *One semester; one credit*

EDUC 331. SURVEY OF EXCEPTIONAL LEARNERS

This course surveys and assesses the physical, psychological, social, and learning characteristics and needs of atypical learners with emphasis on skills and techniques for identifying and teaching such learners in a heterogeneous classroom. Requires interviews with and observations of practitioners in special education and a practicum experience of at least ten hours. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits*

EDUC 350. PORTFOLIO AND PRACTICUM I

Required for elementary licensure. Candidates recently admitted to the Teacher Education Program complete 30 clock-hours of school-based experience and assessments, including initial development of technology driven portfolio. Prerequisites: Admission to the Teacher Education Program. *One semester; one credit.*

EDUC 390. PRINCIPLES AND METHODS OF INSTRUCTION

This course, designed for students seeking secondary licensure, focuses on the skills appropriate to designing and implementing an instructional system suited to various types of learning, student competence levels, and curricular demands. Emphasis is placed on specific competencies in objective setting, lesson planning, testing, diagnosis, remediation, and alternative grading methods. Prerequisite: Admission to Teacher Education Program. *One semester; three credits*

EDUC 391. FIELD EXPERIENCE

Direct observation and participation in selected attendance centers. Fifteen clock hours of classroom work are required under the supervision of the classroom teacher and a college supervisor. Prerequisite: Admission to the Teacher Education Program. *One semester; one credit*

EDUC 392. FIELD EXPERIENCE

Direct observation and participation in selected schools, either elementary or secondary, depending upon the licensure track of the student. Thirty clock hours of classroom work are required under the supervision of a classroom teacher and a college supervisor. Prerequisite: Admission to the Teacher Education Program. *One semester; two credits.*

EDUC 393. FIELD EXPERIENCE

Direct observation and participation in selected schools, either elementary or secondary, depending upon the licensure track of the student. Forty-five clock hours of classroom work are required under the supervision of a classroom teacher and a college supervisor. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits.*

EDUC 401. PRACTICUM II

Required for students choosing middle or secondary teaching majors linked with the MAT route to middle or secondary licensure. Weekly one-hour seminar, readings, and 10 hours of field experience. Prerequisite: Admission to the Teacher Education Program. *One semester; one credit*

EDUC 402. PRACTICUM III

Required for students choosing middle or secondary teaching majors linked with the MAT route to middle or secondary licensure. Weekly one-hour seminar, readings, and 10 hours of field ex-

perience. Prerequisite: Admission to the Teacher Education Program. *One semester; one credit*

EDUC 405. CURRICULUM AND METHODS IN LANGUAGE ARTS, K-3

Students examine the theory and practice of transforming the methods of inquiry and the knowledge base of the language arts into language curriculum, emphasizing content and performance standards, planning for instruction, teaching methods and materials, including the integration of technology into the elementary school language arts curriculum. Specialized instruction in teaching grades K-3 to read is an integral part of this course. *One semester; three credits*

EDUC 406. CURRICULUM AND METHODS IN LANGUAGE ARTS, 4-8

Required for elementary licensure. Theory and practice in reading and instruction and in the knowledge and skills of language literacy, emphasizing content and performance standards in the language arts, planning for instruction, teaching methods, and materials, including the integration of technology into the 4-8 language arts curriculum. Field experience is a required part of this course/ Prerequisite: Admission to the Teacher Education Program. *One semester; three credits*

EDUC 407. CLASSROOM MANAGEMENT AND METHODS (Formerly EDUC 407)

Students develop and practice competence in various classroom management methods, including unit and lesson planning, interpersonal and group communication skills, and principles of effective classroom organization. Course topics include analyzing, comparing, evaluating, and applying various theories and methods of classroom motivation, management, and discipline. Ten hours of field experience required. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits*

EDUC 408. ASSESSMENT OF LEARNING AND PRACTICE, K-12

Elective course in education giving in-depth study in assessment and evaluation methods, including test design and interpretation of results and development of authentic and performance-based approaches to measuring student learning. *One semester; three credits.*

EDUC 411. CURRICULUM AND METHODS IN SCIENCE, K-8

Required for elementary licensure. Theory and practice in transforming the methods of inquiry and the knowledge base of the sciences into the elementary science curriculum, emphasizing content and performance standards, planning for instruction, teaching methods, and materials, including the integration of technology into the elementary science curriculum. Field experience is a required part of this course. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits*

EDUC 412. CURRICULUM AND METHODS IN SOCIAL STUDIES, K-8

Required for elementary licensure. Theory and practice in transforming the methods of inquiry and the knowledge base of the social sciences into the elementary social studies curriculum, emphasizing content and performance standards, planning for instruction, teaching methods, and materials, including the integration of technology into the elementary social studies curriculum. Field experience is a required part of this course. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits*

EDUC 416. CREATIVE EXPRESSION IN ELEMENTARY SCHOOLS, K-6

Required for elementary licensure. Integration of concepts of music, visual art, drama and dance into the elementary classroom. Prerequisite: Admission to the Teacher Education Program. *One semester; one credit*

EDUC 420. PORTFOLIO AND PRACTICUM II

Required for elementary licensure. Candidates at a mid-point in the Teacher Education Program complete 30 clock-hours of school-based experience and assessments, including further

development of technology-driven portfolio, appropriate Praxis II tests, and application for student teaching experience. Prerequisite: Admission to the Teacher Education Program. *One semester; one credit*

EDUC 422. CURRICULUM AND METHODS IN MATHEMATICS, K-8

Required for elementary licensure. Theory and practice in transforming the methods of reasoning and the knowledge base of mathematics into the elementary math curriculum, emphasizing content and performance standards, planning for instruction, teaching methods, and materials, including the integration of technology into the elementary math curriculum. Field experience is a required part of this course. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits*

EDUC 424. CREATIVE EXPRESSION IN ELEMENTARY SCHOOLS, K-6

Required for elementary licensure. Integration of concepts of music, visual art, drama, and dance into the elementary classroom. Prerequisite: Admission to the Teacher Education Program. *One semester; one credit*

EDUC 426. INTEGRATING CURRICULUM

This course examines features of integrated curriculum, including standards-driven instruction, concept-and theme-based units, and integration of content to ensure transfer of knowledge. Prerequisite: Admission to Teacher Education Program. *One semester; three credits*

EDUC 427. MIDDLE SCHOOL STRATEGIES

This course analyzes elements of high-performing middle schools in relation to characteristics of young adolescents. Topics include interdisciplinary teaming, block scheduling, teacher-based guidance, exploratory experiences, and the changing roles of middle school teachers. Prerequisite: Admission to Teacher Education Program. *One semester; three credits.*

EDUC 428. ADOLESCENT LITERATURE

A study of literature written for preadolescent children and adolescents designed for those who will teach middle school and high school English and language arts. Prerequisite: Admission to the Teacher Education Program or permission of instructor. *One semester; three credits.*

EDUC 429. READING AND WRITING ACROSS THE CURRICULUM, 7-12

(Formerly EDUC 415) Emphasizes and fosters continued development in student literacy and academic ability in all disciplines taught in the secondary school. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits.*

EDUC 430. CURRICULUM AND ASSESSMENT IN SECONDARY SCHOOLS, 7-12

Elective course focusing on standards-based curriculum development and assessment strategies in the secondary school. *One semester; three credits.*

EDUC 431. STUDENT TEACHING—ELEMENTARY LEVEL I

Directed student teaching in the early childhood grades is under the supervision of a selected cooperating teacher and a selected university supervisor. Prerequisites: Permission of the department chair and admission to Teacher Education Program. Corequisites: EDUC 432, 438. No other courses may be taken concurrently except corequisites. Offered in the Fall and Spring semesters. *Pass/Fail Grading. One semester; six credits.*

EDUC 432. STUDENT TEACHING—ELEMENTARY LEVEL II

Directed student teaching in the middle grades is under the supervision of a selected cooperating teacher and a selected university supervisor. Prerequisites: Permission of the department chair and admission to Teacher Education Program. Corequisites: EDUC 431, 438. No other courses may be taken concurrently except corequisites. Offered in the Fall and Spring semesters. *Pass/Fail Grading. One semester; six credits.*

EDUC 433. STUDENT TEACHING—ELEMENTARY LEVEL III

Directed student teaching in grades K-6 under the supervision of a selected cooperating teacher and a selected university supervisor. Reserved only for students seeking K-12 licenses who must also complete part of their student teaching experience in a 7-12 setting (see EDUC 437). Offered in the Fall and Spring semesters. *Pass/Fail Grading. One semester; six credits.*

EDUC 435. STUDENT TEACHING—SECONDARY LEVEL I

Directed student teaching in grades 7-9 is under the supervision of a selected cooperating teacher and a selected university supervisor. Prerequisites: Permission of the department chair and admission to Teacher Education Program. Corequisites: EDUC 436, 438. No other courses may be taken concurrently except corequisites. Offered in the Fall and Spring semesters. *Pass/Fail Grading. One semester; six credits.*

EDUC 436. STUDENT TEACHING—SECONDARY LEVEL II

Directed student teaching in grades 10-12 is under the supervision of a selected cooperating teacher and a selected university supervisor. Prerequisites: Permission of the department chair and admission to Teacher Education Program. Corequisites: EDUC 435, 438. No other courses may be taken concurrently except corequisites. Offered in the Fall and Spring semesters. *Pass/Fail Grading. One semester; six credits.*

EDUC 437. STUDENT TEACHING—SECONDARY LEVEL III

Directed student teaching in grades 7-12 under the supervision of a selected cooperating teacher and a selected university supervisor. Reserved only for students seeking K-12 licenses who must also complete part of their student teaching experience in a K-6 setting (see EDUC 433). Offered in the Fall and Spring semesters. *Pass/Fail Grading. One semester; six credits.*

EDUC 438. STUDENT TEACHING SEMINAR

The seminar includes discussion of classroom experiences, lesson plan preparation, lessons taught and observed, as well as ways to integrate resources, to recognize and refer problem students, to study and manage time. Progress on the development of state-mandated knowledge and skills will be reviewed. Prerequisite: Admission to Teacher Education Program. Corequisites: EDUC 431, 432 or 435, 436. *One semester; one credit.*

EDUC 441. CONTEMPORARY SECONDARY METHODS, 7-12

Strategies for use in the secondary English, mathematics, social studies, science, and foreign language classrooms presented and practiced by students Ten to fifteen hours of field experience required. *One semester; three credits*

EDUC 444. ART IN THE SCHOOLS.

