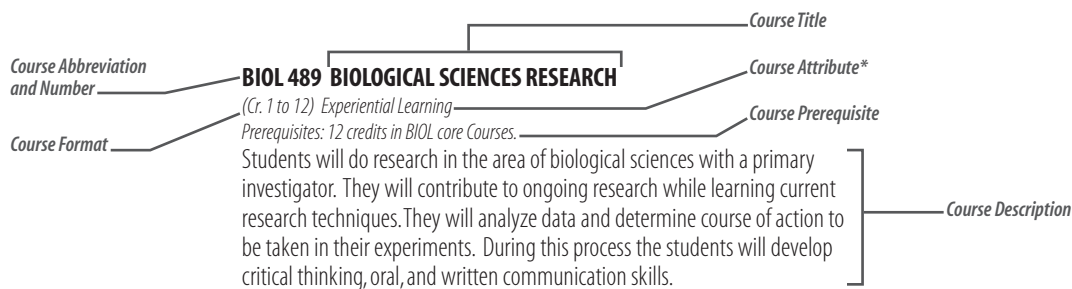


Course Listing

In this section, each course offered at Purdue University Calumet is listed in alphabetical order by course abbreviation. Courses numbered 1-499 are primarily for undergraduate students. Courses numbered 500-599 are for undergraduates (usually juniors and seniors) and graduate students. Courses numbered 600 and above are for graduate students only.

Each course should be interpreted as follows. First is the abbreviation of the course, then its number and title. Second is the course format, which shows the number of hours each week the class meets, lab hours if appropriate, and credit hours for the course. Third is a list of prerequisites, if necessary. Fourth is the description of the course.



SUBJ. CODE	DESCRIPTION	SUBJ. CODE	DESCRIPTION	SUBJ. CODE	DESCRIPTION
A&D	Art & Design	EQU	Equine Management	MFET	Manufacturing Engineering Technology
ANSC	Animal Science	ET	Engineering Technology	MGMT	Management
ANTH	Anthropology	ETHN	Ethnic Studies	MSE	Materials Engineering
ARAB	Arabic	F&N	Foods and Nutrition	MILT	Military Service
ARET	Architectural Technology	FLL	Foreign Languages and Literatures	MSL	Military Science and Leadership
ASTR	Astronomy	FM	Fitness Management	MUS	Music History and Theory
BA	Business Administration	FR	French	NRES	Natural Resources and Environmental Sciences
BHS	Behavioral Sciences	GEOG	Geography	NUR	Nursing
BIOL	Biology	GER	German	OBHR	Organizational Behavior
CE	Civil Engineering	GNS	General Studies	OLS	Organizational Leadership and Supervision
CS	Computer Science	GREK	Greek	PHIL	Philosophy
CDFS	Child Development and Family Studies	HEBR	Hebrew	PHYS	Physics
CET	Civil Engineering Technology	HIST	History	PLSH	Polish
CGT	Computer Graphics Technology	HONR	Honors	POL	Political Science
CHM	Chemistry	HORT	Horticulture	PSY	Psychology
CHNS	Chinese	HSCI	Health Sciences	PTGS	Portuguese
CIS	Computer Information Systems	HTM	Hospitality and Tourism Management	RUSS	Russian
CMET	Construction Management Engineering Technology	IDIS	Interdisciplinary Studies	SCI	Science
COM	Communication	IE	Industrial Engineering	SERV	Service Learning
EAS	Earth, Atmospheric Sciences	IET	Industrial Engineering Technology	SOC	Sociology
ECE	Electrical, Computer Engineering	ITAL	Italian	SPAN	Spanish
ECET	Electrical, Computer Engineering Technology	ITS	Information Technology Systems	SRCT	Serbo-Croatian
ECON	Economics	JPNS	Japanese	STAT	Statistics
EDCI	Education, Curriculum and Instruction	LAS	Latin American Studies	SWAH	Swahili
EDFA	Educational Foundations and Administration	LATN	Latin	TECH	Technology
EDPS	Education and Professional Studies	LTHN	Lithuanian	THTR	Theater
ENGL	English	MA	Mathematics	URDU	Urdu
ENGR	Engineering	ME	Mechanical Engineering	WOST	Women's Studies
ENTR	Entrepreneurship	MET	Mechanical Engineering Technology		

*For more information about TRANSFER IN, visit www.TransferIn.net
 *For more information about Experiential Learning, visit www.calumet.purdue.edu/exl/

Art & Design

A&D 105 DESIGN I

(Lab. 6, Cr. 3)

Two-dimensional design fundamentals: concepts and processes Studio problems are used to introduce design concepts vocabulary, and skills applicable to continued study in a variety of visual disciplines. Includes introduction to a variety of two-dimensional media and computer applications.

A&D 106 THREE-DIMENSIONAL DESIGN FUNDAMENTS; CONCEPTS AND PROCESSES

(Lab. 6, Cr. 3)

Studio problems introduce design concepts, vocabulary and construction skills applicable to continued study in a variety of visual disciplines. Includes introduction to a variety of 3-D media and 3-D computer graphics concepts.

A&D 112 GRAPHIC ARTS I: TYPOGRAPHY

(Class 2, Lab. 2, Cr. 3)

Students investigate mechanics of type, using both type and letter forms in a variety of design applications. Students will also experiment with typographic composition, contrast, text, and value in combination with language.

A&D 113 BASIC DRAWING

(Lab. 6, Cr. 3) TRANSFER IN

An introduction to drawing and sketching as a means of communication of ideas.

A&D 114 DRAWING II

(Lab. 6, Cr. 3)

Prerequisite: A&D 113

Continuation of A&D 113; emphasis is given to the exploration of a variety of media and the structuring of pictorial space.

A&D 140 ENTREPRENEURSHIP IN ART AND DESIGN

(Class 3, Cr. 3)

Basic business skills are surveyed and case studies of successful self-employed artists and entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for converting artistic and design skills into self-employment and entrepreneurship.

A&D 203 ART ACTIVITIES FOR ELEMENTARY TEACHERS

(Class 1, Lab. 2, Cr. 2)

An undergraduate course designed to assist the student in gaining basic skills in art media and method as a beginning classroom teacher. This exposure to the basic art program should provide a stimulating, enrichment art program for the classroom.

A&D 204 GRAPHIC ARTS II: DIGITAL IMAGING

(Class 2, Lab. 2, Cr. 3)

This course introduces the computer as a powerful tool for manipulating and creating images. Students are encouraged to use their own photography and develop their own styles. Adobe Photoshop software package is the primary image processing program used to digitally enhance, alter and retouch images. Electronic layout and typographical issues are discussed, and a page layout program is introduced to combine text with image.

A&D 222 INTRODUCTION TO PHOTOGRAPHY

(Class 2, Lab. 2, Cr. 3)

This course presents a study of basic photographic technique from a practical and artistic point of view. Students will be presented with the opportunity to develop aesthetic and compositional skills while building a portfolio of significant images. A 35mm camera with adjustable controls or a digital camera is required.

A&D 255 ART APPRECIATION

(Class 3, Cr. 3) TRANSFER IN

Understanding and appreciation of the origins and growth of art. A trip to a major museum is included in the course.

A&D 290 SPECIAL TOPICS IN ART AND DESIGN

(Class 1 to 3, Cr. 1 to 3)

Topic will vary.

A&D 392 SPECIAL TOPICS IN ART

(Class 1 to 3, Cr. 1 to 3)

Topics will vary.

A&D 403 PORTFOLIO PROCESS AND PRESENTATION

(Class 2, Lab. 2, Cr. 3)

The process of organizing, editing, and packaging work in a cohesive system will be illustrated in lecture, individualized studio projects, and on-site portfolio reviews. The course will focus on presentation as well as the building of the portfolio and students will participate in discussions, critiques, resume preparation, and mock interviews. Copyright issues and ownership of work will also be discussed.

A&D 491 SPECIAL TOPICS IN ART

(Class 1 to 3, Cr. 1 to 3)

Topics will vary.

A&D 590 SPECIAL ART PROBLEMS

(Cr. 1 to 6)

Consent of the instructor and the head of the department required. Individual problems in art history, appreciation, design, crafts, drawing, and painting. Credit dependent upon amount of work done.

Animal Science

ANSC 101 ANIMAL AGRICULTURE

(Class 3, Cr. 3)

Importance of livestock in the field of agriculture and the place of meats and other animal products in the human diet.

ANSC 221 PRINCIPLES OF ANIMAL NUTRITION

(Class 3, Cr. 3)

A study of the digestive processes, composition of feedstuffs, nutritional requirements, and formulation of practical rations for farm animals.

Anthropology

ANTH 105 INTRODUCTION TO CULTURAL ANTHROPOLOGY

(Class 3, Cr. 3)

An introduction to the science of man and his works. Emphasis on the nature of culture and culture change; relationship of culture and personality. Attention given to the variations with the Universal institutions of man: language, technology, the family, systems of social control, economics, warfare, religion, art, and values. Processes of invention, diffusion and acculturation; theoretical interpretations of the direction and process of cultural development.

ANTH 204 INTRODUCTION TO HUMAN EVOLUTION

(Class 3, Cr. 3)

An outline of human evolution interrelating man's changing physical characteristics with his evolving social and cultural adaptations. Man's relationships to the other primates, both physically and behaviorally are explored within an evolutionary framework. The archaeological record is used to document the history of man during the last five million years. Transformations of human life initiated by the domestication of plants and animals are outlined using archaeological data from the Near East and Mexico.

ANTH 341 CULTURE AND PERSONALITY

(Class 3, Cr. 3)

Prerequisites: Three hours of anthropology, sociology, child development or psychology, or equivalent

A cross-cultural survey stressing differing basic personality types and the process by which adult personality is acquired. Case studies of selected nonwestern cultures will be used to provide comparative perspective. (Not open to students with credit in Soc 341)

ANTH 379 INDIANS OF NORTH AMERICA

(Class 3, Cr. 3)

Prerequisites: Three hours of anthropology or sociology

General survey of North American Indian cultures Prehistory, the ethnographic present, types of culture contact and culture change, and current Indian cultures and pre-Indianism will be given extensive coverage. Aspects of American Indian family structure, languages, political organization, religion, technology, and aesthetics will also be studied.

ANTH 414 INTRODUCTION TO LANGUAGE AND CULTURE

(Class 3, Cr. 3)

Prerequisite: ANTH 105

This course introduces undergraduate students to the anthropological view of language. Communication systems of other animals will be discussed to highlight the importance of language in the development of culture. Various theories of language and the diversity of language will be investigated. The anthropologist's view of language structure, linguistic change, and writing systems will be presented. There will be a strong emphasis on the relation of language to other aspects of culture. Non-Indo-European languages will be compared to American English throughout the course.

ANTH 590 INDIVIDUAL RESEARCH PROBLEMS

(Cr. 1 to 3)

Individual research or reading in an area of anthropology under an anthropologist staff member. Does not include thesis work.

Arabic

ARAB 101 ARABIC LEVEL I

(Class 3, Lab. 1, Cr. 3)

Introduction to the basic skills in the language

ARAB 102 ARABIC 102. LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: ARAB 101

This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

Architectural Technology

ARET 117 CONSTRUCTION DRAFTING AND CAD

(Class 1, Lab. 5, Cr. 3)

Introduction to drafting fundamentals with emphasis on architectural and civil engineering topics. Develop basic drafting skills, using orthographic projections, auxiliary views and perspectives. Students will be introduced to the fundamentals of CAD.

ARET 170 MATERIALS & SYSTEMS OF CONSTRUCTION

(Class 3, Cr. 3)

An introduction to the nature of the construction industry and a survey of the most commonly used construction materials with special emphasis on their properties characteristics, limitations and applications into different construction elements and systems such as foundations, columns, trusses, arches, frames, etc. Guest speakers will discuss the nature and opportunities within the construction industry.

ARET 222 ARCHITECTURAL CONSTRUCTION II

(Lab. 6, Cr. 3 or Lab. 9, Cr. 3)

Prerequisite: ARET 250, or consent of instructor

Preparation of preliminary and working drawings for an intermediate-sized commercial or institutional building.