Perspective on the role of art and art education in the schools. Required curriculum and methods course for prospective art teachers. *One semester; three credits.*

EDUC 445. SCHOOL HEALTH

This course covers school health knowledge and skills required for teachers, including health services, healthful school living, health screening, home and school safety, health content skills and materials, and first aid with CPR. *One semester; one credit*

EDUC 450. TEACHING FOREIGN LANGUAGE, K-12

Required curriculum and instructional methods course for all students completing a licensure program in a foreign language. Prerequisite: Admission to the Teacher Education Program. *One semester; three credits.*

EDUC 451. RELIGIOUS EDUCATION CURRICULUM AND METHODS, K-6

This course explores appropriate curriculum and instruction for religious education programs and

courses in the elementary school or at the elementary level. *One semester; three credits*

EDUC 452. RELIGIOUS EDUCATION CURRICULUM AND METHODS, 7-12

This course explores appropriate curriculum and instruction for religious education programs and courses in the secondary school or at the secondary level. *One semester; three credits*

EDUC 490-498. PROBLEMS IN EDUCATION

Directed work in a special topic in education approved by the department up to 3 credit hours. Prerequisite: Approval of Director of Teacher Education. *One semester; one to three credits*

■ ELECTRICAL AND COMPUTER ENGINEERING COURSES

Requirements for the degree are found on Pages 89 and 90. Requirements for a dual degree in Electrical Engineering and Computer Science are found on Page 91.

ECE 112. COMPUTERS IN ENGINEERING PROBLEM SOLVING (Formerly EE 112)

Introduction to the use of the digital computer in problem solving. Topics include flow of control, functions and user defined functions, pointers, array, strings and File I/O, study structured programming, pseudocode. Some applications will include graphics. Corequisite: MATH 131 or registration therein. Offered in the Fall and Spring. *One semester; three credits*

ECE 120. INTRODUCTION TO JAVA PROGRAMMING

Introduction to the use of the digital computer in problem solving. Topics include flow of control, functions and user defined functions, array, strings, and File I/O, study structured programming. Some applications will include graphics. On-Line Course. Offered as needed. *One semester; three credits*

ECE 200. INTRODUCTION TO FLIGHT SCIENCE

Ground instruction to meet FAA private pilot aeronautical knowledge requirements. Subjects include aircraft systems, performance and operation, aviation weather, weather monitoring systems, visual flight rules, navigation, electronic navigational aids, safety considerations, and applicable Federal Aviation Regulations (FARs). Prerequisite: MATH 105. *One semester; three credits*

ECE 201. ENGINEERING INSTRUMENTATION (Formerly EE 201)

A laboratory course designed to instruct students in the theory and use of various engineering instruments and transducers. Emphasis is placed on appropriate error analysis in the reduction, analysis, and reporting of data. Technical report preparation is emphasized. Two lecture periods and one laboratory period of three hours. Prerequisite: ECE 221. Offered in the Fall and Spring. (Same as ME 301) *One semester; two credits*

ECE 221. ELECTRIC CIRCUIT ANALYSIS I (Formerly EE 221)

Fundamental electrical concepts: charge, voltage, current, power, resistance, capacitance and inductance. Techniques of circuit analysis; Kirchhoff's Laws; nodal and mesh analysis; source transformations. Thevenin's and Norton's theorems; linearity and superposition. Transient analysis; source free R-L, R-C, and R-L-C networks; unit step forcing function; natural and forced responses. Sinusoidal steady-state analysis; the complex forcing function; phasors-complex impedance; complex power; effective values and balanced three-phase systems. Prerequisite: MATH 132. Corequisite: PHYS 251. Offered in the Fall and Spring. *One semester; three credits*

ECE 222. ELECTRIC CIRCUIT ANALYSIS II (Formerly EE 321 or EE 222)

Complex frequency; damped sinusoidal forcing function, $Z(s)$ and $Y(s)$. Frequency response; series and parallel resonance. Magnetically coupled circuits; mutual inductance, linear and ideal transformers. Two-port networks; admittance, impedance and hybrid parameters. Fourier

analysis; trigonometric and complex forms; complete response to periodic forcing functions. Fourier transforms; unit impulse function; convolution and circuit response in the time and frequency domain; system transfer functions. Laplace transform techniques; initial and final value theorems and transfer functions. Prerequisites: ECE 221 and MATH 231. Offered in the Fall and Spring. *One semester; three credits*

ECE 234. DATA STRUCTURES AND PROGRAMMING

Topics include data structures such as lists, stacks, queues, trees and tables, inheritance, polymorphism and techniques for building systems of interacting components. The student masters concepts and skills through the design and implementation of correct, robust and readable programs. (Same as CS 234) Offered in the Fall semester. One design credit. Prerequisite: CS 122 or ECE 112. *One semester; three credits*

ECE 236. OBJECT ORIENTED SYSTEMS DESIGN (Formerly ECE 233)

This course teaches the student how to build effective models using object oriented methods. It stresses the use of strategies and patterns in the analysis and the design of object oriented systems in engineering and sciences. It uses a modeling approach for the structure and behavior of objects. The student implements models with a software tool. Offered in the Spring semester. (Same as CS 236) One design credit. Prerequisite: ECE 234. *One semester; three credits*

ECE 244 COMPUTER PROGRAMMING LABORATORY

Lab to accompany ECE 234. Project driven laboratory experiments with emphasis on library design, polymorphism techniques, and debugging. (Same as CS 234L) Corequisite: ECE 234. *One semester; one credit*

ECE 250. DIGITAL DESIGN (Formerly EE 250)

Binary number system and Boolean Algebra. Minimization of logic functions. Implementation of logic circuits. Design of combinational circuits. Sequential devices. Design of synchronous sequential circuits. Introduction to counters, registers, and Register Transfer Language. Design of advanced arithmetic circuits. Memory devices. Processor design and microprogramming. Written reports are required for each of three design projects. Prerequisites: ECE 112 or CS 122 and 122L. Offered in the Fall semester. *One semester; three credits*

ECE 251. MICROPROCESSOR ARCHITECTURE AND PROGRAMMING

(Formerly EE 251) Eight bit microcomputer architecture, instructions, addressing modes registers, assembly language. Interfacing methods and devices. Current popular microprocessors with emphasis on the Motorola 68HCII. Two design projects will be required, one of which must include hardware. Prerequisite: ECE 250. Offered in the Spring semester. *One semester; three credits*

ECE 314. ENGINEERING ECONOMY (Formerly EE 314)

Fundamentals of engineering economy. Cost concepts. Time value of money and equivalence. Economic analysis of alternatives. Replacement analysis. Depreciation and after-tax analysis. Effects of inflation on economic analysis. Prerequisite: Junior standing. (Same as CH E 314, CE 314, ME 314) *One semester; three credits*

ECE 322. LINEAR CONTROL SYSTEMS (Formerly EE 322)

Analysis and design of linear control systems. Transfer function, block diagrams and state-variable representation. Feedback concepts and stability analysis in both the frequency and time domain. Design by Root locus, Bode plots, and state variable methods. Emphasis on use of computational software for complex cases. (Same as ME 422 Control Systems Engineering) Prerequisites: MATH 231, ECE 221, and MEA 202. Offered in the Fall semester. *One semester; three credits*

ECE 331. ELECTRONICS I (Formerly EE 331)

Properties of semiconductors. PN-junction diodes: theory, models, and circuit applications. Operation and characteristics of bipolar junction and field effect transistors. Analysis and design

of transistor bias circuits. Low frequency transistor models. Analysis and design of single stage amplifiers. Introduction to the operational amplifier and some of its applications. Introduction to frequency response of amplifiers. Introduction to oscillation. Prerequisite: ECE 221. Offered in the Fall semester. *One semester; three credits*

ECE 332. ELECTRONICS II (Formerly EE 332)

Analysis and design of single and multi-stage transistor circuits. Applications of the operational amplifiers and other integrated circuits. Introduction to feedback amplifiers, digital electronics, and small analog-digital systems. Introduction to power devices and circuits. Prerequisites: ECE 222, 331. Offered in the Spring semester. *One semester; three credits*

ECE 335. SYSTEMS, SIGNALS AND NOISE (Formerly EE 335)

Signal models, systems analysis, random variables and random processes. Analog communication systems, baseband analog signal transmission, and continuous wave modulation techniques for analog transmission. Digital transmission for analog signals, sampling, quantizing, encoding of analog signals for transmission over digital systems. Analysis and design of digital communications systems, information theory, discrete pulse and carrier wave modulation schemes. Written reports are required for each of the three design projects. Prerequisites: ECE 222 and MATH 309. Offered in the Spring semester. *One semester; three credits*

ECE 341. JUNIOR LABORATORY I (Formerly EE 341)

Experiments paralleling topics from ECE 222 and ECE 331. Most experiments will relate to topics from electronics and stress designing with discrete electronic devices. Introduction to integrated circuits through circuit applications. Students will be required to maintain a lab journal. Prerequisite: ECE 201. Prerequisites: ECE 201,221. Corerequisite: ECE 331. Offered in the Fall semester. *One semester; one credit*

ECE 342. JUNIOR LABORATORY II (Formerly EE 342)

Design projects paralleling ECE 322 and ECE 331. Some experiments may be assigned by the instructor, but some projects will be proposed by the students and submitted to the instructor for approval prior to the initiation of the work. An engineering notebook is kept by each student. Prerequisite: ECE 341. Corequisite: ECE 332. Offered in the Spring semester. *One semester; one credit*

ECE 350. COMPUTER SYSTEMS DESIGN AND ARCHITECTURE

General-purpose machines. Machine language and instruction set design. Simple RISC Computer using RTN, CISC (Motorola 68000) and RISC (SPARC) machines. Processor design, machine reset and exceptions. Pipelining and parallelism. Radix conversion, fixed and floating point arithmetic. Memory system design, virtual memory, and multi level memory. I/O subsystems, DMA, and error control. Peripheral Devices and intro to computer communication. Offered in the Fall semester. Prerequisite: ECE 251. *One semester; three credits*

ECE 400. THE COMPLEAT ENGINEER (Same as CH E 400, CE 400, and ME 400)

This course deals with a wide array of issues facing the practicing engineer. Topics include: engineering ethics; regulatory issues; health, safety, and environmental factors; reliability, maintainability, producibility, sustainability; and the context of engineering in the enterprise, in society, and as part of the global economy. Prerequisite: Permission of the department. *One semester; three credits*

ECE 401. ELECTROMECHANICAL ENERGY CONVERSION (Formerly EE 401)

Linear and nonlinear magnetic circuits of transformers. Basic principles of electromechanical energy conversion, electromechanical devices and feedback control systems. Derivation and analysis of mathematical models. Rotating a.c. and d.c. machinery and their use to control systems. Direct energy conversion systems. Prerequisite: ECE 222. Corequisite: ECE 403. Of-

ferred in the Fall semester. *One semester; three credits*

ECE 403. ENERGY CONVERSION LABORATORY (Formerly EE 403)

Laboratory experiments paralleling ECE 401. Single phase transformers. Induction and synchronous machines. Use of variable frequency sources for speed control of induction motors, voltage and speed control circuits of d.c. machines. Structured, written laboratory reports. Corequisite: ECE 401. Offered in the Fall semester. *One semester; one credit*

ECE 406. ELECTROMAGNETIC FIELD THEORY (Formerly EE 405 and ECE 405)

Field and vector operations. Electrostatic and magnetostatic fields. Time varying fields and electrodynamics. Plane waves. Transmission lines, transient and steady state. Prerequisites: ECE 221, MATH 232 and PHYS 251. Offered in the Fall semester. *One semester; four credits*

ECE 409. ELECTRICAL AND COMPUTER ENGINEERING PROJECT I

(Formerly ECE 409-410)

Design, development and implementation of student selected projects. Projects are sponsored by local and national industry. Includes complete engineering and testing as well as economic analysis. Written reports are required with the final product in engineering report form. A required oral presentation of the project to industry sponsors, faculty and students. Prerequisites: ECE 332, Senior Standing, and approval of Department advisor. Offered in the Fall semester. *One semester; one credit*

ECE 410. ELECTRICAL AND COMPUTER ENGINEERING PROJECT II

(Formerly ECE 409-410)

This is the major design experience for ECE students in which they demonstrate knowledge and skills acquired in earlier course work, technical and non-technical. They must also incorporate relevant engineering standards and realistic constraints in their work. Students select, design, develop and implement solutions to selected projects. Projects are suggested and sponsored by local and national industry, government, and institutions. Written reports are required with the final report in engineering report form. A final oral presentation to sponsors, faculty and friends is required. Prerequisites: ECE 409, senior standing and approval of department advisor. Offered in the Spring semester. *One semester; two credits*

ECE 413. ANTENNA THEORY (Formerly EE 413)

Radiation-oscillating electric dipole, radiation from resonant length antennas. Antenna fundamentals-directional properties, linear arrays, antenna gain and terminal impedance. Wire antennas, broadband techniques, and aperture antennas. Emphasis on design techniques and major written design report. Computer solutions employed. Prerequisites: ECE 405 and PHYS 252. *One semester; three credits*

ECE 417. OPTICAL FIBER COMMUNICATION (Formerly EE 417)

A study of the transmission properties of optical fibers; light sources and detectors; power launching and coupling; noise sources; modulation formats, system analysis and design. Prerequisites: ECE 331, 335, 406 and PHYS 252. *One semester; three credits*

ECE 418. POWER SYSTEM ANALYSIS (Formerly EE 418)

A study of power system parameters, circuit transposition and per unit computation. Load flow studies. Fault calculation by computer simulation. System stability and protective relaying. Circuit breakers and lightning arresters. Formal reports required for two design projects. Prerequisite: ECE 222, 401 or Permission of the instructor. Offered in the Spring semester. *One semester; three credits*

ECE 420. DIGITAL CONTROL SYSTEMS (Formerly EE 420)

Analysis of discrete time systems, sampled-data systems, and digital systems. Development of

Z transforms and pulse-transfer functions. Characterization of dynamic response of D/A-A/D conversion, sampling, aliasing. Elements of the design of digital feedback control systems. Transform techniques. Design using control system specifications and root loci diagrams. State variable methods. Introduction to random processes and modern filtering. Effects of quantization. Prerequisite: ECE 322. *One semester; three credits*

ECE 421. MECHATRONICS

An intermediate treatment of the design of systems with interdependency of electrical and mechanical components. Topics include measurement theory, computer interfacing and control, sensors, actuators, and introduction to real-time fuzzy logic controllers. Prerequisites: ECE 251 or ME 202 or Permission of instructor. *One semester; three credits*

ECE 435. ELECTRONICS III (Formerly EE 435)

Continued use of the computer as a tool in analysis and design of electronic circuits. Feedback amplifiers; frequency response of feedback amplifiers including topics in compensation of amplifiers; oscillators; operational amplifiers; active filters; small analog-digital systems; other selected topics of interest to the class. Prerequisite: ECE 332. Corequisite: ECE 445. Offered in the Fall semester. *One semester; three credits*

ECE 436. POWER ELECTRONICS (Formerly EE 436)

History and introduction. Diode rectifiers. Thyristors and controlled rectifiers. AC voltage controllers. Commutation Techniques. Power transistors, DC choppers, PWM inverters, DC and AC drivers. Protection of devices and circuits. Prerequisites: ECE 332, 417. Offered in Spring semester. *One semester; three credits*

ECE 445. ELECTRONICS III LABORATORY (Formerly EE 445)

Design projects paralleling ECE 435. Projects will be proposed by the students and submitted to the instructor for approval prior to the initiation of the work. Use of engineering logbook/notebook. Prerequisite: ECE 342. Corequisite: ECE 435. Offered in the Fall semester. *One semester; one credit*

ECE 450. COMPUTER NETWORKS

The course emphasizes the relationship between computer systems and network services. HTTP, SMTP, DNS, NNTP and other networking services are introduced and explained. The Unix operating system implementation of these services is studied. Network based programming projects are assigned to verify understanding of protocols and operating system issues. Security and privacy issues in a networked environment are addressed. Prerequisite: ECE 234 or CS 234 or permission of instructor. Offered in the Spring semester. *One semester; three credits*

ECE 451. ADVANCED C++ PROGRAMMING (Formerly EE 479)

This course extends the object-oriented concepts developed in ECE. The course will cover topics that address namespaces, templates, exceptions, run time type identification, and the standard library including containers, iterators, and algorithms. Prerequisites: Senior standing or Permission of the instructor and either ECE 112 or CS 122. *One semester; three credits*

ECE 453. COMPUTER GRAPHICS (Formerly ENGR 423 and EE 423)

This course is designed to give students an introduction to the use of computers as tools in graphical design. Topics include computer hardware, two and three dimensional representation, orthographic views, isometric views, curved surfaces, animation, and interactive techniques. A graphics project is required. (Same as CS 423) Prerequisites: Permission of the instructor and ECE 112 or CS 122. *One semester; three credits*

ECE 454. COMPUTER HARDWARE (Formerly EE 454)

Review of logic operations. Boolean algebra. Analysis and design of combinatorial circuits and

sequential circuits. Race conditions and state assignments. Use of FPGA, EPLD, and VHDL in embedded digital design. Design tradeoffs: economics, speed, power dissipation, timing considerations, hardware and software. Computer related I/O standards such as: IEEE 488, CAMAC, RS449. Prerequisites: ECE 251 and Senior standing. *One semester; three credits*

ECE 457. CONNECTIONIST ARTIFICIAL INTELLIGENCE

Fundamental concepts of neurocomputing, biological versus artificial neurons, parallel and distributed computing, learning by adjusting connection weights. Mapping networks, including Associative Memory, Backpropagation, and Counterpropagation. Recurrent networks, including Hopfield and Boltzmann Machine. Self-organizing networks, including Kohonen and Adaptive Resonance Theory. Neurofuzzy systems. Using genetic algorithms as network-training algorithm. Prerequisites: ECE 112 or equivalent; Junior or senior standing. *One semester; three credits*

ECE 470. DATA COMMUNICATIONS (Formerly EE 415)

Elements of data communication and the ISO reference model. Network structure, architectures and protocol hierarchies. Algorithms and heuristics for design of computer network topology. Physical basis for data communication. Synchronous and asynchronous data communication, interface standards, data channels and modulation schemes. Data link protocols. Point-to-point, satellite, packet radio, and local area networks. Written reports are required for each of the three design projects. Prerequisite: ECE 335. Offered in the Fall semester. *One semester; three credits*

ECE 471. DESIGN OF DATABASE SYSTEMS

Comprehensive introduction to the design of databases and the use of database management systems for the implementation of database applications. Entity-relationship and relational data models and database design. Abstract query languages (relational algebra) and SQL (language for creating, querying, and modifying relational and object-relational databases). Views, integrity, constraints, triggers, transactions, and security. Data warehouses, data mining, temporal databases, XML. Prerequisite: Junior standing. *One semester; three credits*

ECE 472. DATABASE SYSTEM IMPLEMENTATION

File organization and access, buffer management, performance analysis, and storage management. Database system architecture, query optimization, transaction management, recovery, concurrency control. Reliability, protection, and integrity. Design and management issues. Prerequisite: Junior standing. *One semester; three credits*

ECE 473. HUMAN COMPUTER INTERACTION

This course focuses on issues involved in the design of computer systems as they relate to the interaction between people and computers. Techniques demonstrating effective human computer interaction are assessed. Students will evaluate the human factors and theories associated with human-computer interaction. Prerequisite: Junior standing. *One semester; three credits*

ECE 475. DIGITAL TELEPHONY (Formerly EE 475)

Analysis of telephone transmission media. Study of linear distortion, echo and losses. Pulse Code Modulation. Logarithmic and A-Law compounding. Study of signal to noise ratio of digital modulation schemes. Digital Switching time and space. Switch complexities and ASDL. Fundamentals of traffic analysis and teletraffic theory. ISDN. Study of framing. Quality of Service (QoS) and timing of current telephone trends and services such as Frame-Relay, IP telephony, ATM and AIN networks. Prerequisites: ECE 335, Senior standing, or Permission of instructor. *One semester; three credits*