ARET 250 ARCHITECTURAL CONSTRUCTION I

(Class 1, Lab. 5, Cr. 3) *Experiential Learning*

Prerequisite: ARET 117, or consent of instructor

A study of wood frame construction through a semester project requiring planning, preliminary and working drawings, and a model of the framing system. Field trips may be included.

ARET 276 SPECIFICATIONS AND CONTRACT DOCUMENTS

(Class 3, Cr. 3)

Analyze the content and organization of specifications and how they relate to working drawings during construction. A study of the various types of contract documents used for construction.

ARET 283 MECHANICAL AND ELECTRICAL EQUIPMENT FOR BUILDINGS

(Class 3, Cr. 3)

Prerequisite: ARET 250, or consent of instructor

A survey of basic environmental systems, including heating ventilating, air conditioning, plumbing, lighting and electrical equipment. A discussion of standard

design parameters including an introduction to heat loss and heat gain calculations and circuit loads. Emphasis is placed on definitions, types of systems and the physical characteristics of equipment.

ARET 299 ARCHITECTURAL ENGINEERING TECHNOLOGY

(Cr. 1 to 4)

Hours and subject matter to be arranged with staff. (Course may be repeated for credit up to nine hours.)

ARET 312 HISTORY OF ARCHITECTURE II

(Class 3, Cr. 3)

Not open to students with credit in HIST 316 The study of western architecture of the eighteenth, nineteenth, and twentieth centuries with an emphasis on the related structural, technological, socio-economic and cultural influences that caused the architectural expressions of this periods.

ARET 425 SOLAR CONSTRUCTION

(Class 3, Cr. 3)

A study of building orientation, energy conservation principles, insulation, and a survey of passive and active solar energy systems. An investigation of building materials and systems of construction as they relate to passive solar energy systems.

ARET 499 ARCHITECTURAL TECHNOLOGY

(Class 1 to 4, Lab. 0 to 6, Cr. 1 to 6)

Hours, subject matter and credit to be arranged with staff. Course may be repeated for credit up to nine hours.

Astronomy

ASTR 263 DESCRIPTIVE ASTRONOMY: THE SOLAR SYSTEM

(Class 2, Lab. 2, Cr. 3)

Not available to students with credit in ASTR 363. A descriptive, largely non-mathematical course in astronomy intended for non-science majors. Topics include: description of the sky; historical development of astronomy; motion of the sun and moon; solar and lunar eclipses; the seasons and the calendar; the sun and the planetary system; comets, meteoroids, and asteroids. Includes required observing sessions.

ASTR 264 DESCRIPTIVE ASTRONOMY: STARS AND GALAXIES

(Class 2, Lab. 2, Cr. 3)

Not available to students with credit in ASTR 364. A descriptive, nonmathematical course in astronomy intended for non-science majors. Topics include: properties of stars; stellar birth and death; the Hertzsprung-Russel diagram; main sequence stars; binary systems; stellar clusters; red giants and white dwarfs; nova and supernova; neutron stars and black holes; galaxies and the cosmological red shift. Required observing sessions.

ASTR 265 DESCRIPTIVE ASTRONOMY: ASTRONOMICAL ORIGINS

(Class 2, Lab. 2, Cr. 3)

ASTR 265 is a largely non-mathematical course in astronomy intended for non-science majors. Topics will include ancient ideas about the origin of the Universe, cosmology, formation of Solar Systems, and the formation and evolution of life elsewhere in the Universe.

ASTR 363 INTERMEDIATE ASTRONOMY I

(Class 3, Cr. 3)

Prerequisite: MA 164 or PHYS 152 or PHYS 220

Not available for credit to students with credit in ASTR 263 or equivalent. Intended for students in science or engineering. Intermediate level introduction to start and their characteristics, stellar structure and evolution, solar astronomy, and observational techniques. Computer-based laboratories and several mandatory observing sessions form part of this course.

ASTR 364 INTERMEDIATE ASTRONOMY II

(Class 3, Cr. 3)

Prerequisite: MA 164 or PHYS 152 or PHYS 220

Intended for students in science or engineering Intermediate level introduction to neutron stars, supernovae, black holes, x-ray, and gamma-ray sources, galaxies, quasars and cosmology.

Business Administration

BA 105 QUANTITATIVE METHODS FOR BUSINESS

(Class 3, Cr. 3)

Quantitative techniques applied in business situations that are essential to business activities. Topics covered include finance charges and compound interest, patrol, tax deduction, depreciation, descriptive statistics and graphical analysis.

BA 120 PRINCIPLES OF ACCOUNTING I

(Class 3, Cr. 3)

A basic introduction to accounting practices, financial statements, and the accounting cycle in various forms of business organizations. Emphasis is on the accounting of assets, liabilities and owners of equity. This course is not open to Management Majors.

BA 121 PRINCIPLES OF ACCOUNTING II

(Class 3, Cr. 3)

Prerequisite: BA 120 and BA 105

A continuation of BA 120. Emphasis is on reporting issues including financial and cash flow statements.

BA 210 PRINCIPLES OF FINANCE

(Class 3, Cr. 3)

Prerequisite: BA 121 and MGMT 101

Analysis of the basic problems a business will confront in the formation, financial operations and termination of a business. Important financial issues including capital formation, utilizing capital markets and investments will be covered as well as general understanding of money and capital markets and monetary institutions.

BA 230 PRINCIPLES OF MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 101

The fundamentals of organizing a business to succeed. The planning, organizing, directing and controlling of business activities and the organizational plan to combine and allocate resources to meet expressed goals is the focus of this course.

BA 231 SURVEY OF HUMAN RESOURCES

(Class 3, Cr. 3)

Prerequisite: MGMT 101

Exposure to a wide variety of human resource activities in the business enterprise. Topics include staffing, development, compensation and labor relations. This course is not open to Management Majors.

BA 361 BUSINESS OPERATIONS

(Class 3, Cr. 3)

PREREQUISITE: BA 121 AND STAT 130

The operations function in a business enterprise. Topics include measuring capacity and productivity, product and process design, facility location and layout, inventory and scheduling.

BA 390 TOPICS IN BUSINESS

(Class 1 to 4, Cr. 1 to 4)

An opportunity to investigate and study particular problems and topics in the field of business.

BA 391 INTERNSHIP IN BUSINESS

(Class 1 to 3, Cr. 1 to 3)

Students work in a business organization in an organized and supervised situation, designed to provide experience and challenge in a business situation. Students are evaluated by the organization supervisor and the academic coordinator.

BA 490 PROBLEMS IN BUSINESS

(Class 1 to 4, Cr. 1 to 4)

Topics selected for enrichment and further study in special areas of business.

Behavioral Sciences

BHS 103 FRESHMAN EXPERIENCE IN BEHAVIORAL SCIENCES

(Class 1, Cr. 1)

This interdisciplinary course provides entering first-year students and transfer student with less than 60 credits an opportunity to become familiar with campus resources, academic life management, and discipline specific career exploration.

BHS 125 CHILDREN IN FAMILY CARE

(Class 3, Cr. 3)

An introduction to issues concerning the care of young children, the course will focus on practices appropriate for a wide range of children in family settings.

BHS 201 STATISTICAL METHODS FOR THE BEHAVIORAL SCIENCES

(Class 3, Cr. 3)

Working knowledge of high school algebra required Not open to students with credit in PSY 500 An introduction to descriptive and inferential statistics as applied to the behavioral sciences.

BHS 205 INTRODUCTION TO FAMILY DYNAMICS

(Class 3, Cr. 3)

Prerequisite: PSY 120 or SOC 100

An examination of the interpersonal process that takes place within family contexts. Emphasis is on family dynamics with an extended focus on family interaction, family relationships, intimacy, conflict management and stages of family development. Also considered are linkages between family process and the broader social environment and basic components of the research process.

BHS 216 INTRODUCTION TO EARLY CHILDHOOD

(Class 3, Cr. 3)

A survey of early education programs, including center based, infant/toddler, after school, family child care, and kindergarten. Course will include consideration of the history & theory of early childhood programs; program routines and organization for the healthy intellectual, social & physical growth of young children; professional relationships with parents and staff.

BHS 217 ISSUES IN EARLY CHILDHOOD EDUCATION

(Class 3, Cr. 3)

Prerequisite: BHS 216

Study promoting positive development of children in a group environment. Course will focus on the importance of language, child initiative and activity, and social-emotional guidance. Issues will be discussed in light of multicultural diversity, and special needs of children.

BHS 224 LANGUAGE AND LITERACY IN EARLY CHILDHOOD

(Class 2, Lab. 3, Cr. 3)

Co-requisite: BHS 216

Open only to Early Childhood Development Majors Course will focus on knowledge and teaching techniques for language arts and emergent literacy appropriate to children from ages 3 - 8. Students will develop resources and learn to plan for experiences with language and literature, including activities and materials such as: storytelling, and story dictation, finger plays, flannel boards, and puppets. Students will consider the relation of language and literacy to cognitive, social-emotional and physical development for children from diverse backgrounds and with diverse needs.

BHS 225 ART, MUSIC AND MOVEMENT IN EARLY CHILDHOOD

(Class 2, Lab. 3, Cr. 3)

Co-requisite: BHS 216

Course will focus on the development of expression in children of diverse backgrounds and needs. Students will develop resources and explore techniques. Discussions will include appropriate documentation and display of children's work. Experiences with music, movement, and art activities will enhance understanding of cognitive, social-emotional and physical development through expressive activities.

BHS 228 DEVELOPMENTAL INFANT AND TODDLER CARE

(Class 3, Cr. 3)

Discussion of frameworks, principles and techniques for infant toddler programs; focusing on the role of healthy environments and nurturing relationships with adults.

BHS 235 CDA PORTFOLIO AND EXPERIENCE

(Class 3, Cr. 3)

Prerequisite: BHS 216

Students must be regularly involved in an early care and education program. Students will prepare autobiographical and goal statements, assemble resources and participate in discussion of issues in early care and education programs specifically geared to supporting the CDA program.

BHS 290 TOPICS IN BEHAVIORAL SCIENCES

(Cr. 1 to 3)

Variable credit, variable title course for group or individual study.

BHS 290A TEACHING CHILDREN WITH SPECIAL NEEDS

(Class 1, Cr. 1)

This is a variable credit, variable title course for group or individual study. Contact the academic department for more information.

BHS 310 MATH, SCIENCE, AND SOCIAL STUDIES IN EARLY CHILDHOOD

(Class 2, Lab. 3, Cr. 3)

Prerequisite: BHS 216 and BHS 224 and PSY 361 Co-requisite: BHS 217, BHS 225

Course will focus on planning and resources for young children's cognitive, social-emotional and physical development through exploration of and interaction with materials, people and places. Students will plan logico-mathematical, physical, and social knowledge activities which are appropriate for children with diverse backgrounds and needs. In addition, students will consider the relationships between experiences with materials such as manipulatives, wood, prop boxes, foods, and other sensory rich materials and with language and expressive activities. Overall planning, including curriculum webs, will be considered.

BHS 320 CHILDREN'S SOCIAL DEVELOPMENT

(Class 3, Cr. 3)

Prerequisite: PSY 361 Co-requisite: An advanced theoretical course focused on issues related to children's social development.

The topics of attachment, autonomy, initiative, play and developmentally appropriate child guidance will be explored within the context of social development

BHS 331 TECHNIQUES OF HUMAN ASSESSMENT

(Class 3, Cr. 3)

Prerequisite: PSY 361

An advanced study of the young child in the classroom. Course will include an in depth case study of an individual child with a focus on observing and documenting children's work. Developmental assessment instruments and basic measurement theory will be discussed as it relates to teachers' observational information.

BHS 332 CHILD CARE ADMINISTRATION

(Class 3, Cr. 3)

Prerequisite: BHS 216 or BHS 217 or PSY 361

Principles and practices of administering early childhood programs, including philosophical foundations, licensing requirements, administrative and operational decisions, home-school communication, and staff support.