ECE 476. MODELING AND SIMULATION OF COMMUNICATION NETWORKS

(Formerly EE 476) Computer modeling of communication networks including voice, data and integrated networks. Analysis, modeling, and statistical validation of network traffic. Design of

simulation experiments-Factorial, Fractional-Factorial, and advanced designs. Validation, analysis and interpretation of network simulations. The students are required to implement three designs of communication networks. Prerequisite: ECE 335. *One semester; three credits*

ECE 477. DIGITAL SIGNAL PROCESSING (Formerly EE 477)

Discrete time signals and systems. The discrete time Fourier transform. The z-transform. The inverse z-transform. The discrete Fourier series. The discrete Fourier transform. Circular convolution. Representation of linear digital networks. Network structures for IIR systems. Network structures for FIR systems. Design of IIR digital filters. Digital Butterworth filters. Design of DIR filters. Computation of the discrete Fourier transform. The FFT. Written reports are required for each of the three design projects. Prerequisite: ECE 335. Offered in the Spring semester. *One semester; three credits*

ECE 480-489. SPECIAL TOPICS (Formerly EE 480-489)

Elective courses of special or current interest. Usually taught by visiting faculty with special or unique qualifications. Normally taken by Seniors. Prerequisites are announced with course offerings. *One semester; three credits*

ECE 490-494. SEMINAR (Formerly EE 490-494)

Special series of lectures on selected topics. Course credit assigned may range from zero to two. *One semester; zero to two credits*

ECE 495-496. INTERNSHIPS IN ELECTRICAL AND COMPUTER ENGINEERING

Students majoring in electrical engineering may be placed in the engineering offices of contracted firms to receive job training under the supervision of qualified engineers. Tasks completed as part of the internship must be approved by an authorized work supervisor. Credit is granted upon faculty approval of periodic review reports and a final summary report describing the work performed. Minimum time 200 hours. Prerequisites: Junior standing and Permission of the department. *Pass/Fail Grading. One semester; three credits*

ECE 497, 498, 499. TOPICS IN ELECTRICAL AND COMPUTER ENGINEERING I, II, III (Formerly EE 497,498,499)

Directed work on a special problem. Problems of an interdisciplinary nature are encouraged. A written report is required. A contract outlining the scope of the project is required prior to the initiation of work. Prerequisite: Senior standing and a duly executed contract. *One semester each; one, two, and three credits*

■ **ENGLISH COURSES**

Requirements for the degree are found on Pages 49 and 50.

ENG 100. DEVELOPMENTAL COMPOSITION I

Intensive work on basic grammar, punctuation, sentence structure, paragraph development, and reading skills designed to prepare students for ENG 111. Separate sections will be offered for native and non-native speakers. Offered in the Fall semester. *One semester; three credits*

ENG 111. ENGLISH COMPOSITION I

An introduction to rhetorical modes and methods for critical reading. Writing sequences with practical application of specific strategies for invention, drafting, frequent revision, peer review, and editing. Offered in the Fall and Spring. Honors Program students typically take ENG 231 and 232 instead of ENG 111 and 112 and a literature course. *One semester; three credits*

ENG 112. ENGLISH COMPOSITION II

An introduction to argumentative strategies, research skills, and other applied writing. Students will write several short pieces and a research paper. Special sections which focus on a specific

topic, such as “censorship” or “gender,” may be designated. Prerequisites: ENG 111. Offered in the Fall and Spring. Honors Program students typically take ENG 231 and 232 instead of ENG 111 and 112 and a literature course. *One semester; three credits*

ENG 115. ACADEMIC WRITING

An introduction to rhetorical strategies and methods for critical reading and writing. Writing sequences will require students to apply specific approaches to invention, research, drafting, revision, peer review, and editing. Offered in the Fall semester. Corequisite IDS 101. Honors Program students may take ENG 231 and 232 instead of ENG 115 and a literature class. *One semester; three credits*

ENG 211. INTRODUCTION TO LITERATURE I

A study of the literary forms of the novel and the short story, including the reading of significant world novels and short stories. This course will include an emphasis on writing skills cultivated in ENG 111, 112. Prerequisites: ENG 111, 112. Offered in the Fall and Spring. *One semester; three credits*

ENG 212. INTRODUCTION TO LITERATURE II

A study of the literary forms of drama and poetry, including the reading of significant world plays and poems. This course will include an emphasis on writing skills cultivated in ENG 111, 112. Prerequisites: ENG 111, 112. Offered in the Fall and Spring. *One semester; three credits*

ENG 215. GATEWAY COURSE FOR MAJORS

A survey of the elements of poetry, drama, and fiction, and an introduction to contemporary critical approaches and MLA style. Will include an emphasis on writing about literature and incorporating critical research. For English, ECCM, and English Education majors, this course is required before enrolling in any 300-400 level English course. *One semester; three credits.*

ENG 221. SURVEY OF BRITISH LITERATURE I

A survey of the representative prose and poetry writers of Great Britain from the beginnings through the 18th Century. Fulfills ENG 211 requirements. Prerequisites: ENG 111, 112 or Permission of Department Chair. *One semester; three credits*

ENG 222. SURVEY OF BRITISH LITERATURE II

A survey of the representative prose and poetry writers of Great Britain since 19th-century Romantic Period. Fulfills ENG 212 requirement. Prerequisites: ENG 111,112 or Permission of Department Chair. Offered in the Spring semester. *One semester; three credits*

ENG 231. HONORS SURVEY OF WORLD LITERATURE I

A survey of significant prose and poetry writers of world literature from ancient times through 1600. This course will include an emphasis on writing skills. ENG 231 by itself can be substituted for ENG 111. Prerequisite: Membership in the Honors Program. Offered in the Fall semester. *One semester; four credits*

ENG 232. HONORS SURVEY OF WORLD LITERATURE II

A survey of significant prose and poetry writers of world literature from 1600 through the present. This course will include an emphasis on writing skills. ENG 232 by itself can be substituted for ENG 112. ENG 231 and 232 together can be substituted for ENG 111, 112, and one of the following: ENG 211, 212, 221, or 222. Prerequisite: Membership in the Honors Program. Offered in the Spring semester. *One semester; four credits*

ENG 240-249. SPECIAL TOPICS

Topics vary with the instructor. Prerequisite: ENG 111,112 or ENG 231, 232. *One semester; three credits*

ALL 300 AND 400 LEVEL COURSES ARE OPEN TO STUDENTS WHO HAVE COMPLETED ONE 200 LEVEL ENGLISH COURSE (211, 212, 221, 222, 231, 232). ENGLISH,

ECCM, AND ENGLISH EDUCATION MAJORS MUST HAVE COMPLETED ENG 215.

ENG 315. HISTORY OF THE THEATRE

An in-depth study of the theatre including samples of dramatic literature from ancient Greece to the present. (Same as THEA 315) *One semester; three credits*

ENG 331. AMERICAN LITERATURE TO 1865

A study of the representative prose and poetry writers of American literature set against the political, religious, and philosophical backgrounds from the Colonial Period through the Romantic Period. *One semester; three credits*

ENG 332. AMERICAN LITERATURE FROM 1865

A study of representative prose and poetry writers of American literature set against the social, political, and philosophical backgrounds since the Romantic Period. *One semester; three credits*

ENG 339. EIGHTEENTH-CENTURY BRITISH NOVEL

Extensive reading in novels by representative eighteenth-century British novelists such as Defoe, Richardson, Fielding, Smollett, and Sterne. *One semester; three credits*

ENG 340. NINETEENTH-CENTURY BRITISH NOVEL

Extensive reading in novels by representative nineteenth-century British novelists such as Austen, the Brontes, Dickens, Eliot, and Hardy. *One semester; three credits*

ENG 341. NINETEENTH-CENTURY AMERICAN NOVEL

Extensive reading in representative nineteenth-century American novels, set against the social, political, and literary backgrounds of their times. *One semester; three credits*

ENG 342. AMERICAN ROMANTICISM

A study of the representative influences, characteristics, and figures of the American Romantic Movement from 1830 to 1860. *One semester; three credits*

ENG 343. LITERATURE OF THE AMERICAN SOUTH

A survey of Southern American literature, including its background and themes, with emphasis on twentieth-century writers such as Faulkner, Welty, and Warren. *One semester; three credits*

ENG 351. MODERN NOVEL

An examination of modern modes of fiction through representative novelists and the stylistic concepts that shape their expression. *One semester; three credits*

ENG 352. MODERN POETRY

A study of theory and representative poets in the United States, Great Britain, and Ireland from 1900 to the 1960s. *One semester; three credits*

ENG 354. MODERN DRAMA

An examination of modern American drama from 1880-1960, beginning with a survey of late nineteenth-century European works followed by an intensive study of major playwrights and movements of the twentieth century. *One semester; three credits*

ENG 361. AFRICAN-AMERICAN LITERATURE

A study of poetry and prose by representative African-American writers, reflecting the development of African-American literature in the United States. *One semester; three credits*

ENG 362. WOMEN IN LITERATURE

An examination of literature by women in light of feminist literary theory. *One semester; three credits*

ENG 370. ADVANCED PRACTICAL GRAMMAR

The forms, relationships, and functions of language with emphasis on the elements of words

and sentences. *One semester; three credits*

ENG 371. BUSINESS WRITING

An examination of logical and psychological patterns of business communication and adaptation to varying audiences. A study of forms of written and oral communication in the business world from letters for both routine and problem situations to memos, proposals, short and long reports, in the context of relevant technologies. Offered in the Fall and Spring. *One semester; three credits*

ENG 373. ADVANCED COMPOSITION

A study of rhetorical theory and rhetorical models accompanied by advanced practice in composition. *One semester; three credits*

ENG 375. SCIENTIFIC AND TECHNICAL WRITING

An examination of the principles of effective communication in industry, business, and government with emphasis on practical writing skills for technical articles, reports, proposals, and documentation. Heavy emphasis on the computer as the technical writer's workspace. *One semester; three credits*

ENG 376. CREATIVE WRITING

A workshop in writing fiction and/or poetry. Texts will be assigned for discussion of techniques and form. *One semester; three credits*

ENG 377. TECHNOLOGY FOR THE ARTS

A practical introduction to the working world of electronic texts and electronic publication. Students will design and create websites as well as publishing projects while they explore the world of digital photography. To provide the language and conceptual context for cybertext, lectures and discussions include the history of ink-and-fiber publishing as well as the emergence of hypertext and the internet. *One semester; three credits*

ENG 380-389. SPECIAL TOPICS

Topics vary with the instructor. Prerequisite: ENG 111, 112, and one 200 level English course (211, 212, 215, 221, 222, 231, 232). *One semester; three credits*

ENG 390-399. HONORS ENGLISH SPECIAL TOPICS

Special topics in English open to members of the Honors Program or by Permission of the instructor. *One semester; one to four credits*

ENG 432. MEDIEVAL LITERATURE

A study of representative works, European as well as British, from the Medieval Period. *One semester; three credits*

ENG 440. CHAUCER

A study of Chaucer's major works with emphasis on *The Canterbury Tales* and *Troilus and Criseyde*. *One semester; three credits*

ENG 441. SHAKESPEARE

An extensive and intensive study of both the comedies and tragedies. *One semester; three credits*

ENG 442. RENAISSANCE LITERATURE

A study of the major poets and prose writers of the English Renaissance Period including Spenser, Marlowe, and others. *One semester; three credits*

ENG 443. MILTON

A study of Milton's poetry with emphasis on *Paradise Lost*. *One semester; three credits*

ENG 444. RESTORATION AND THE EIGHTEENTH CENTURY

Dryden, Pope, Swift, and Johnson together with minor writers in poetry, prose, and drama. *One semester; three credits*

ENG 445. ROMANTIC PROSE AND POETRY

Wordsworth, Coleridge, Byron, Shelley, Keats-their practice and theory-as well as the Romantic essayists. *One semester; three credits*

ENG 446. VICTORIAN PROSE AND POETRY

Tennyson, Arnold, Browning, Hopkins, Carlyle, Newman, Ruskin-their lyrics and essays. *One semester; three credits*

ENG 447. SEVENTEENTH-CENTURY POETRY

A study of the poets of the seventeenth century including Jonson, Donne, Herbert, Marvell, Herrick, Lady Mary Wroth, and Aemilia Lanyer. *One semester; three credits*

ENG 450. CONTEMPORARY LITERATURE

A study of American and British fiction, poetry, and drama of the past twenty-five years. *One semester; three credits*

ENG 460-469. SPECIAL TOPICS

Topics of special interest including Comic Drama, Literary Non-Fiction, Tragic Drama, Detective Fiction, Publishing History of the United States, Baseball in American Literature, etc. Topics vary with instructor. Prerequisite: one 200 level English class (211, 212, 215, 221, 222, 231, 232). *One semester; three credits each*

ENG 479. JUNIOR SEMINAR

This course should be taken in the Spring semester of the junior year. Students will examine contemporary critical approaches to literature and will engage in preliminary work on their senior seminar thesis. Offered in the Spring semester. *One semester; one credit*

ENG 480. SENIOR SEMINAR

This course should be taken during the Fall semester of the senior year. In the course students will examine methods and approaches to literary research and will produce a major term paper, their senior thesis, on a writer or literary theme of their choosing. Offered in the Fall semester. *One semester; three credits*

ENG 486. CASTINGS INTERNSHIP

Experience in editing CBU's literary magazine. For editor(s) only. Students may enroll in this course more than one time. *Pass/Fall Grading. One semester; one credit*

ENG 487. HONORS JOURNAL INTERNSHIP

Experience in soliciting submissions for and editing the Honors Journal. Prerequisite: Honors Program membership and Approval by the Honors Program Director. Students may enroll in this course more than one time. *Pass/Fail Grading. One to two semesters; one to three credits*

ENG 488. WRITING CENTER TUTOR PRACTICUM

A practical introduction to the problems and management of a writing center and to the skills of one-to-one intervention in the student's writing process. Enrollment limited to Writing Center Tutorial Staff. Students may enroll in this course more than one time. *Pass/Fail Grading. One semester; one credit.*

ENG 489. INTERNSHIP

Major-related work experience through which students apply English subject matter skills to professional activity. Prerequisite: Junior standing and Permission of the English faculty. Offered in the

Spring Semester. One hour per week in class required. *One semester; three credits.*

ENG 490-498. RESEARCH TOPICS IN ENGLISH

Original writing projects or independent study and research in literature pursued under the guidance of a member of the English faculty. Syllabus and credit hours contracted by the student with the English Department. *One semester each; one to three credits each*

■ FINANCE COURSES

Requirements for the major are found on Page 76.

FIN 327. FINANCIAL MANAGEMENT I

An introduction to the basic concepts, principles and analysis techniques of finance as applied to business organizations. The basis for virtually all financial analysis methodology lies in discounted cash flow analysis which is covered in this course. DCF techniques are then applied to areas of basic corporate decision-making involving the acquisition or replacement of physical assets and the decision to pursue capital projects. Finance 327 is a quantitative, problem solving course. Prerequisites: ACCT 260, ECON 215, ITM 153, and MATH 105. Corequisite: ACCT 270 or 320. *One semester; three credits*

FIN 340. INVESTMENTS (Formerly FIN 429)

Finance 340 covers the principles governing the selection of investment media, topics in modern portfolio theory, and techniques of analysis and evaluation as applied to various investment alternatives. The functioning of security markets and how financial assets are traded as well as valuation techniques for bonds, equity instruments, options and futures are covered. Emphasis is on gaining a more in-depth understanding of financial investment alternatives, their valuation and analysis. Prerequisite: FIN 327. *One semester; three credits*

FIN 346. PERSONAL FINANCE

The course is designed to acquaint the student with basic principles necessary to efficiently manage personal financial affairs. Special attention is given to the areas of budgeting, insurance, consumer credit, housing cost problems, and investment opportunities. This course cannot be used to fulfill any of the Finance requirements in the School of Business. *One semester; three credits*

FIN 350. FINANCIAL MARKETS

Survey of financial markets and institutions and their individual characteristics; sources of supply of and demand for funds in each market, the complex interrelations among markets and the role of each in the process of capital formation and allocation. Prerequisites: FIN 327, ECON 303. *One semester; three credits*

FIN 400. FINANCE INTERNSHIP (Formerly BUS 400)

Under the supervision of a faculty member from the appropriate department, students in the School of Business, after receiving the approval of the faculty, are placed in the offices of cooperating firms to receive on-the-job training under the supervision of members of the firm. Credit is granted upon acceptance of periodic reports and a final summary report of work done verified by the authorized supervisor and the instructor. *Pass/Fail Grading. One semester; three credits*

FIN 410. DERIVATIVE SECURITIES

Structure, operation, and mechanics of trading in markets for futures, swaps, options, synthetic options, and futures on options; transfer of risk and stabilization of prices through futures trading; buying/selling strategies; valuation of futures contracts and options. Applications of derivatives to hedging and speculating strategies. Prerequisite: FIN 340. *One semester; three credits*

FIN 427. FINANCIAL MANAGEMENT II (Formerly FIN 328)

Extends the knowledge of financial management and provides insights into the complexity of the

decisions faced by practicing financial managers. Various topics are covered in the course with major emphasis on capital budgeting. Other topics covered include working capital management, international mergers and acquisitions, financial engineering, optimal capital structure, and enterprise value. Prerequisite: FIN 327. *One semester; three credits*

FIN 430-436. SPECIAL TOPICS IN FINANCE

Readings and discussions of recent significant finance and investment literature. Possible subject areas include leveraged buyouts, mergers and acquisitions, junk bonds, speculative markets, fixed-income investments, foreign markets and exchanges, and hedging. Prerequisites: FIN 327, 340. *One semester; three credits*

FIN 437. INTERNATIONAL FINANCIAL MANAGEMENT

The international aspects of financial management. Topics include currency markets and exchange rate determination, transfer of funds, banking services, international financial institutions, parity conditions, foreign exchange exposure and management, and valuation of international projects. Prerequisite: FIN 427. *One semester; three credits*

FIN 440. PORTFOLIO MANAGEMENT

The analysis and valuation of securities and the selection, timing, diversification, and other aspects of supervising the management of investment portfolios. Students analyze the composition of, make buy/sell recommendations for, and evaluate the performance of a portfolio during the semester. Prerequisite: FIN 340. *One semester; three credits*

FIN 450. INVESTMENT CHALLENGE I

Students learn the essentials of portfolio management by making investing decisions for an actual client. Students will prepare, buy, hold, and sell recommendations to present to an investment committee. These recommendations will be used to invest \$350,000 of the Tennessee Valley Authority's portfolio. Students will compete with other colleges and universities for prize money. Class enrollment is limited. Application for participation must be made prior to registration. Permission of TVA Investment Challenge Coordinator required. For further information or an application form, contact Dr. Bevalee Pray at bpray@cbu.edu. Prerequisite: FIN 327. *One semester; three credits*

FIN 451. INVESTMENT CHALLENGE II

Students gain advanced knowledge of portfolio management by determining sector weightings, choosing equity investment recommendations, and tracking performance of an actual portfolio. Students will deal directly with a client, TVA, and compete among other schools for prize money. Class enrollment is limited. Application for participation must be made prior to registration. Permission of TVA Investment Challenge Coordinator required. For further information or an application form, contact Dr. Bevalee Pray at bpray@cbu.edu. Prerequisite: FIN 450. *One semester; three credits*

■ FOREIGN LANGUAGE COURSE REQUIREMENTS (for courses taught at CBU)

When a student has passed two or more years of the *same* foreign language with at least a "C" average in high school, she/he may choose one of the following options:

1. Enroll in the same foreign language studied in high school at the 201 level (recommended option) or at the 101 or 102 level (permitted options).
2. Enroll at the elementary level (101) of a foreign language not studied in high school (Note that a 101 course must be followed by the corresponding 102 course in order to acquire elementary competency in a language.)

A minimum of thirty minutes per week in the language laboratory is required for all 100 and 200 level courses.

Upper-division language courses may be taken concurrently with intermediate courses with prior approval of the instructor.

Upper-division language courses may be offered as tutorial courses with the availability and the consent of the instructor and the approval of the Chair of the Department of Literature and Languages.