BHS 340 TEACHING VERY YOUNG CHILDREN WITH SPECIAL NEEDS

(Class 3, Cr. 3)

Prerequisite: BHS 217 or PSY 361

This course emphasizes integrative, inclusive approaches to teaching very young children with special needs, and working with their families. It provides strategies for supporting social-emotional, motor, cognitive and communicative development within the context of the early childhood setting.

BHS 350 INTERSHIP IN EARLY CHILDHOOD SETTINGS

(Class 3, Cr. 3)

A guided practical experience for students interested in young children. Students will spend 5 hours per week in any of a variety of settings serving children from ages 0-8. Under the guidance of the setting professional and the university supervisor, the student will decide on a topic for development, culminating in a student paper describing and documenting the experience. Note: This course must be taken in conjunction with one of the guided electives associated with the early childhood development minor. This course does not count for practicum credit.

BHS 354 PRACTICUM IN EARLY CHILDHOOD I

(Class 2, Lab. 3, Cr. 3)

Prerequisite: BHS 224 and BHS 225 and BHS 310

Open only to Early Childhood Development Majors. Directed teaching for early education settings with attention to developmentally appropriate guidance. Course will focus on interaction with individual children and small groups. Students will participate in classroom activity planning, documentation of children's work and assessment.

BHS 355 PRACTICUM IN EARLY CHILDHOOD II

(Class 2, Lab. 3, Cr. 3)

Prerequisite: BHS 224 and BHS 225 and BHS 301 and BHS 354

Open only to Early Childhood Development Majors. Directed teaching in early

education settings with attention to classroom interaction. Course will include all aspects of classroom planning, work with larger groups, documentation and observational assessment, & portfolio development.

BHS 356 PRACTICUM WITH INFANTS & TODDLERS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: BHS 228 and BHS 354

Directed in service teaching for infant and toddler settings. Course will focus on all aspects of planning and guidance for infants and toddlers, addressing overall curriculum development and observational assessment.

BHS 370 GUIDED SELF STUDY FOR EXPERIENCED EARLY CHILDHOOD

(Class 2, Lab. 3, Cr. 3)

Prerequisite: BHS 354 Development Teachers.

Status as the responsible teacher in an early childhood setting for at least 5 years, with recommendation from supervisory staff. This course will be an alternative to BHS 355, Practicum II. It is designed for students who already have substantial experience leading early childhood classrooms. Students will consider issues that arise in their own classroom practice. They will propose and implement changes and reflect on the results

BHS 375 PHYSICAL AGING, HEALTH, AND BEHAVIOR

(Class 3, Cr. 3)

Prerequisite: PSY 120 or SOC 100

This course is designed to provide students with knowledge concerning the effects of the aging process on physical systems of older adults. These systems include circulatory, respiratory, neurological, sensory, musculoskeletal, reproductive, etc. Students will also learn about acute and chronic illnesses, common among the elderly. The impact of physical health on medical treatment, and long-term care will be discussed.

BHS 380 DISABILITY AND THE FAMILY LIFE CYCLE

(Class 3, Cr. 3)

This course provides students with information related to working with the families of individuals with disabilities. It focuses on the bidirectional impact of individuals with disabilities and their families throughout the life cycle.

BHS 382 DISABILITY AND SOCIETY

(Class 3, Cr. 3)

This course is designed to introduce students to disability from progressive and contemporary diversity perspectives. Students are introduced to an overview of disability history theory, and current thinking in the field of disability studies. Students in this course will examine and analyze the service, support and community contexts in which people with disabilities live, work and participate. Students will also be exposed to experiential learning activities that focus on understanding the challenges faced by individuals with disability related to inclusion across an array of educational, social, political, and health related systems. Students will gain knowledge related to the range of disability policy and how it relates to professional issues for those working with individuals with disability.

BHS 470 SUPERVISED EXPERIENCE IN EARLY CHILDHOOD PROGRAMS

(Class 3, Cr. 3)

Prerequisite: PSY 361 and BHS 216 and BHS 217 and BHS 224

Opportunity for students who already have bachelor degrees to consolidate foundational knowledge of early childhood development, and to obtain a guided practical experience.

BHS 484 GENETIC AND PHYSIOLOGICAL FACTORS UNDERLYING DEVELOPMENTAL DISABILITIES

(Class 3, Cr. 3)

This course will explore the genetic and physiological factors that contribute to the expression of some common developmental disabilities. This course will begin with a 2-week unit that explores the process by which genes influence human development, including: sensitive periods of development, teratogenic effects, genetic counseling, prenatal diagnostic tests, difficult births and the pre-term and small-for-date baby. The third unit (2-3 weeks) will focus on the physiology of the developing human nervous system during the prenatal period, infancy and early childhood. Development of the sensory systems will be given special attention. Approximately 9-10 weeks will be devoted to discussing the etiology, diagnosis (including differential diagnoses), treatment and prognosis of some of the major developmental disabilities. Discussion will include, but not be limited to: cerebral

palsy, hearing loss impaired vision, common Mendelian genetic disorders, neuro-muscular disorders and various types of mental retardation.

BHS 486 SEMINAR IN HUMAN DEVELOPMENT AND DISABILITY

(Class 2, Cr. 3)

The Seminar on Human Development and Disability will expose students to multiple perspectives related to the issues in human development and disability related issues. The purpose of the course is to provide an interdisciplinary experience for students preparing for work in the human services specifically with individuals with disability. Students will participate in a seminar originating at Riley Child Development Center at the Indiana University School of Medicine. Students will participate in seminar preparations provided by pediatricians, psychologist, psychiatrists, social workers, special educators, and occupational therapists. Students will also gain experience in critiquing disability related research in the context of guided class discussion.

BHS 490 UNDERGRADUATE SPECIAL TOPICS

(Class 0 to 6, Lab. 0 to 4, Cr. 0 to 6)

Individual or group participation in supervised reading, laboratory experiences, field experiences or research in special areas of human development and family studies.

Biology

BIOL 101 INTRODUCTORY BIOLOGY

(Class 3, Lab. 3, Cr. 4) TRANSFER IN

Molecular and cellular biology, basic chemistry, cell structure and physiology, cell division, genetics and development. Laboratories include illustration of basic concepts with emphasis on data collection and interpretation.

BIOL 102 INTRODUCTORY BIOLOGY

(Class 3, Lab. 3, Cr. 4) TRANSFER IN

Continuation of BIOL 101. Biology of organisms and populations. Morphology, physiology, and systematics of organisms, evolution, ecology and behavioral biology. Laboratories include survey of representative taxa.

BIOL 107 FRESHMAN EXPERIENCE IN BIOLOGICAL SCIENCES

(Class 1, Cr. 1)

The course consists of lectures by faculty and guest speakers, presentations by students and class discussion. Students in this course will become familiarized with the diverse fields of biological sciences and gain knowledge and skill for literature search, critical thinking, problem solving, and oral and written communications.

BIOL 175 FLORA OF CALUMET REGION

(Class 2, Lab. 2, Cr. 3)

Identification and recognition of the flora of the Calumet Region. The emphasis is on field that acquaints the student with the principle plant groups and species of the local flora. The course may not be used to fulfill the general science requirement.

BIOL 210 FIELD BIOLOGY

(Class 2, Lab. 2, Cr. 3)

It consists of a weeklong workshop at an off-campus field site. Activities will include field identification of animals and plants, a series of lectures by the course instructor and local experts, trips to local natural areas, and class discussions at the workshop site. Topics may include, but are not limited to, basic ecological and evolutionary principles, environmental ethics, local geology and ecology, natural resource management, habitat restoration and conservation, land use and human impacts on the most fundamental ecological principles, and an appreciation of human connectedness to other living species and the non-living environment. This course is offered for non-biology majors. This course cannot be counted toward the BS degree in biology.

BIOL 213 HUMAN ANATOMY AND PHYSIOLOGY I

(Class 3, Lab. 3, Cr. 4)

Prerequisite: BIOL 101 or CHM 119

An introduction to human anatomy and physiology. Topics include: the basic structural and functional organization of the human body, cellular anatomy and physiology, body tissues, the integument, and the skeletal, muscular and nervous systems. Lecture material is reinforced and expanded upon in laboratory studies of gross anatomy, histology and physiology. Prerequisite for students not yet admitted to a degree program: One semester, 3 credit hour, college level course in

chemistry, biology or by permission of instructor. Suggested courses include: BIOL 125, BIOL 101 or CHM 119

BIOL 214 HUMAN ANATOMY AND PHYSIOLOGY II

(Class 3, Lab. 3, Cr. 4)

Prerequisite: BIOL 213

A continuation of BIOL 213. Topics include: structure and function of the special senses and the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary and reproductive systems; basic hematology, fluid and electrolyte balance and acid-base balance. Lecture material is reinforced and expanded upon in laboratory studies of gross anatomy, histology, and physiology.

BIOL 221 INTRODUCTION TO MICROBIOLOGY

(Class 3, Lab. 3, Cr. 4)

One semester of general chemistry and one year life science The isolation, growth structure, functioning, heredity, identification, classification, and ecology of micro-organisms, their role in nature and significance to man.

BIOL 243 INTRODUCTION CELL BIOLOGY

(Class 3, Lab. 3, Cr. 4)

Prerequisite: BIOL 101 and BIOL 102 and CHM 116

Lecture emphasizes the unity of cellular processes among all living organisms. Topics covered include: molecular mechanisms regulating cellular activities involved in ion and solute transport; organelle biogenesis; protein trafficking and vesicular transport; structure and function of cell cytoskeleton; cell signaling, cycle and cycle control; and cancer biology. The laboratory complements lecture with experiments that incorporate procedures and techniques used in research, medical biotechnology, and pharmaceutical laboratories.

BIOL 244 GENETICS

(Class 3, Cr. 3)

Prerequisite: BIOL 101 and BIOL 102 and CHM 116

The study of genes and genomes with emphasis on data analysis and problem solving; topics include patterns of inheritance, the relationship of DNA and phenotype, genome structure and engineering, the nature of heritable changes, and genes in population.

BIOL 244L GENETICS LABORATORY

(Lab. 3, Cr. 1)

Corequisite: BIOL 244

Experiments in microbial, plant, and animal (including human) genetics, emphasizing molecular, approaches; exercises include molecular cloning and DNA manipulation.

BIOL 295 SPECIAL ASSIGNMENTS

Credit hours and class pattern arranged

Reading, discussions, written reports or laboratory work selected for enrichment in special areas of the biological sciences.

BIOL 316 BASIC MICROBIOLOGY

(Class 3, Lab. 3, Cr. 4)

One year general chemistry and one year general biology A study of microbial structures, metabolism, genetics, classification, growth and control of growth, the role and significance of microbes to humans and the environment. Bacteria, fungi, protozoa and viruses are covered. Emphasis is on the bacteria.

BIOL 330 BIostatISTICS

(Class 3, Cr. 3)

Prerequisite: MA 154

Biological applications of statistical principles and procedures. Topics include basic concepts of statistics and probability, sampling and experimental design, data collection, and various analytical methods to analyze the data collected.

BIOL 333 ECOLOGY

(Class 3, Lab. 3, Cr. 4)

Prerequisite: BIOL 101 and BIOL 102

Adaptations of living organisms to environment; natural selection and evolution of species; ecological interactions at organism, population and community levels; dynamics of populations and communities; ecosystem structures and functions; and human impacts on ecosystems.

BIOL 339 SOCIAL ISSUES IN BIOLOGY

(Class 3, Cr. 3)

Prerequisite: BIOL 101 and BIOL 102

This course is required for biological science teaching majors only. Contemporary social issues in biology will be discussed in this course. Topics may include, but not limited to, religious conflicts of evolution, ethics of biological research and practice, and issues of human nutrition, substance abuse, sex education, and family planning. Cannot be counted for biology elective credits.

BIOL 340 HUMAN PHYSIOLOGY

(Class 3, Lab. 4, Cr. 5)

Prerequisite: BIOL 213 and BIOL 214 or BIOL 101 and BIOL 102

A study of human physiology for students entering health oriented fields. The following systems will be examined: nervous, muscular, circulatory, respiratory, urinary, digestive, and endocrine. Emphasis on the relationship of function to structure at various levels of organization. Attention will be drawn to homeostatic mechanisms and intersystem interactions.