■ FOREIGN LANGUAGE COURSES

FORN LANG 101, 102. SPECIAL TOPICS IN FOREIGN LANGUAGES

The study of a language other than French, German or Spanish. Offered in sequence in the Fall and Spring. *Two semesters; six credits*

■ FRENCH COURSES

FREN 101, 102. ELEMENTARY FRENCH

Fundamentals of grammar and pronunciation, elementary conversation. Second semester includes reading and translation of texts of graded difficulty. Not open for credit to native speakers of French. Offered in sequence in the Fall and Spring. *Two semesters; six credits*

FREN 201, 202. INTERMEDIATE FRENCH

A review of French grammar with composition and conversation. Second semester includes the reading of French short stories selected from French literature, designed to increase the student's vocabulary and to contribute to his mastery of idiomatic constructions. Prerequisites: FREN 101, 102. Not open for credit to native speakers of French. Offered in sequence in the Fall and Spring. *Two semesters; six credits*

FREN 301, 302. COMPOSITION AND CONVERSATION

Continued study of French grammar and composition. Drill on idioms and difficult constructions with reading in French civilization. Prerequisites: FREN 201, 202 or the equivalent. Not open for credit to native speakers of French. Offered in sequence in the Fall and Spring. *Two semesters; six credits*

FREN 311. SURVEY OF FRENCH LITERATURE I

A survey of the chief French authors and their works from the beginnings through the Golden Age. Readings, lectures, discussions. Prerequisite: Two years of college French or the equivalent. Offered in the Fall semester. *One semester; three credits*

FREN 312. SURVEY OF FRENCH LITERATURE II

A survey of the chief periods and movements in French literature from the 18th to the 20th century. Reading in French of selections from the masterpieces of the principal authors of these centuries. Prerequisite: Two years of college French or equivalent. *One semester; three credits*

FREN 313. FRENCH CIVILIZATION I

An overview of the chief historical, political, and artistic periods in French civilization from the Middle Ages through the 18th century. Readings, lectures, discussions, films, and presentations. Prerequisite: Two years of college French or equivalent. Offered in the Fall semester. *One semester; three credits*

FREN 314. FRENCH CIVILIZATION II

Continued study of the principal historical, political, and artistic periods in French civilization, with an emphasis on the 19th and 20th centuries. Readings, lectures, discussions, films, and presentations. Prerequisite: Two years of college French or equivalent. Offered in the Spring semester. *One semester; three credits*

FREN 315. BUSINESS FRENCH I

An introduction to business and technology in the French-speaking world from a personal,

everyday life perspective. Study includes banking, telecommunications, computers, and the Internet. Prerequisite: Two years of college French or the equivalent. Offered in the Fall semester. *One semester; three credits*

FREN 316. BUSINESS FRENCH II

Continued study of business and technology in the French-speaking world. Units include interviewing, resume writing, business correspondence, and corporate organization. Prerequisite: Two years of college French or the equivalent. Offered in the Spring semester. *One semester; three credits*

FREN 380-389. SPECIAL TOPICS IN FRENCH.

Topics of special interest related to French literature, language, or culture. Prerequisites: French 302 and 312 and permission of instructor. Offered in Fall or Spring. *One semester; three credits*

FREN 400-410. RESEARCH TOPICS IN FRENCH

Original writing projects or independent study and research in literature, pursued under the guidance of a member of the French faculty. Syllabus and credit hours contracted by the student with the French professor. *One semester each; one to three credits each*

FREN 480-489. SPECIAL TOPICS IN FRENCH.

Topics of special interest related to advanced study of French literature, language, or culture. Prerequisites: French 302 and 312 and permission of instructor. Offered in Fall or Spring. *One semester, three credits*

The remainder of the foreign language courses under this heading are offered on the campus of Rhodes College under the instruction of Rhodes faculty. See the Dean of the School of Arts concerning these classes.

■ GEOGRAPHY COURSES

GEOG 280. GEOGRAPHY SURVEY

The study of the general nature of the earth, focusing on topography and climate of land areas, ways of living of the world's peoples, and relationships of people, their resources and environment. *One semester; three credits.*

GEOG 310. PHYSICAL GEOGRAPHY

An introduction to environmental and earth science, particularly weather and climate. Study of atmospheric phenomena, global climate systems and patterns; emphasis on the development of map and globe skills. *One semester; three credits*

GEOG 325. REGIONAL GEOGRAPHY

Spatial analysis of economic, cultural, and physical characteristics of selected areas of the world. Comparisons of developing and industrialized nations involving population distribution, spatial patterns of economic activity, and human-environmental relationships. *One semester; three credits*

GEOG 340. HUMAN GEOGRAPHY

Study of cultural, political, and economic aspects of major ethnographic areas and selected cultures of the world. *One semester; three credits*

■ GERMAN COURSES

The foreign language courses under this heading are offered on the campus of Rhodes College under the instruction of Rhodes faculty. See the Dean of School of Arts concerning these classes.

GRM 101-102. ELEMENTARY GERMAN.

Fundamentals of the German language: pronunciation, grammar, speaking, reading and writing.

Offered in sequence in the Fall and Spring. *Two semesters; eight credits*

GRM 201-202. INTERMEDIATE GERMAN.

Continued practice of the basic language skills. Particular emphasis is placed on the reading and discussion of modern texts of literary and cultural interest, systematic vocabulary building, and simple composition. Continued oral practice in language laboratory and in small groups with native speakers. Prerequisite: German 102 or the equivalent. Offered in sequence in the Fall and Spring. *Two semesters; eight credits*

GRM 301. COMPOSITION AND CONVERSATION

Training in written and oral German expression; intensive work with tapes; discussion of topical subjects, based on readings from newspapers and magazines and German news programs; individual reports. Prerequisite: GRM 202. Offered in Fall semester. *One semester; three credits*

GRM 302. ADVANCED GRAMMAR

A study of the more difficult aspects of the German language. Further training in written and oral communication, translation exercises. Prerequisite: GRM 301. Offered in the Spring semester. *One semester; three credits*

GRM 350-359. SPECIAL TOPICS IN GERMAN.

Topics of special interest related to German literature, language, or culture. Prerequisite: German 202 or the equivalent. Offered in Fall or Spring. *One semester; three credits*

GRM 450-459. SPECIAL TOPICS IN GERMAN.

Topics of special interest related to advanced study of German literature, language, or culture. Prerequisite: at least three 300-level courses in German or permission of instructor. Offered in Fall or Spring. *One semester; three credits*

■ GLOBAL STUDIES COURSE

GS 200. FOUNDATIONS OF GLOBAL STUDIES

In this course we will explore the diverse and often conflicting meanings associated with the concept of globalization. We will examine world geography with respect to major regions and consider political, economic, and cultural systems with an eye to what it means in the 21st century to be or become a "global citizen." The course will be interdisciplinary and will offer the students the opportunity to examine ways to "globalize" their horizons, their major disciplines, and their career paths. (Same as HUM 200). *One semester; three credits*

GS 300-301. SPECIAL TOPICS IN GLOBAL STUDIES

Special topics courses of interest which include some study abroad. Offered as needed. *One semester; one to three credits*

■ GREEK COURSES

The foreign language courses under this heading are offered on the campus of Rhodes College under the instruction of Rhodes faculty. See the Dean of School of Arts concerning these classes.

GREK 101-102. ELEMENTARY GREEK.

An introduction to the fundamentals of the ancient Greek language. Although the primary goal of the elementary sequence of courses through Greek 201 is to prepare students to use ancient Greek documents in a wide variety of academic contexts, students will develop all four language skills: reading, writing, listening, and speaking. Offered in sequence in Spring and Fall. *Two semesters; eight credits*

GREK 201. INTERMEDIATE GREEK.

The final course in the elementary language sequence. To prepare students for the advanced reading courses, the course will emphasize reading and discussing documents primarily from

the fifth and fourth centuries BCE. In addition to developing their reading comprehension, students will continue to work on their aural-oral proficiency. Prerequisite: Greek 102 or the equivalent. Offered in Spring. *One semester; four credits*

GREK 210-219. READING COMPONENT IN GREEK.

Readings from classic texts of literature, history, culture, biography, or religion. Prerequisite: Greek 201 or the equivalent. Offered in Fall or Spring. *One semester; one to three credits*

■ HEBREW COURSES

The foreign language courses under this heading are offered on the campus of Rhodes College under the instruction of Rhodes faculty. See the Dean of School of Arts concerning these classes.

HEBR 101-102. BIBLICAL HEBREW.

Introduction to the grammar and vocabulary of the Hebrew Bible/Christian Old Testament. By the end of a year's study, students should be able to read much of the prose material of the Bible. Offered in sequence in Fall and Spring. *Two semesters; six credits*

HEBR 201. INTERMEDIATE HEBREW.

Readings in biblical Hebrew prose emphasizing grammar, vocabulary, syntax, and translation. Prerequisite: Hebrew 102 or the equivalent. Offered in Fall. *One semester; three credits*

■ HISTORY COURSES

Requirements for the degree are found on Page 51.

HIST 103. WESTERN CIVILIZATION TO 1660

A survey of western civilization from the ancient Middle East to the early modern era. *One semester; three credits*

HIST 104. WESTERN CIVILIZATION SINCE 1660

A survey of western civilization from the early modern era to the present. *One semester; three credits*

HIST 107. WORLD CIVILIZATION TO 1500

An introduction to the political, economic, social, and cultural histories of Asia, the Middle East, Africa, and pre-Columbian Central and South America to 1500. *One semester; three credits*

HIST 108. WORLD CIVILIZATION SINCE 1500

An introduction to the political, economic, social, and cultural histories of Asia, the Middle East, and Africa since 1500. *One semester; three credits*

HIST 151. AMERICAN SOCIETY TO 1877

Colonial America; the Revolution; Confederation and Constitution; Ante-Bellum Period; the Civil War and Reconstruction. *One semester; three credits*

HIST 152. AMERICAN SOCIETY SINCE 1877

Post-Civil War Industrialization and Reform; the Progressive Era; World War I; the Depression and the New Deal; World War II; the Cold War; Recent Developments. *One semester; three credits*

HIST 200-210. TOPICS IN HISTORY

Topics vary with instructor. Prerequisite: History majors and minors must receive the permission of the department chair and are permitted a maximum of 3 credit hours in this 200 level topics area. *One semester; three credits*

UPPER DIVISION COURSES ARE OPEN TO STUDENTS WHO HAVE MET SPECIFIC COURSE PREREQUISITES.