BIOL 357 INTRODUCTORY ANIMAL PHYSIOLOGY

(Class 3, Lab. 3, Cr. 4)

Prerequisite: One year of life science

A system analysis of animal physiology. With emphasis on mammals, the operation of systems such as respiratory, cardiovascular, neuromuscular, and endocrine will be considered. Interactions between components of individual systems as well as intersystem interaction is discussed.

BIOL 383 CONSERVATION BIOLOGY

(Class 3, Cr. 3)

Prerequisite: BIOL 333

Modern principles of biological conservation. Evaluation and conservation of biological species and their habitats. Role of human activities in species and habitat conservation.

BIOL 426 SENIOR CAPSTONE

(Lab. 2, Cr. 1)

Prerequisite: BIOL 316 or BIOL 333 or BIOL 357

Students will meet two hours a week to discuss current issues in biology and give presentation. This course will integrate material learned in previous biology courses to round out the academic experience of graduating seniors and provide a final opportunity for the department to assess student achievement.

BIOL 428 BIOLOGY SEMINAR

(Class 1, Cr. 1)

Guest speakers, faculty and students will present current topics in biology. Prerequisites: 24 credit hours of biology courses.

BIOL 440 HERPETOLOGY

(Class 2, Lab. 2, Cr. 3)

Prerequisite: BIOL 235

The evolution, paleontology, taxonomy, morphology, physiology, ecology, and geographic distribution of amphibians and reptiles. Museum techniques, biosystematics, preservation, and caring for specimens are included. Field work emphasizes collection and identification of Indiana species.

BIOL 477 PHYCOLOGY

(Class 2, Lab. 3, Cr. 3)

Prerequisite: BIOL 101 and BIOL 102

The study of algae with emphasis on identification, morphology and ecology of fresh water species.

BIOL 488 BIOLOGICAL SCIENCES INTERNSHIP

(Cr. 1 to 3) Experiential Learning

Directed in-service training with off-campus employers that may include but are not limited to government agencies private industries and community organizations. Can be repeated up to a total of 3 credits under the direction of the academic advisor.

BIOL 489 BIOLOGICAL SCIENCES RESEARCH

(Cr. 1 to 12) Experiential Learning

Prerequisites: 12 credits in BIOL core Courses.

Students will do research in the area of biological sciences with a primary investigator. They will contribute to ongoing research while learning current research techniques. They will analyze data and determine course of action to be taken in their experiments. During this process the students will develop critical thinking, oral, and written communication skills.

BIOL 495 SPECIAL ASSIGNMENTS

Prerequisites: Three semesters of biological sciences

Reading, discussions, written reports or laboratory work selected for enrichment in special areas of the biological sciences.

BIOL 505 - Biology Of Invertebrate Animals

(Class 2, Lab 2, Cr. 3)

A survey of the invertebrate animals, their morphology, physiology, ecology, and phylogeny.

BIOL 507 MOLECULAR BIOLOGY

(Class 3, Cr. 3)

Prerequisite: BIOL 243 BIOL 244, BIOL 244L or CHM 533 Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Molecular aspects of structure and function of nucleic acids and proteins, including recombinant DNA research. Prokaryotic and eukaryotic molecular biology are given equal weight.

BIOL 508 RECOMBINANT DNA TECHNIQUES

(Class 1, Lab. 6, Cr. 3)

Prerequisite: BIOL 243, BIOL 244/244L, BIOL 524; or CHM 533. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites

Basic principles of genetic engineering, gene cloning with various vectors. Techniques include isolation of DNA, use of restriction endonucleases, separation of DNA fragments, transformation of E. coli with recombinant DNA, detection of DNA sequences in Southern blot hybridization, mRNA isolation, cDNA library construction, DNA sequencing, and PCR technology.

BIOL 524 MICROBIOLOGY I

(Class 3, Cr. 3 or Class 3, Lab. 1, Cr. 3)

Prerequisite: BIOL 221. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Emphasis on bacteria and viruses and intensive study of their isolation, composition, structure, reproduction, and death; identification, classification, ecology, role in nature, and significance to man.

BIOL 525 NEUROBIOLOGY

(Class 3, Lab. 3, Cr. 4)

Prerequisite: BIOL 243 or 340 or 357. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

A survey of fundamental topics in the physiology of the nervous system including a discussion of excitable membranes, the physiology and pharmacology of electrical and chemical synapses, and the organization and function of vertebrate and invertebrate nervous systems

BIOL 527 Eukaryotic Microbiology

(Class 3, Cr. 3)

Pre/Corequisites: CHM 533; Upper division undergraduate level course work in Microbiology, General or Upper division undergraduate level course work in Genetics. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Eukaryotic microbes are a heterogeneous group of organisms that range from the relatively "simple" unicellular forms to more complex forms that differentiate a variety of cell types and elaborate multicellular structures. The easily manipulated life cycles of these organisms have made several of them favorite tools of geneticists, biochemists, and cell biologists. This course seeks to introduce students to the biology of several "model" organisms. Emphasis will be placed on the use of genetic analysis in studying these organisms and where applicable, parallels will be drawn between these organisms and their larger eukaryotic relatives. The course will consist of four parts; genetics systems, growth and metabolic regulation, cell biology, and development.

BIOL 533 MEDICAL MICROBIOLOGY

(Class 3, Cr. 3)

Prerequisite: BIOL 221. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites

Host-parasite relationships. Immunology. Bacteria and viruses associated with infectious diseases.

BIOL 534 LABORATORY IN MEDICAL MICROBIOLOGY

(Lab. 4, Cr. 2)

Corequisite: BIOL 533. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites

Properties of microorganisms associated with infectious diseases.

BIOL 541 MOLECULAR GENETICS OF BACTERIA

(Class 2, Cr. 2 or Class 3, Lab. 2, Cr. 4)

Prerequisite: BIOL 438

Advanced bacterial genetics, with emphasis on the use of genetics as a powerful and creative intellectual activity that enables us to discover biological functions and to construct new organisms by the manipulation of DNA. Major topics include: mutations, genetic selections, recombination, regulatory mechanisms, and genomic evolution.

BIOL 557 Physiology II

(Class 3, Cr. 3)

A study of the human cardiovascular, pulmonary, blood, and gastrointestinal systems. Higher neuronal functions and intersystem interactions will be discussed

BIOL 561 IMMUNOLOGY

(Class 3, Cr. 3)

Prerequisite: BIOL 221. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites

Introduction to the basic principles of immunology and serology in the molecular, cellular and organism level.

BIOL 566 DEVELOPMENTAL BIOLOGY

(Class 3, Lab. 3, Cr. 4)

Prerequisite: CHM 333. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites

Principles of development of plants and animals; the formation of organ systems.

BIOL 574 Plant Taxonomy

(Class 2, Lab 4, Cr. 4)

The principles and techniques of identification and classification of vascular plants, consideration of speciation, evolutionary mechanisms, and phylogenetic systems. Laboratory and field work pertaining to the principles and techniques of plant taxonomy

BIOL 575 Systematic Biology

(Class 2, Cr. 2)

Prerequisite: BIOL 580. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Principles of phylogenetic relationships and techniques used for their determination; classification, speciation theory, multimethod analyses. Evolutionary mechanisms and dynamics; hybridization, breeding systems, displacement phenomena, coevolutionary adaptations, rates of evolution. Offered in alternate years.

BIOL 576 - Laboratory In Systematic Biology

(Lab 4, Cr. 2)

Corequisite: BIOL 575. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Comparative morphometric, cytogenetic, and biochemical analyses of natural variation within and among populations of single and related species; local and geographic differentiation, introgressive, hybridization, and reproductive ecologies and isolation.

BIOL 580 EVOLUTION

(Class 3, Cr. 3)

A study of evolution as a basic concept of the biological sciences; an examination of current methods of experimentation within the area, as well as evidence for and possible mechanisms of evolutionary change.

BIOL 587 BIOGEOGRAPHY

(Class 3, Cr. 3)

Prerequisite: BIOL 580. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites

An introduction to the principles of biogeography. Distribution patterns, the role of history, the interactions of genetics and ecology in development of the species range, the species equilibrium theory, and the evolutionary biogeography of communities and regional biotas.

BIOL 588 PLANT ECOLOGY

(Class 2, Cr. 2)

The physico-chemical and biotic environment affecting plants in nature; the dynamics of plant communities; ecological methods. Applications to agronomy, forestry, wildlife management, outdoor recreation, and other land use interests.

BIOL 589 LABORATORY IN PLANT ECOLOGY

(Lab. 4, Cr. 2)

Corequisite: BIOL 588. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites

Class field trips and laboratory exercise.

BIOL 591 FIELD ECOLOGY

(Class 2, Lab. 4, Cr. 4)

A study of interactions which influence distribution and abundance of organisms and the theory which attempts to account for observed patterns in populations, communities, and ecosystems; adaptive strategies of organisms to interactions with other organisms and their environments. Emphasis on field studies and techniques and methods of sampling in aquatic and terrestrial communities.

BIOL 593 ETHOLOGY

(Class 3, Lab. 3, Cr. 4)

Animal behavior is analyzed in natural and experimental situations. Emphasis is on the observation of wild and domesticated animals. The effect of early experience, motivation, physiological mechanisms, adaptiveness and the evolution of behavior are considered.

BIOL 595 SPECIAL ASSIGNMENTS

Credit hours and class pattern arranged

Special work, such as directed reading, independent study or research, supervised library, laboratory field work or presentation of material not available in the formal courses of the department. The field in which work is offered will be indicated in the student's record. Required for M.S. candidates in the non-thesis option.

BIOL 698 RESEARCH M.S. THESIS

(Class 0 to 18, Lab. 0 to 18, Cr. 1 to 18)

Child Development and Family Studies

CDFS 210 INTRODUCTION TO HUMAN DEVELOPMENT

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: PSY 120 (Prerequisite: 3 credit hours of psychology)

An introduction to the development of individuals from conception through adulthood and aging. Physical growth, social and emotional behavior, cognitive and language development are covered.

CDFS 530 THEORY AND PRACTICE IN EARLY CHILDHOOD PROGRAMS

(Class 3, Cr. 3)

A total of 15 hours in education, psychology or child development. This course focuses on a critical examination of the relations between theory and practice in early childhood programs. Special attention is given to programs for children from diverse linguistic, cultural and economic backgrounds, and children with disabilities.

CDFS 551 PARENTING INTERVENTIONS

(Class 3, Cr. 3)

A total of 15 hours in education, psychology or child development. Critical examination of the design, implementation and effect of programs aimed at promoting parents' child-rearing competencies. Attention to diverse types of interventions including programs focused on information dissemination, interpersonal relationships, and family support systems. Emphasis on the theoretical and empirical bases of program development decisions.

CDFS 590 CONSTRUCTIVIST FAMILY THERAPIES

(Cr. 0 to 5)

Investigation of theory, research, and practice of constructivist and social constructionist family therapies. Readings will include a wide range of original work of major theorists such as White, de Shazer, and Anderson and Goolishian.

CDFS 590A COUPLE THERAPY

(Class 3, Cr. 3)

Special subjects for investigation and experiment according to the student's interest and need. Contact the academic department for more information about this course.

CDFS 601 ADVANCED CHILD DEVELOPMENT

(Class 2, Lab. 2, Cr. 3)

An advanced survey of selected dimensions of children's development from birth through middle and later childhood. Particular attention is given to the roles of

parents and teachers in influencing children's personal, social, emotional and intellectual behavior and development. A supervised practicum with the children in laboratory settings accompanies the course.

CDFS 602 ADVANCED FAMILY STUDIES

(Class 3, Cr. 3)

Integrative and comprehensive assessment of both classic and recent contributions in the field of family studies. Topics include both classic and recent contributions in the field of family studies. Other topics include major theory and research, historical, current, and future critical issues in family studies.

CDFS 603 THEORIES OF FAMILY THERAPY

(Class 3, Cr. 3)

An examination of the history of family therapy, major family therapy theorists, and therapy treatment modalities.

CDFS 615 RESEARCH METHODS IN CHILD AND FAMILY STUDY

(Class 3, Lab. 1, Cr. 4)

The basic research methods employed in the study of children and of families are examined. Students are afforded supervised practice in the application of selected research strategies and methodologies.

CDFS 657 SOCIAL CONSTRUCTIONIST FAMILY THERAPIES

(Class 3, Cr. 3)

Investigation of theory, research, and practice of constructivist and social constructionist family therapies. Readings include a wide range of original work by major theorists, such as White, deShazer, and Anderson & Goolishian.

CDFS 660 FAMILY THERAPY SKILLS

(Class 3, Cr. 3)

Training in use of basic family therapy skills. Procedures are applied in practice groups and analogue situations. A systemic biopsychosocial view of addictions and of the techniques that family therapists employ to disrupt patterns within abusing and addictive family systems.

CDFS 663 STRUCTURAL AND STRATEGIC FAMILY THERAPIES

(Class 3, Cr. 3)

Investigation of theory, research, and practice of structural and strategic family therapies. Readings will include a wide range of the original works of major theorists such as Erickson, Minuchin, Haley, Walzlawick, and Palazzoli.

CDFS 664 BEHAVIORAL, EXPERIENTIAL, AND COMMUNICATIONAL FAMILY THERAPIES

(Class 3, Cr. 3)

Investigation of theory, research, and practice of behavioral, experiential and communicational family therapies. Readings will include a wide range of the original works of major theorists.

CDFS 665 TRANSGENERATIONAL AND SPECIALIZED FAMILY THERAPIES

(Class 3, Cr. 3)

Investigation of theory, research and practice of transgenerational and specialized family therapies. Readings will include a wide range of original works of the major theorists.

CDFS 667 PRACTICUM IN MARRIAGE COUNSELING

(Class 3, Cr. 3)

Admission by consent of instructor. (May be repeated for credit) Supervised counseling experience in working with premarital and marital problems.

CDFS 669 PRACTICUM IN FAMILY THERAPY

(Class 3, Cr. 3)

Supervised counseling experience in family therapy. instructor. (May be repeated for credit) Supervised counseling experience in family therapy.

CDFS 670 HUMAN SEXUALITY

(Class 3, Cr. 3)

Admission by consent of instructor.

Study of the broad scope of human sexual development and expression. Particular attention devoted to literature on sexual behavior over the life cycle, alternate forms of sexual expression, law, ethics, and cross-cultural perspectives.

CDFS 671 SEX THERAPY

(Class 3, Cr. 3)

Prerequisite: CDFS 670

Examination of the literature, research and theories related to therapeutic interventions for sexual concerns in relationships. Particular attention is given to systemic approaches and to the relationship between marital and sex therapy.

CDFS 675 GENDER AND MULTICULTURAL PERSPECTIVES IN MARRIAGE AND FAMILY THERAPY

(Class 3, Cr. 3)

Increases students' sensitivity and understanding of how the social construction of gender and culture impact their professional development and the process of family therapy. Scholarly investigation and self-exploration will be integrated by studying the current literature and by analyzing videotapes of movie clips, television show, and the therapy sessions.

CDFS 678 FIELD EXPERIENCE IN MARRIAGE AND FAMILY THERAPY

(Class 0 to 9, Cr. 3 to 9)

Admission by consent of instructor.

May be repeated for credit. Supervised clinical experience in a community agency working with a variety of marital and family problems. Depending on the number of credit hours for which one registered, will require 8-24 clinic hours and 3-9 experiential hours per week. Supervised clinical experience in a community agency working with a variety of marital and family problems. Depending on the number of credit hours for which one is registered, will require 8-24 clinic hours and 3-9 experiential hours per week.

CDFS 680 PROFESSIONAL ISSUES FOR CHILD AND FAMILY SPECIALISTS

(Class 3, Cr. 3)

Prerequisite: Admission to doctoral studies or consent of instructor.

Professional issues involved in working with children and families. Questions of ethics, legal relationships, and value problems may be pursued, as may such pragmatic inquiries as the role of professional organizations and labor unions in these fields.

CDFS 698 RESEARCH MTHESIS

(Class 0 to 18, Cr. 1 to 18)

Civil Engineering

CE 201 SURVEYING & G. I. S.

(Class 2, Lab. 3, Cr. 3)

Prerequisite: MA 164 and PHYS 152

Theory and practice of land surveying. Fundamentals of observing distances, elevations, and angles. Analysis of errors in surveying measurements. Computations of irregular areas. Circular and parabolic curves. Earth-work estimates. Computer applications, photogrammetry, geographic information systems (GIS) and global positioning systems (GPS) technologies.

CE 273 MECHANICS OF MATERIALS

(Class 3, Cr. 3)

Prerequisite: ME 271 and MA 261 all with a C or better

Analysis of stress and strain, Mohr's circle, equations of equilibrium and compatibility; stress-strain laws; extension torsions, bending and deflection of beams, buckling of columns, elastic stability and strain energy, Castigliano's Theorem, pressure vessels, selected topics.

CE 323 SOIL ENGINEERING

(Class 2, Lab. 1, Cr. 3)

Prerequisite: ME 312 and ME 313

Introduction to soil engineering and testing. Identification and classification tests, soil water systems, settlement principles, soil stresses, and shear strength testing.

CE 334 STRUCTURAL ANALYSIS I

(Class 3, Cr. 3)

Prerequisite: CE 273

Loads, shear, moment, and deflected shape diagrams for beams and framed structures. Approximate methods. Calculations of deformations. Using flexibility methods to analyze frames and continuous beams. Using moment distribution and stiffness methods to analyze continuous beams and braced frames. Influence lines for determinate and indeterminate beams using Muller-Breslau principle. Computer applications to analyze beams and frames.

CE 342 ENGINEERING HYDROLOGY & HYDRAULICS

(Class 2, Lab. 1, Cr. 3)

Prerequisite: ME 312 and ME 313

Introductory concepts, precipitation. Evaporation and transpiration. Interception and infiltration. Surface runoff, groundwater, and streamflow. Hydrograph analysis. Applied hydraulics including pipe and channel flow with design applications in culverts, pumping, water distribution storm and sanitary sewer systems.

CE 351 INTRODUCTION TO TRANSPORTATION ENGINEERING

(Class 3, Cr. 3)

Prerequisite: STAT 345 and ME 312

Planning and operations of transportation facilities. Vehicle, operation and infrastructure characteristics. Technological, economic, and environmental factors. Travel demand modeling and capacity analysis.

CE 354 INTRODUCTION TO ENVIRONMENTAL ENGINEERING

(Class 3, Cr. 3)

Introduction to air and water pollution, noise, and hazardous and solid wastes; consideration of treatment and management issues.

CE 411 BUILDING DESIGN

(Class 2, Lab. 1, Cr. 3)

Prerequisite: ENGR 114 and CE 323 and CE 334

Structural steel and reinforced concrete building design. Analysis of structural behavior of framework. Systems that resist lateral loads. Use of current building codes and design specifications. Review of building designs. Preliminary and final designs including analysis of alternative structural systems, and preparation of design sketches and calculations.

CE 428 TRAFFIC MANAGEMENT

(Class 2, Lab. 1, Cr. 3)

Prerequisite: CE 351

Driver, pedestrian, and vehicular characteristics. Traffic characteristics, study of highway capacity; analyses of traffic patterns. Principles of traffic control for improved highway traffic service. Use intersection, corridor or network analysis, computer evaluation, and optimization tools.

CE 430 TRANSPORTATION POLICY

(Class 3, Cr. 3)

Prerequisite: CE 351

Current concepts, theories, and issues in managing transportation organizations. Study of transportation logistics and engineering systems with an overview of the operating context, leadership challenges, strategies and management tools that are used in today's public and private transportation organizations. Analyze alternative models of decision-making, strategic planning, stakeholder valuation and analysis, government-based regulation and cooperation within the transportation enterprise, disaster communications, systems safety, change management and the impact of globalization.

CE 436 URBAN TRANSPORTATION PLANNING AND MODELING

(Class 2, Lab. 1, Cr. 3)

Prerequisite: CE 351

Transportation data sources and cost analysis; management of transportation systems; transport financing; intelligent transportation systems planning; sustainable transportation concepts. Use of popular travel demand software and applications of geographic information systems (GIS) and global positioning systems (GPS).

CE 446 WATER AND WASTEWATER TREATMENT

(Class 3, Cr. 3)

Prerequisite: CE 354

Overview of engineering approaches to protect water quality with an emphasis on fundamental principals. Theory and conceptual design of systems for treating municipal wastewater and drinking water. Reactor theory, process kinetics, and models. Physical, chemical, and biological processes, including sedimentation, filtration, biological treatment, disinfection and sludge processing. Engineered and natural processes for wastewater.

CE 452 AIR POLLUTION

(Class 3, Cr. 3)

Prerequisite: CE 354

Analysis of air pollution sources. Effects of air pollutants on human health and environment. Technologies and methods used to control air pollution. Regional and global issues such as acid rain, ozone depletion, and global climate change.

CE 458 SOLID WASTE MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: CE 354

Planning and design of solid waste management systems; includes characterization and collection of domestic, commercial, and industrial solid wastes, waste minimization and recycling, energy and materials recovery, composting, incineration and landfill design.

CE 462 HIGHWAY DESIGN

(Class 2, Lab. 1, Cr. 3)

Prerequisite: CE 351 and CE 334

Introduction to traffic engineering and highway planning. Design, construction, and maintenance of highway facilities; earthwork, drainage structures; pavements. Preparation of environmental impact statement. This course has computer applications and will include completing a design project.

CE 471 REINFORCED CONCRETE DESIGN

(Class 2, Lab. 1, Cr. 3)

Prerequisite: CE 334

Analysis and design of beams, one-way slabs, and columns. Design of building frames using pattern loading and moments coefficients.

CE 482 ENGINEERING RISK ANALYSIS

(Class 3, Cr. 3)

Prerequisite: CE 354

Decision making in the presence of uncertainty: reliability and probabilistic risk assessment (RPRA), decision analysis (DA), and cost-benefit analysis (CBA) Balancing risk and benefit in situations that involve human safety, potential environmental effects, and large financial and technological uncertainties.

CE 485 ENVIRONMENTAL LAW & PUBLIC POLICY

(Class 3, Cr. 3)

Prerequisite: CE 354

Review and analyze federal and state regulation of air and water pollution and hazardous wastes. Analyze pollution as an economic problem and the failure of markets. Emphasize use of legal mechanisms and alternative approaches (such as economic incentives and voluntary approaches) to control pollution and to encourage chemical accident and pollution prevention. Focus on the major federal legislation, the underlying administrative system, and the common law in analyzing environmental policy, economic consequences, and the role of the courts. Discuss classical pollutants and toxic industrial chemicals, community right-to-know, and environmental justice. Also provides an introduction to basic legal skills.

CE 570 ADVANCED STRUCTURAL MECHANICS

(Class 3, Cr. 3)

Studies in stress and strain, failure theories, and yield criteria; flexure and torsion theories for solid and thin-walled members; and energy methods.

Civil Engineering Technology

CET 104 ELEMENTARY SURVEYING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: MA 147 or equivalent, or consent of instructor

Measurement of distances, directions and angles, using the tape, level, compass and transit. Computation of areas and traverses, lines and grades. Also, topographic surveys, an introduction to construction surveys, and an introduction to GPS measurement.

CET 160 STATICS

(Class 3, Cr. 3)

Corequisite: MA 148 or equivalent, or consent of instructor. Not open to students with credit in MET 118

Study of forces acting on bodies at rest. Coplanar and non-coplanar forces, concurrent and non-concurrent forces, hydrostatic forces, centroids and moments of inertia will be studied.

CET 208 ROUTE SURVEYING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CET 104, or consent of instructor

Preliminary and construction surveys for highways and railroads, including calculation and field work for simple, compound, reverse, and easement curves, grade lines and slope stakes and the superelevation of curves. Preparation of plans, profiles and cross-sections from field survey data. Earth-work estimates.