HIST 301. ANCIENT CIVILIZATION

A study of the origins of civilizations in the Near East and the Mediterranean area: Mesopotamia, Egypt, Israel, Persia, Greece, Rome. Prerequisite: HIST 103 or Permission of the instructor. *One semester; three credits*

HIST 305. THE MIDDLE AGES

A political, economic, social, and intellectual history of medieval western civilization. Among other things, the course will cover topics such as the transition from Roman to Medieval civilization, monasticism, feudal society, the religious and intellectual revival of the High Middle Ages, the Papal Monarchy and the Crusades, the Black Death and the transition from Medieval to early modern European civilization. Prerequisite: HIST 103 or Permission of the instructor. *One semester; three credits*

HISTORY 307. FOUNDATIONS OF ISLAMIC CIVILIZATION

This course will examine the origins of Islam and the expansion of the Islamic state out of Arabia into the Mediterranean and Central Asian regions. In addition to political history, the course will examine intellectual, social, and economic topics. This course is cross-listed with the Department of Philosophy and Religion. Prerequisite: either HIST 103, 107 or RS 270 or Permission of the instructor. *One semester; three credits*

HISTORY 309. MODERN MIDDLE EAST, 1800 TO PRESENT

This class will detail the history of the Modern Middle East from a political, economic, and social perspective. The course will cover the region from North Africa to Iran, and it will address such issues as the confrontation with Europe, the rise of nationalism and nation-states, the role of imperialism, the Arab-Israeli conflict, and the rise of political and radical Islamic movements. Prerequisite: HIST 104 or 108 or Permission of the instructor. *One semester; three credits*

HIST 311. ARAB-ISRAELI CONFLICT

This course examines the origin and history of the modern state of Israel and its relationships with its neighbors in the Middle East. Beginning with the early movements of Zionism, this course will explore the factors responsible for the creation of the state of Israel, the reaction of peoples and states in the Middle East to the new state, and the military, cultural, and ideological consequences of this conflict. Prerequisite: HIST 104 or 108 or Permission of the instructor. *One semester; three credits*

HIST 336. EUROPE IN THE AGE OF EMPIRE

This course will examine the evolution of modern imperialism from the 18th through the early 20th century. In addition to the military and political expansion of Europe abroad, the course will examine the economic and cultural impact of modern imperialism on the colonized, as well as the colonizer. Prerequisite: HIST 104 or 108 or Permission of the instructor. *One semester; three credits*

HIST 338. RUSSIA SINCE 1861

A study of the political, economic, social, and intellectual history of 19th Century Imperial Russia, the Soviet Union, and Post-Soviet Russia. Prerequisite: HIST 104 or Permission of the instructor. *One semester; three credits*

HIST 339. GERMANY SINCE 1871

A study of the political, economic, social, and intellectual history of Germany from the Franco-Prussian War to the present. Prerequisite: HIST 104 or Permission of the instructor. *One semester; three credits*

HIST 340. NAZI GERMANY

An examination of Hitler's ideology and life, the tumultuous end of the Weimar Republic, the

emergence of the Nazi party, the Nazi take-over of power, German society during the Third Reich, Germany during the Second World War, the murder of the Jews, and the Nazi legacy for postwar Germany. Prerequisite: HIST 104 or Permission of the instructor. (Same as POLS 340) *One semester; three credits*

HIST 342. COLONIAL AMERICA

A study of primarily British North America from settlement to 1763 with some discussion of Spanish, French and Indian cultures. Prerequisite: HIST 151 or Permission of the instructor. *One semester; three credits*

HIST 343. THE AMERICAN REVOLUTION AND EARLY NATIONAL PERIOD

A study of the origins, causes, and results of the American Revolution; the Confederation Period; the Constitutional Convention; the early years of the new nation; emphasis on the emergence of political parties and the Jefferson Presidency. Prerequisite: HIST 151 or Permission of the instructor. *One semester; three credits*

HIST 345. THE ANTEBELLUM SOUTH

The study of social, cultural, economic, and political developments in the antebellum South. Prerequisite: HIST 151 or Permission of the instructor. *One semester; three credits*

HIST 346. THE CIVIL WAR AND RECONSTRUCTION

An examination of the causes of the Civil War; a comparison of the Union and the Confederacy; military phases of the War; emphasis on Lincoln and Davis; aftermath of the Civil War and the role of the Radical Republicans. Prerequisite: HIST 151 or Permission of the instructor. *One semester; three credits*

HIST 347. EMERGENCE OF MODERN AMERICA

A political, economic, social, and diplomatic history of America from the end of Reconstruction to the Great Depression. Prerequisite: HIST 152 or Permission of the instructor. *One semester; three credits*

HIST 348. MODERN AMERICA

A political, economic, social, and diplomatic history of America from the Great Depression to the present. Prerequisite: HIST 152 or Permission of the instructor. *One semester; three credits*

HIST 349. THE SOUTH SINCE RECONSTRUCTION

A survey of the political, economic, social, and cultural history of the eleven former Confederate states since 1877. Prerequisite: HIST 152 or Permission of the instructor. *One semester; three credits*

HIST 350. HONORS AFRICAN-AMERICAN HISTORY

Social, cultural, economic, and political role of African-Americans in the United States from 1619 to the present. Prerequisite: HIST 151, 152, Membership in Honors Program or Permission of the instructor. *One semester; three credits*

HIST 360. AMERICAN POLITICAL THOUGHT

(Same as POLS 360) Prerequisite: HIST 151 or POLS 112 or Permission of instructor. Offered in the Fall semester. *One semester; three credits*

HIST 375. UNITED STATE FOREIGN POLICY

This course will examine the history and practice of U.S. foreign policy. It will examine current issues in U.S. foreign policy, the organization and function of institutions, how decisions are made, and the politics of foreign policy making. Prerequisite: any political science or history course or Permission of the instructor. Recommended but not required, one of the following: HIST 152 or POLS 112 or POLS 113. (Same as POLS 375) *One semester; three credits*

HIST 385-389. SPECIAL TOPICS IN NON-WESTERN HISTORY

Topics vary with instructor. Prerequisite: Permission of the instructor. *One semester; three credits*

HIST 390-399. HONORS SPECIAL TOPICS

Special topics in history open to members of the Honors Program or by permission of instructor. *One semester; one to four credits*

HIST 401-402. INTERNSHIP

Content varies with specific internship program. Prerequisites: Permission of History Internship Director and Junior standing. *One semester each; one to three credits each*

HIST 490-497. TOPICS IN HISTORY

Topics vary with instructor. Prerequisite: Permission of instructor. *One semester; three credits*

■ HUMANITIES COURSES**HUM 150. PERSPECTIVES ON PUBLIC LIFE**

This course will examine what it has meant throughout history and in different cultures to be a member of a society. Students will learn about and critically analyze the role of the individual in civil society from depictions in history, literature, religion, philosophy, and the fine arts. A key aim of the course is to provide students with essential insight into the opportunities and justification for lives of community involvement. Offered in the Fall and Spring. *One semester; three credits*

HUM 160. HONORS PERSPECTIVES ON PUBLIC LIFE

This honors seminar will examine what it has meant throughout history and in different cultures to be a member of society. The primary focus will be on the role of the individual in civil society as depicted in history, literature, religion, philosophy, and the fine arts. Students will be required to complete a service learning project and follow-up paper/class presentation in which opportunities and justifications for lives of community involvement are explored. Prerequisite: Membership in the Honors Program. *One semester; three credits*

HUM 200. FOUNDATIONS OF GLOBAL STUDIES

In this course we will explore the diverse and often conflicting meanings associated with the concept of globalization. We will examine world geography with respect to major regions and consider political, economic, and cultural systems with an eye to what it means in the 21st century to be or become a “global citizen.” The course will be interdisciplinary and will offer the students the opportunity for students to examine ways to “globalize” their horizons, their major disciplines, and their career paths. (Same as GS 200) *One semester; three credits*

HUM 254. CHRISTIANITY AND PEACE (Formerly HUM 354)

(Same as RS 254) *One semester; three credits*

HUM 256. RELIGION AND NON-VIOLENT SOCIAL CHANGE (Formerly HUM 356)

(Same as RS 256) *One semester; three credits*

HUM 295, 395. COMMUNITY SERVICE

A structured opportunity for students to select and participate in a community service project in the Memphis area. Includes regular meetings with the faculty advisor, group meetings for reflection and discussion. Normally involves a minimum of 60 hours of service. *One semester; three credits*

HUM 306. COMPUTERS AND SOCIETY

An examination of the social implications of computer technology and of the special social and ethical issues raised by the growing use of computers in all aspects of human life, including business and finance, science, education, government, etc. Among topics considered will be

privacy and security, quality of work life, the potentials and problems of computer modeling, information systems and artificial intelligence, and the responsibilities of computer professionals and others for the use of computers. *One semester; three credits*

HUM 498. HONORS INTEGRATIVE SEMINAR

As a required capstone experience, each Honors student will participate in the Honors Integrative Seminar in either the Junior or Senior year. Using an interdisciplinary approach and drawing upon a special topic or theme that can vary from year to year, students will critically reflect upon their academic major and previous Honors courses in the context of broader moral visions and public commitments. *One semester; three or four credits*

■ INFORMATION TECHNOLOGY MANAGEMENT COURSES

Requirements for the major are found on Page 77. ITM courses with an asterisk () are "Key ITM Skill Courses," and as such have a final comprehensive exam. A student must get a passing grade to pass the entire course.*

ITM 153. INTRODUCTION TO MICROCOMPUTERS AND BUSINESS APPLICATIONS

This course is intended to provide a working knowledge of microcomputers and their more common applications, including word processing, presentation, spreadsheet, and data base management software. The integration of these products will also be covered. *One semester; three credits*