CET 209 LAND SURVEYING AND SUBDIVISION

(Class 1, Lab. 4, Cr. 3 or Class 2, Lab. 6, Cr. 4)

Prerequisite: CET 208 and CET 253, or consent of instructor

Theory and practice of land surveying, subdivision, filing and recording deeds, United States government survey of public lands, laws of land surveying, descriptions and area computations for land surveys. Subdivision planning, calculations and plotting, water main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles.

CET 210 SURVEYING COMPUTATIONS

(Class 3, Cr. 3)

Prerequisite: CET 104, or equivalent or consent of instructor

Analysis of errors in surveying measurements. Adjustments to surveying measurements, including an introduction to the least squares adjustment method. Computations using rectangular coordinates including intersections and coordinate transformations. Computations associated with horizontal and vertical control networks.

CET 253 HYDRAULICS AND DRAINAGE

(Class 3, Cr. 3)

Prerequisite: CET 160 or equivalent, or consent of instructor

Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage, and culvert size determination.

CET 260 STRENGTH OF MATERIALS

(Class 3, Cr. 3)

Prerequisite: CET 160 or equivalent Co-requisite: MA 221 or equivalent, or consent of instructor Not open to students with credit in MET 211.

Study of stress-strain relationships, shear and bending moment diagrams, stresses and deflections of beams, axial loads, and combined stresses. Applied problems in the field of structural design.

CET 266 MATERIAL TESTING

(Class 1 to 2, Lab. 3 to 6, Cr. 3)

Prerequisite: CET 260, or consent of instructor Not open to students with credit in MET 266.

Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests.

CET 280 STRUCTURAL CALCULATIONS

(Class 3, Cr. 3)

Prerequisite: CET 260, or consent of instructor

Practice in the calculation of loads, reactions, shear, and moment for determinate structures. Introduction to indeterminate structures with emphasis on moment distribution.

CET 299 CIVIL ENGINEERING TECHNOLOGY

(Cr. 1 to 4)

Hours to be arranged with staff. Primarily for third and fourth semester students. Subject matter to be assigned by the staff. Course may be repeated for up to nine credit hours.

CET 303 LAND SURVEY SYSTEMS

(Class 3, Cr. 3)

Prerequisite: CET 104, equivalent or consent of instructor

A study of ancient land survey systems which affected surveying in the United States, including metes and bounds systems. History and use of the United States Public Land Systems, including subdivision of sections, restoration of lost or obliterated corners, original surveys and retracement surveys. The study of other land system topics such as State Plane Coordinate systems.

CET 304 LEGAL DESCRIPTIONS FOR SURVEY

(Class 3, Cr. 3)

Prerequisite: CET 303 or equivalent, or consent of instructor

Study of the writing and interpretation of legal descriptions as they pertain to the conveying of land. Types of legal descriptions. Easement descriptions. Rights associated with written descriptions versus unwritten rights Other special topics in legal descriptions.

CET 306 CONSTRUCTION SURVEYING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CET 104 or equivalent, or consent of instructor

Application of surveying skills relevant to the construction field. Projects include; layout of commercial and industrial buildings, transfer of horizontal and vertical control, establishment of route centerlines, establishment of lines and grades,

determination of earthwork quantities, establishing slope stakes, triangulation, topographic mapping, etc. Instruments used will include transits, theodolites, automatic levels, construction lasers, and EDMs.

CET 322 ASTRONOMIC AND GEODETIC SURVEYING

(Class 3, Cr. 3)

Prerequisite: CET 210 or equivalent or consent of instructor.

Determination of directions based on astronomic observations. Computations associated with geodetic surveying and geodetic control surveys. Associations of geodetic locations and plane coordinate locations. Introduction to surveying by use of GPS methods.

CET 331 PROPERTIES AND BEHAVIOR OF SOILS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CET 266 or consent of instructor.

Identification and properties of soils with emphasis on laboratory and field testing. Behavior of soils relating to design and construction of structures and highways.

CET 402 SURVEYING LAW

(Class 3, Cr. 3) CET 304 or equivalent, or consent of instructor.

Legal aspects of surveying relative to boundary control, including sequential and simultaneous conveyances, adverse possession, riparian rights and boundaries and other interests in real property. Study of evidence and how it impacts boundary surveying. State laws and standards which impacts surveys.

CET 404 PROPERTY SURVEYING

(Class 3, Cr. 3)

Prerequisite: CET 402 or consent of instructor.

The Land Surveyor in the context of real estate development and transfer. The rules and classification of evidence and their use. Transfers of real estate role of title companies. The process for a Legal Survey. Retracement survey of a subdivision, evidence gathered and optimum resolution for the boundaries on such survey. Plats and Reports. Case Studies.

CET 499 CIVIL ENGINEERING TECHNOLOGY

(Cr. 1 to 3)

Hours, subject matter and credit to be arranged by staff. Course may be repeated for credit up to 9 hours.

Computer Graphics Technology

CGT 101 INTRODUCTION TO COMPUTER GRAPHICS TECHNOLOGY

(Class 3, Cr. 3)

This course provides an introduction to and a survey of the discipline of computer graphics. As an introductory course for incoming freshman, its topics include survey of the applications of computer graphics, the knowledge base and history of computer graphics, an examination of computer graphics technologies and careers in this rapidly emerging and evolving field, as well as an overview of the abundance of available resources for study and research in computer graphics at Purdue University.

CGT 110 TECHNICAL GRAPHICS COMMUNICATIONS

(Class 2, Lab. 2, Cr. 3)

This course is an introduction to graphic language used to communicate design ideas using CAD. Topics include: sketching, multiview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.

CGT 111 DESIGN FOR VISUALIZATION & COMMUNICATION

(Class 2, Lab. 2, Cr. 3)

An introductory design course for computer graphics majors. Students develop an understanding of the basic design elements and principles, composition and typography through exercises and projects. the focus is on visuals thinking, exploring the relationship between type and image, and developing multiple solutions to a given problem.

CGT 112 SKETCHING FOR VISUALIZATION & COMMUNICATION

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

This course applies fundamental computer graphics concepts of visualization, communication and creativity within a sketching metaphor. Exercises and projects in graphic theory, problem solving and sketching skill development provides students with activities that focus on further development within the discipline. A variety of sketching techniques are used to gather critical information and transform data into effective communication instruments.

CGT 116 GEOMETRIC MODELING FOR VISUALIZATION & COMMUNICATION*(Class 2, Lab. 2, Cr. 3)*

Core introductory computer graphics course that provides entry-level experiences in geometric modeling. Students develop geometric analysis and modeling construction techniques and processes to produce accurate computer models for graphic visualization and communication.

CGT 117 ILLUSTRATING FOR VISUALIZATION & COMMUNICATION*(Class 2 to 3, Lab. 0 to 2, Cr. 3)*

This foundation course stresses the use of pictorial illustration for visualization and communication. Various projection systems are introduced with discussion focusing on the appropriate use of view and system utilized to accentuate and provide clear communication. A variety of digital tools are used to construct, extract and render pictorial views using vector and raster tools.

CGT 141 INTERNET FOUNDATIONS, TECHNOLOGIES, AND DEVELOPMENT*(Class 2, Lab. 2, Cr. 3) Experiential Learning**Prerequisite: CIS 204 PC literacy is required*

This course explores the history, architecture, and development of the World Wide Web. Current tagging and scripting languages are covered in a tool independent environment. Topics also include authoring tools, design, graphic and multimedia formats, and commerce, implementation and security issues.

CGT 211 RASTER IMAGING FOR COMPUTER GRAPHICS*(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)**Prerequisite: CGT 111 and CGT 112 and CGT 116 and CGT 117 or CGT 141*

Digital images are produced using a variety of computer technologies. Advanced color theory, surface rendering, and light control are emphasized in relation to technical illustration, hardware characteristics, and software capabilities.

CGT 216 VECTOR IMAGING FOR COMPUTER GRAPHICS*(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3) Experiential Learning**Prerequisite: CGT 211*

Full-color vector illustration for a variety of uses are produced using computer methods. Color theory, surface analysis, and rendering techniques are emphasized as they apply to vector based illustrations.

CGT 226 INTRODUCTION TO CONSTRAINT-BASED MODELING*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 211*

This class provides an overview and continues into a detailed investigation of constraint-based modeling and feature-based modeling. The course is based on concepts derived from theoretical computer graphics and related industrial standards. Students exiting the course will have increased ability to apply constraint-based modeling to the solution of industrial problems.

CGT 241 INTRODUCTION TO ANIMATION & SPATIAL GRAPHICS*(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)**Prerequisite/Corequisite: CGT 211*

This course introduces the knowledge base on which digital animation and spatial graphics technology are founded and developed. Emphasis will be placed on developing a working knowledge of the mechanics of 3D geometric formats, spline based modeling with polygon mesh & NURBS, procedural mapping of raster images, simplified polygon modeling, rendering methods, hierarchical linking, and kinematic fundamentals.

CGT 251 PRINCIPLES OF CREATIVE DESIGN*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 111 and CGT 216*

This course is an intermediate exploration of conceptualization and problem solving using the integration of type and image as both visual and verbal communication. Topics such as systems of organization, visual hierarchy, creativity, typography, color, and navigation are introduced and explored in a systematic way. Students will also be introduced to the issues of information and user interface design to create effective and visually stimulating communication devices.

CGT 256 HUMAN COMPUTER INTERFACE THEORY & DESIGN*(Class 2 to 3, Lab. 0 to 2, Cr. 3) Experiential Learning**Prerequisite/Corequisite: CGT 211 or consent of instructor*

This course introduces the theory and art of human computer interface (HCI) design. Students focus on theoretical research in the area of HCI and on designing interfaces and interface components. Emphasis is placed on designing and evaluating effective and usable interfaces for multimedia and hypermedia products.

Topics such as systems of organization, visual hierarchy, creativity, typography color and navigation are introduced.

CGT 290 COMPUTER GRAPHICS TECHNOLOGY*(Class 1 to 3, Lab. 2 to 4, Cr. 1 to 3)*

Course topics will be determined by the computer graphics faculty. Hours and subject matter shall be arranged by the instructor and approved by the CGT curriculum committee. This course will not be used for independent study.

CGT 301 CREATING GRAPHICS FOR DIGITAL DISPLAY*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 211*

The process of creating editing and reformatting graphics for web and multimedia presentation. Students will gain proficiency in the creation and manipulating of raster and vector based imagery in appropriate technology formats for multimedia delivery. Color theory, design, communication and presentation skills will be emphasized.

CGT 304 COLOR AND COMPOSITION*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 216*

Students will examine traditional color harmonies and modernist theories. Interaction of color and the application of these ideas in the work of 20th Century artists are studied and adapted to student projects. Creative and expressive uses of color in all areas of design are encouraged.

CGT 305 INTERACTIVE ANIMATION AND DELIVERY METHODS*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 216*

New and emerging computer technologies are used to create interactive media-rich Web and stand-alone delivery projects. Students focus on the use of emerging scripting technologies that extend the capabilities of HTML, including JavaScript and ActionScript. Additionally, unique vector and raster implementations, such as Macromedia Flash, will be discussed and used. The course furthers the student's ability to utilize the time and location independent capabilities of Web and new interactive multimedia content delivery methods.

CGT 307 ADVANCED GRAPHIC DESIGN FOR WEB AND MULTIMEDIA*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 251 or CGT 353*

This course focuses on the creation of intermediate to advanced graphic web design. Students are required to plan, design and implement a major web project and a final online presentation. Areas of concentration will include transforming existing print and presentation materials for use on the Internet, integration of original vector, raster and animation art, and refining of graphic design principles as they relate to graphic web design. Students will use leading industry standard software in the creation process. Prerequisites: CGT 216 or permission of Instructor.

CGT 308 PRE PRESS PRODUCTION*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 216 or permission of instructor.*

This course applies the fundamentals of computer graphics concepts of visual communication and creativity using industry standard software, QuarkXpress. Students gain expertise through exercises and projects in Typography, Desk Top Publishing, and image application. Emphasis will be on design and pre press production.

CGT 309 Internship in CTG Experiential Learning*(Cr. 2 – 3)**Prerequisite: faculty approval is required.*

Internship course in computer graphics technology. Practical experience totaling at least 240 hours in computer graphics technology.

CGT 310 DRAWING, ACTING AND SCRIPTS FOR ANIMATION*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CGT 112*

This course analyzes the symbiotic relationship between thinking and physical action, between emotion and its expression. Students will explore the visual storytelling process for film, animation, video games or multimedia. Students will learn the history of and gain needed drawing, skills to create storyboards, animatics, along with the learning the importance to the production process. Students will learn how animation scripts are developed as well as how visual stories are told through technical elements such as composition, lighting, framing and perspective.

Students will explore how to tap into their creativity and create interesting original animations.

CGT 316 INDUSTRIAL APPLICATIONS OF COMPUTER GRAPHICS TECHNOLOGY

(Class 1 to 3, Cr. 0 to 3)

Consent of Instructor

(May be repeated for up to six hours additional credit)

This includes specialized topics, skills and applied problem solving associated with Computer Graphics Technology. The level of coverage varies according to the audience. Several variable topics may be offered under this title.

CGT 330 MULTIMEDIA ANIMATION AND VIDEO GAME DESIGN AND DEVELOPMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CGT 211

This course outlines all the details to create an original video game, build an effective game proposal outline with background information, the story, asset lists, hardware and software requirements. This course will teach the students to maximize design and development time of the original creator. Students will properly detail the proposal for a programming and artistic team to take a game from start to finish.

CGT 340 DIGITAL LIGHTING AND RENDERING

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: CGT 241

This course is designed to provide the basic knowledge and skills required in the creation of photorealistic still imagery. Emphasis is on a working knowledge of both virtual and real world lighting technologies and the tools necessary to create photorealistic imagery as well as an appreciation for production processes and deadlines

CGT 341 MOTION FOR COMPUTER ANIMATION

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: CGT 241

This course focuses on the animation of human motion, animal motion, soft-body and rigid-body object motion. Traditional animation concepts and 3D computerized animation techniques will be theoretically explored and practically applied.

CGT 346 DIGITAL VIDEO AND AUDIO

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: CGT 241

Covers the use of digital technologies for video and audio focused toward use in multimedia, hypermedia and animation products. Students examine the methods of creating, sampling and storing digital audio and the constraints placed on these media assets when used for media based products. Emphasis is placed upon the technology of digital video and audio including formats, data rates, compressors, and the advantages and disadvantages of the different technologies.

CGT 351 INTERACTIVE MULTIMEDIA DESIGN

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

Prerequisite: CGT 251

This course introduces the many facets of interactive multimedia design and production. Students are introduced to authoring programs used for information delivery with special attention focused on the integration of various media assets for communication. There is also concentration on the storage, management, and retrieval of media assets in a production environment. Considerable time is spent on the systematic design of interactive media products to meet specified goals of communication.

CGT 353 PRINCIPLES OF INTERACTIVE AND DYNAMIC MEDIA

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CGT 216

This course explores the development of interactive and dynamic media components for multimedia and hypermedia products. The course examines the design, creation and integration of text, 2D animation and sound for use in CD, DVD and web media. Students also learn the basics of scripting and how it can be used to create interaction.

CGT 356 WEB PROGRAMMING, DEVELOPMENT & DATA INTEGRATION

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: CGT 141 or CGT 211

A course focusing on the development of dynamic content and applications to facilitate information distribution. The course stresses development strategies for

managing the rapidly changing information of corporations and organizations for just-in-time distribution, using authoring programs to create interactive multimedia products that utilize database management systems, file systems, and XML to provide a method for visualizing and manipulating that data. Significant time is spent on intermediate to advanced programming and scripting.

CGT 411 CONTEMPORARY PROBLEMS IN APPLIED COMPUTER GRAPHICS

(Class 2, Lab. 2, Cr. 3) Experiential Learning

Contemporary Problems in Applied Computer Graphics is a group based course that attempts to identify, design, qualify, manage, create and present a final project relative to existing or emerging issues within the discipline. Activities and experiences will explore related topics such as project planning and management, user expectations, interpersonal communications skill and quality management. The course concludes with faculty, peers and practicing professionals evaluating oral, written and media presentations of final project.

CGT 415 SEMINAR FOR SENIOR DESIGN

(Class 2, Lab. 2, Cr. 3)

Prerequisite: Senior standing in Computer Graphics Technology

Preliminary work toward the senior design project is carried out with guidance from faculty. This course includes background research, review of previous projects, definition of project requirements, and the creation of a formal project proposal. Preparation for professional employment in applied computer graphics professions. Topics covered include job hunting strategies, résumés, placement services written and verbal correspondence, portfolios, interviewing strategies, salary negotiations, corporate culture professional organizations, harassment, future planning ethical and copyright concerns, graduate study and relocation.

CGT 416 SENIOR DESIGN PROJECT

(Class 2 to 3, Lab. 0 to 3, Cr. 3) Experiential Learning

Prerequisite: CGT 411 and CGT 450

This capstone course requires students to engage in a substantive endeavor directed at solving problems related to computer graphics. Activities include the creation and management of graphic systems and media assets per the requirements of the senior design proposal. Students are required to demonstrate professional attitudes and attributes in the timely completion and presentation of their project.

CGT 442 PRODUCTION FOR COMPUTER ANIMATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CGT 341

An applied course covering advanced spline modeling techniques, lighting techniques, applied shading, motion dynamics and controllers, particle systems, application, customization programming, and pre-production development and planning. Study of emerging computer animation and spatial graphic technologies will be included.

CGT 446 POST-PRODUCTION & SPECIAL EFFECTS FOR COMPUTER ANIMATION

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

A variety of commercial applications of technical animation and spatial graphics are analyzed and produced, with special emphasis upon client development, design, organization, scripting, storyboarding, technical production, management and evaluation.

CGT 450 PROFESSIONAL PRACTICES

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CGT 303

Preparation for professional employment in computer graphics professions. Topics covered include creative and publishing law, contracts, copyrights, corporate and freelance employment considerations; portfolio planning and interviewing. Arranged interviews and portfolio reviews.

CGT 451 MULTIMEDIA APPLICATION DEVELOPMENT

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: CGT 351 or CGT 256

This course focuses on the development of application that manipulate media asset. Significant time is spent on intermediate to advanced programming and scripting as well as the synchronization of aural and graphical components. Students are required to plan, design, and implement a major project and final presentation.

CGT 456 ADVANCED WEB PROGRAMMING, DEVELOPMENT & DATA INTEGRATION

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: CGT 356

This course presents the most advanced technologies available for use on the World Wide Web and within corporate intranet environments. Emphasis and discussion is focused on the advantages of these technologies as well as on implementation to create unique solutions for business and industry. Strategies for planning, development and implementation will be discussed and demonstrated. Significant time is spent on advanced programming and scripting as well as manipulation and visualization of data from various sources, including robust database management systems. Students are required to plan, design, and implement a major project.

CGT 490 COMPUTER GRAPHICS TECHNOLOGY

(Class 1 to 3, Lab. 2 to 4, Cr. 1 to 3)

Senior level course topics will be determined by the CGT faculty. Hours and subject matter shall be arranged by the instructor and approved by the CGT curriculum committee. This course will not be used for independent study.

CGT 490A GAME ANIMATION MM DESIGN AND DEVELOPMENT

(Class 2, Lab. 2, Cr. 3)

This course outlines all the details to create an original video game, build an effective game proposal outline with background information, the story, asset lists, hardware and software requirements. This course will teach the student to maximize design and development time of the original creator. Students will properly detail the proposal for a programming and artistic team to take a game from start to finish.

CGT 491 SPECIAL TOPICS IN COMPUTER GRAPHICS TECHNOLOGY

(Class 1 to 6, Cr. 1 to 6)

Consent of instructor.

A variable title, variable content course pertaining to problems and research in graphical methods and representation.

CGT 491A INTERNSHIP

(Class 3, Cr. 3)

A variable title, variable content course pertaining to problems and research in graphical methods and representation. Contact the academic department for more information.

CGT 491B SPECIAL TOPICS

(Class 2, Lab. 2, Cr. 3)

A variable title, variable content course pertaining to problems and research in graphical methods and representation. Contact the academic department for more information about this course.

Chemistry

CHM 100 PREPARATION FOR GENERAL CHEMISTRY

(Class 2, Lab. 3, Cr. 3)

An introduction to the basic ideas and laboratory techniques of chemistry, together with relevant parts of algebra and elementary physics. Intended for those whose background does not permit them to proceed directly with a general chemistry course.

CHM 111 GENERAL CHEMISTRY

(Class 2, Lab. 3, Cr. 3)

Laws and principles of chemistry, with emphasis on conceptual models and applications and of importance in technology. Preparation equivalent to one year of high school chemistry is recommended for students enrolling in this course.

CHM 115 GENERAL CHEMISTRY

(Class 3, Lab. 3, Cr. 4) TRANSFER IN

Prerequisite: MA 153

Laws and principles of chemistry, with special emphasis on topics of importance in science and engineering. Numerical problems and relationships are introduced whenever quantitative treatment is possible. Preparation equivalent to one year of high school chemistry is strongly recommended for students enrolling in this course. Students with inadequate preparation should enroll in CHM 100. This course is required of student majoring in chemistry, physics and engineering.

CHM 116 GENERAL CHEMISTRY

(Class 3, Lab. 3, Cr. 4) TRANSFER IN

Prerequisite: CHM 115

A continuation of CHM 115.

CHM 119 GENERAL CHEMISTRY

(Class 2, Lab. 3, Cr. 3 or Class 4, Lab. 3, Cr. 5)

Prerequisite: CHM 100 TRANSFER IN

A survey of organic, and biological chemistry. Intended primarily for students in the nursing program but may be taken by others with the consent of the instructor.

CHM 131 CHEMISTRY AND ECOLOGY

(Class 2, Lab. 2, Cr. 3)

An introduction to the application of chemical principles to the world around us (our environment). It may be used in satisfaction of the physical science requirement for the School of Liberal Arts and Social Sciences.

CHM 132 CHEMISTRY AND ECOLOGY

(Class 2, Lab. 3, Cr. 3)

A continuation of CHM 131 involving the application of chemical principles to the world around us (our environment) It may be used to satisfy the physical science requirement for the School of Humanities, Education and Social Science, and serve as an introductory course for further study in the field of environmental science.

CHM 194 FRESHMAN CHEMISTRY ORIENTATION

(Class 1, Cr. 1)

Designed to provide incoming chemistry majors with the academic, survival, and computational skills to make a successful transition from high school to college. Discussion of opportunities within chemistry department including degree options, co-op program, undergraduate research, careers in chemistry, use of spreadsheet software, graphing packages, and drawing programs for chemical structures. Attendance and performance on assigned projects are the basis of the pass/no pass requirement.

CHM 215 LABORATORY HEALTH AND SAFETY

(Class 1, Cr. 1)

Emphasis on the principles of prudent practice in the use and storage of laboratory equipment and materials, including consideration of governmental regulations regarding the disposal of toxic and hazardous material.

CHM 241 INTRODUCTORY INORGANIC CHEMISTRY

(Class 3, Lab. 3, Cr. 4)

Prerequisite: CHM 116

Descriptive inorganic chemistry dealing in a systematic way with the elements and the structures, properties, and reactions of their compounds.

CHM 255 ORGANIC CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 116

A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc. (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by reactivity orders, orientation effects, stereo-chemistry, and relative rates. Recommended for biology majors.

CHM 255L ORGANIC CHEMISTRY LAB

(Lab. 3, Cr. 1)

Prerequisite: CHM 255

Laboratory experiments to accompany CHM 255, illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

CHM 256 ORGANIC CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 255

A continuation of CHM 255 with various functional groups such as the carboxyl, carbonyl, amino, etc., and including such polyfunctional natural products as carbohydrates and peptides.