ITM 251. INTRODUCTION TO PROGRAMMING AND ALGORITHMS

The purpose of this course is to introduce the ITM major to the computational environment, algorithms, and elementary programming. Use of CBU computational resources will also be covered including: email, ftp, telnet, and operating system commands (unix, dos, etc.). Topics include an overview of number systems, data representation, data organization, boolean logic, digital circuit design, algorithm discovery and expression using pseudocode and flowcharts, algorithm implementation and efficiency, and programming syntax and constructs (control structures and iteration). The Java language (both command line and IDE implementations) will be used for programming exercises and projects; however, other language features and syntax will also be illustrated. Prerequisite: ITM 153 and MATH 105. *One semester; three credits*

ITM 252. COMPUTATIONAL LOGIC

The purpose of this course is to introduce the ITM major to computational logic and discrete math. Topics include data organization (sets, vectors, matrices), graphing applications, computer languages and programming syntax and constructs (functions and arrays), and computation models. The Java language will be used for programming exercises and projects. Prerequisite: ITM 251 and MATH 106. *One semester; three credits*

ITM 271. ITM SEMINARS

Through contractual arrangements with companies, government agencies, and/or organizations, the ITM Department of the School of Business will offer courses on selected topics. Students may take up to nine seminars as long as titles and content are clearly distinctive. Credit awarded may be used as free electives hours only. Enrollment is limited and requires permission of the Director of the associated program or Dean of the School of Business. *One semester; one, two, or three credits*

ITM 291. TELECOMMUNICATIONS I*

This class is the first of a two-part sequence that introduces students to the world of telecommunications. Beginning with an introduction to basic electrical concepts, this course covers the concepts in first three levels of the ISO/OSI model of communications. These concepts include

signaling, transmission media characteristics, encoding, interfacing, data-link control and multiplexing. Prerequisites: ITM 153, MATH 105, and MATH 106. *One semester; three credits*

ITM 292. TELECOMMUNICATIONS II*

This class builds on ITM 291 and covers the concepts found in the upper four levels of the ISO/OSI model. These include coverage and analysis of protocols and technologies utilized in local and wide area networking. Prerequisite: ITM 291. *One semester; three credits*

ITM 320. JAVA PROGRAMMING

This course formally introduces the Java languages with a focus on developing solutions to business problems. Topics such as data types, classes, conditional logic, iteration and looping, general program control flow and structured design, functions, arrays, strings, standard file I/O, and introduction to graphical user interfaces. Prerequisites: ITM 251, 252. *One semester; three credits*

ITM 351. SYSTEMS ANALYSIS AND DESIGN*

This course presents methods for analyzing and designing appropriate and defensive solutions to business problems. The course emphasizes the Systems Development Life Cycle (SDLC) methodology. Classical and structured tools are applied to business analysis and problem solving situations with adjustments as required to today's business environment. Included are process flows, data structures, justification and costing techniques, conversion and implementation procedures and the underlying SDLC methodology. A case study is employed to provide a practical "hands-on" approach. Prerequisite: ITM 153 or CS 122. *One semester; three credits*

ITM 352. SOFTWARE ENGINEERING

An exploration of current issues related to the use of object oriented analysis and design techniques, tools, and methodologies. Emphasis is placed on the use of object oriented techniques to develop solutions to business problems. Prerequisites: ITM 320, CS 122, or CS 234. *One semester; three credits*

ITM 356. ADVANCED C++ PROGRAMMING

An introduction to object oriented programming using the C++ language to solve business problems. This class includes a solid understanding of C pointers and C++ classes and references. Topics such as object oriented analysis and design, member functions, templates, composition, inheritance, and graphical user interfaces will be covered. Prerequisites: ITM 251, 252, or Permission of the instructor. *One semester; three credits*

ITM 385. OPERATING SYSTEMS AND NETWORKS

This lab-based course examines the design, implementation, philosophy, and structure of modern operating systems. Topics include file structures, memory structures, process control, protection, commands, shells, and usage. Lab exercises involving planning, implementation and configuration of distributed systems are used to reinforce concepts presented. The course compares and examines the design, philosophy, and structure of modern operating systems such as Unix, Linux, Microsoft Windows, IBM's MVS, etc. Prerequisite: ITM 251, 291. *One semester; three credits*

ITM 400. INFORMATION TECHNOLOGY MANAGEMENT INTERNSHIP

(Formerly BUS 400) Under the supervision of a faculty member from the appropriate department, students in the School of Business, after receiving the approval of the faculty, are placed in the offices of cooperating firms to receive on-the-job training under the supervision of members of the firm. Credit is granted upon acceptance of periodic reports and a final summary report of work done verified by the authorized supervisor and the instructor. Prerequisites: ITM 251, 252, 291, and 351. *Pass/Fail Grading. One semester; three credits*

ITM 451. DATA BASE DESIGN*

The course presents database design and management and emphasizes the relational model and Structured Query Language. Topics include database models, query languages, query optimization, database implementation, distributed processing, and security. Prerequisites: ITM 153, 251 or CS 122, or Permission of the instructor. *One semester; three credits*

ITM 455. INFORMATION SYSTEMS MANAGEMENT

This course is designed to explore and put to practical use the entire body of knowledge gained in previous ITM courses. Topics will principally focus upon the managerial aspects of effective information technology deployment. Case studies will be utilized to challenge students to understand the management of technology coupled with technology skills necessary to recommend effective technology solutions. Class discussion and preparation of “position statements” on technology issues will be a main focus of the course. A final project will test student’s ability to apply technology and business skills to develop a workable, manageable, and effective information systems solution. Prerequisites: ITM 251, 252, 351 with prerequisite or corequisites ITM 451 or CS 122, and ITM 351 with prerequisite or corequisite of CS 392. *One semester; three credits*

ITM 456. JAVA PROGRAMMING

In this course, students will learn the Java programming language and the class libraries (packages) supporting same. Both Java Applets, Applications, and Servlets will be covered. Students will complete business projects in the areas of Graphical User Interfaces, Internet Networking, and Database interconnection. Prerequisites: ITM 251, ITM 252, or CS 122. *One semester; three credits*

ITM 457 SPECIAL TOPICS IN ITM

Course designed to permit intensive study into topics of special interest and timeliness in the area of Information Technology Management. Prerequisites depend upon topics and approval of instructor. *One semester; three credits*

ITM 458. VISUAL BASIC AND NET PROGRAMMING

This course introduces students to Visual Basic programming and its applications in the business world. The students will be introduced to the Visual Basic Integrated Development Environment (IDE) and its development tools. Visual Basic programming fundamentals such as working with variables and subroutines, procedures and functions, number and string manipulation, and control structures will be covered. Through projects and hands-on exercises, students will learn to design and develop visual interfaces for data storage management and data processing. Prerequisites: ITM 251, ITM 252, or CS 122. *One semester; three credits*

ITM 460-466. SPECIAL TOPICS IN INFORMATION TECHNOLOGY MANAGEMENT

Courses are designed to permit intensive study into topics of special interest and timeliness in the area of information technology management. *One semester; three credits*

ITM 470. INTERNET PROGRAMMING

This course familiarizes students with the total Internet programming environment, teaches students the basics of key Internet programming technologies (HTML, JavaScript, Dynamic HTML, CSS, CGI, PHP, Servlets/JSP, and XML), and trains students in the application and usage of key Internet programming tools. Upon completion of this course, students will be able to create and maintain modern advanced dynamic web sites. Prerequisites: ITM 251, ITM 252, or CS 122. *One semester; three credits*

ITM 480. DECISION SUPPORT (Formerly ITM 380)

This course provides an examination of the role of technology and information systems in the

business decision making process. The focus will be on decision support systems and will provide introductions to important modern decision-aiding tools and approaches including network analysis, linear and non-linear programming, optimization, simulation, groupware, artificial intelligence (expert systems, neural networks, genetic programming), pattern recognition, executive information systems, data warehousing, and data mining. Prerequisites: ITM 153, 451 or CS 122, 392. *One semester; three credits*

■ INTERDISCIPLINARY STUDIES COURSE

IDS 101. DIMENSIONS OF FAITH AND CITIZENSHIP

This interdisciplinary course provides an introduction to faith and citizenship through an introduction to the Christian Brothers University community. The course asks students to identify and assess their roles and responsibilities as citizens in the multiple communities to which they belong. The core CBU and Lasallian values of faith, community, service, and integrity provide a context for understanding local, national, and global dimensions of faith and citizenship. Opportunities for community service will be offered. This course is designed as part of a shared first-year experience. All students enrolled in a section of IDS 101 will be required to enroll in a paired section of ENG 111, forming a learning community. *One semester; three credits*

■ LATIN COURSES

The foreign language courses under this heading are offered on the campus of Rhodes College under the instruction of Rhodes faculty. See the Dean of School of Arts concerning these classes.

LATN 101-102. ELEMENTARY LATIN

An introduction to the fundamentals of the Latin language. Although the primary goal of the elementary sequence of courses through Latin 201 is to prepare students to use Latin documents in a wide variety of academic contexts, students will develop all four language skills: reading, writing, listening, and speaking. Offered in sequence in Fall and Spring. *Two semesters; eight credits*

LATN 201. INTERMEDIATE LATIN

The final course in the elementary language sequence. To prepare students for the advanced reading courses, the course will emphasize reading and discussing documents primarily from the late republic and Augustan Age. In addition to developing their reading comprehension, students will continue to work on their aural-oral proficiency. Prerequisite: Latin 102 or the equivalent. Offered in Fall. *One semester; four credits*

LATN 210-219. READING COMPONENT IN LATIN.

Readings from classic texts of literature, history, culture, biography, or religion. Prerequisite: Latin 201 or the equivalent. Offered in Fall or Spring. *One semester; one to three credits*

■ MANAGEMENT COURSES

Requirements for the degree are found on Page 78.

MGMT 300. INTERNATIONAL BUSINESS & CULTURAL EXPERIENCE

This course introduces students to the business, political, economic, and cultural environments of a selected country. Experiential study, classroom lectures, and activities including site visits, guest lectures, and cultural experiences are integrated to develop a comprehensive understanding of the country selected. The course content includes a visit to the country selected for study. Open to all students with approval from the Dean of the School of Business. Students must have a valid passport. Course may be repeated for different countries. (Same as MKTG 300) *One semester; three credits*

MGMT 337. PRINCIPLES OF ORGANIZATION AND MANAGEMENT

An examination of the management functions and the basic concepts and principles of man-