CHM 256L ORGANIC CHEMISTRY LAB

(Lab. 3, Cr. 1)

Prerequisite: CHM 256

A continuation of CHM 255L, but emphasizing methods for identifying organic compounds, including simple unknowns

CHM 261 ORGANIC CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 116

Recommended for students majoring in chemistry or chemical engineering. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. The syntheses and reactions of these materials are discussed. Modern theory and stereochemistry are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations.

CHM 262 ORGANIC CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 261

A continuation of CHM 261, but with a broader scope. The chemistry of a variety of functional groups is discussed. Theory is employed extensively to demonstrate the coherence underlying seemingly diverse transformations. Qualitative organic analysis is introduced with particular emphasis on spectroscopic methods.

CHM 265 ORGANIC CHEMISTRY LABORATORY

(Lab. 6, Cr. 2)

Prerequisite: CHM 261

Similar to CHM 263 except that a larger number and more sophisticated organic syntheses are required. The preparations are designed, not only to illustrate the classical reactions discussed in CHM 261, but to allow for an extrapolation of the principles involved to other systems.

CHM 266 ORGANIC CHEMISTRY LABORATORY

(Lab. 6, Cr. 2)

Prerequisite/Co-requisite: CHM 262

A continuation of CHM 265. All experiments are designed to illustrate the principles discussed in CHM 262. A major portion of the course is devoted to the methods employed in organic qualitative analysis. The student is expected to identify unknowns and mixtures and is introduced to some modern instrumental techniques.

CHM 290 SELECTED TOPICS IN CHEMISTRY FOR LOWER DIVISION STUDENTS

(Class 0 to 4, Lab. 0 to 8, Cr. 1 to 4)

Undergraduate special work, such as an individual project, not covered in the courses.

CHM 290B SELECTED TOPICS IN CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 115 or SCI 140

Undergraduate special work, such as an individual project not covered in the courses. Contact the academic department for more information about this course.

CHM 294 SOPHOMORE CHEMISTRY SEMINAR

(Class 1, Cr. 1)

Required of sophomores majoring in any chemistry curriculum. Discussion of undergraduate research opportunities, upper-division courses, career opportunities, laboratory safety, use of the library and chemical information, and topics of current interest in chemistry.

CHM 318 BIOMOLECULAR NMR SPECTROSCOPY/ MAGNETIC RESONANCE IMAGING

(Class 3, Cr. 3)

Prerequisite: CHM 256 or CHM 333 and PHYS 221 or PHYS 251

Designed for biotechnology, biology and chemistry majors. Topics will include: theory and modern experimental applications of proton nuclear resonance (H-NMR) spectroscopy, as needed for structural elucidation of biomolecules; H-NMR spectroscopy in two, three, and four dimensions; and Magnetic Resonance Imaging (MRI) and its uses in diagnostic medicine.

CHM 321 ANALYTICAL CHEMISTRY I

(Class 3, Lab. 3, Cr. 4)

Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a component prior to its determination; general approaches to quantization problems at the trace level; critical comparisons of competitive procedures, with emphasis upon principles of separation processes, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

CHM 324 ENVIRONMENTAL CHEMISTRY

(Class 3, Cr. 3)

This course focuses on the chemicals, chemical principles and chemical phenomena of environmental consequence. Topics include ozone depletion, greenhouse effect, air pollution, water pollution, acid rain, toxic chemicals, energy flow, and environmental technology.

CHM 333 PRINCIPLES OF BIOCHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 115 and CHM 116 and CHM 255 or CHM 261

Structure and function of biologically important molecules. Intended for students in life science.

CHM 342 INORGANIC CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 374

Properties of inorganic compounds in terms of their electronic and molecular structures. A survey of the preparations and reactivities of important compounds of the representative elements with an emphasis on group trends. The elementary chemistry of the transition metals including magnetic and spectral properties of coordination compounds. Interpretation and correlation of inorganic compounds electronic and molecular structures. The chemistry of the transition metals including magnetic and spectral properties of coordination compounds. Structure and bonding models. Acid-base solvolysis and thermodynamics of inorganic systems.

CHM 343 INORGANIC CHEMISTRY LABORATORY

(Lab. 3, Cr. 1)

Prerequisite: CHM 342

Laboratory work to accompany CHM 342.

CHM 373 PHYSICAL CHEMISTRY

(Class 3, Cr. 3)

Properties of gases; kinetic molecular theory; introduction to atomic and molecular structure; classical thermodynamics, including chemical equilibria, molecular interpretation of thermodynamics.

CHM 374 PHYSICAL CHEMISTRY

(Class 3, Cr. 3)

Phase equilibria, liquids, electrolytic solutions and cells, structure of atoms and molecules, spectroscopy, chemical kinetics, and solid state.

CHM 376 PHYSICAL CHEMISTRY LABORATORY

(Lab. 6, Cr. 2)

Laboratory portion of CHM 373 and 374.

CHM 424 ANALYTICAL CHEMISTRY II

(Class 2, Lab. 6, Cr. 4)

Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation.

CHM 444 COSMOCHEMISTRY

(Class 3, Cr. 3)

Nucleosynthesis and chemical abundances. Origin, composition, and structure of the earth and extraterrestrial objects. Isotope geology, geo- and cosmochemistry with particular emphasis upon the moon and meteorites.

CHM 494 JUNIOR-SENIOR CHEMISTRY SEMINAR

(Class 1, Cr. 1)

Major emphasis on developing skills in oral and written presentations by students. The subject matter can be library material and/or accomplishments in undergraduate or co-op research.

CHM 498 RESEARCH IN CHEMISTRY

(Class 0-5; Lab 3-15, Cr 1-5) Experiential Learning

Prerequisite: Admission by special permission.

Undergraduate research, which will qualify as an experiential learning experience. May be repeated for credit.

CHM 499 SPECIAL ASSIGNMENTS

(Lab. 3 to 15, Cr. 1 to 5)

Undergraduate level special work, such as a senior thesis, not included in other courses.

CHM 504 ORGANIC CHEMISTRY

(Class 3, Lab. 3, Cr. 4)

A general survey of practical and theoretical aspects of elementary organic chemistry followed by a more intensive study of a few selected topics. Designed primarily for secondary school teachers. Credit in this course may not be used toward a degree in chemistry.

CHM 505 ADVANCED CHEMISTRY FOR TEACHERS I

(Class 3, Cr. 3)

Topics include atomic structure, modern theories of the chemical bond, a structured study of the Periodic Table, the chemical properties of the main group and transition elements, and chemical calculations. Modern concepts of inorganic chemistry will be introduced whenever possible. Designed primarily for junior/senior high school teachers. Credit in this course may not be used toward a graduate degree in chemistry.

CHM 506 ADVANCED CHEMISTRY FOR TEACHERS II

(Class 3, Cr. 3)

Topics include chemical thermodynamics, chemical equilibria, electrochemistry, chemical kinetics, and nuclear chemistry, presented from a physical/analytical perspective. Designed primarily for junior and senior high school teachers. Credit in this course may not be used toward a graduate degree in chemistry.

CHM 513 CHEMICAL LITERATURE

(Class 1, Cr. 1)

Prerequisite: CHM 256 and CHM 321

Types of information in technical publications; exercises in finding, assembling and using such data.

CHM 533 INTRODUCTORY BIOCHEMISTRY

(Class 3, Cr. 3)

Chemistry and utilization in the living organisms of lipids, carbohydrates, proteins, enzymes, and hormones; physiological chemistry of the blood, urine, and other fluids and tissues; essentials of nutrition.

CHM 534 INTRODUCTORY BIOCHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 533

Continuation of CHM 533 with emphasis on enzymatic catalysis and metabolic transformations.

CHM 535 BIOCHEMISTRY LABORATORY

(Lab. 3, Cr. 1)

Co-requisite: CHM 534

Laboratory work to accompany CHM 534.

CHM 548 RADIOCHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 374

Elements of nuclear chemistry; the uses of isotopes in chemical research; elementary principles of radiation chemistry.

CHM 549 RADIOCHEMISTRY LABORATORY

(Lab. 3, Cr. 1)

Prerequisite: CHM 548

Laboratory work to accompany CHM 548.

CHM 561 ORGANIC CHEMISTRY

(Class 3, Cr. 3)

A general survey of practical and theoretical aspects of elementary organic chemistry followed by a more intensive study of a few selected topics. Designed primarily for secondary school teachers. This course may not be used toward a degree in chemistry.

CHM 562 INDUSTRIAL ORGANIC CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 262

A survey of the use of the methods and principles of organic chemistry in the manufacture of commercially valuable products ultimately derived from petroleum, natural gas, coal, and biomass. Includes consideration of the preparation and uses of polymers, dyes, drugs, agrichemicals, food additives, and other bulk chemicals.

CHM 563 ORGANIC CHEMISTRY

(Class 3, Cr. 3)

Prerequisite: CHM 262

Ionic and free radical reactions are discussed critically with emphasis on the synthetic and mechanistic aspects of the synthetic and mechanistic aspects of the reactions studied. Selected topics in physical organic chemistry.

CHM 599 SPECIAL ASSIGNMENTS

(Cr. 1 to 4)

Graduate level directed reading or special work not included in other courses.

Chinese

CHNS 101 CHINESE

(Class 3, Lab. 2, Cr. 4)

Introduction to Chinese Level I

CHNS 102 CHINESE

(Class 3, Lab. 2, Cr. 4)

Prerequisite: CHNS 101

Introduction to Chinese Level II

Computer Information Systems

CIS 103 SURVEY OF INFORMATION SYSTEMS AND INFORMATION TECHNOLOGY

(Class 3, Cr. 3)

An introduction to information technology and computer information systems designed for department majors. Topics include university resources, career opportunities, ethics, computer concepts, problem solving techniques, logic, system development life cycle, program development life cycle, database management systems, computer math, security and privacy issues, networks, and file management.

CIS 111 INTRODUCTION TO HUMAN COMPUTER INTERACTION

(Class 3, Cr. 3)

This course introduces foundational concepts of human computer interaction. Students focus on human-centered software development, usability testing and understanding interaction styles.

CIS 140 TELECOMMUNICATIONS IN BUSINESS

(Class 3, Cr. 3)

The course is an introduction to how computer networks are used in business and industry environments.

CIS 166 INTRODUCTION TO PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MA 153

This course is an introduction to computer programming. Emphasis in this course is on the program development life-cycle, structured programming and top-down design. Topics include identifiers, data types, arithmetic operators if, if/else, looping, case selection, modules, arrays, and an introduction to classes. Extensive programming exercises are required.

CIS 180 INTRODUCTION TO PROJECT MANAGEMENT

(Class 3, Cr. 3)

This course introduces foundational concepts of project management. Students focus on components of IS project management, the impact of IS projects on companies and basic theories of how to manage IS projects.

CIS 187 APPLIED COMPUTER OPERATING SYSTEMS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ECET 110 or CIS 210 and MA 153

This course is an introduction to computer operating systems and other systems software. Topics include: supervisor organization, utility programs, job control language, memory management and process management. Labs include installations of client based operating systems like: Windows 9x, Windows 2000, Windows NT and Unix/Linux.

CIS 200 INTRODUCTUON TO INFORMATION SYSTEMS POLICIES

(Class 3, Cr. 3)

Prerequisite: ENGL 104

An introduction to the need for and creation of policies for information systems and their impact on business. Courses content will include information security

policies, disaster recovery policies, and other related policy topics.

CIS 204 INTRODUCTION TO COMPUTER-BASED SYSTEMS

(Class 2, Lab. 2, Cr. 3) TRANSFER IN

An introduction to computer-based systems with an emphasis on how computers can assist the user. Computer concepts, terminology, and a survey of programming languages, operating systems, word processing, spreadsheets, database, communications, graphics, and Internet are included. Extensive laboratory exercises are assigned.

CIS 205 INFORMATION SYSTEMS FOR MANAGEMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 204

An integrated approach to Management Information Systems with emphasis on business systems analysis, design, development and implementation. A case problem will be presented which the students will implement via the above approach.

CIS 206 INTRODUCTION TO INTERNET TOPICS

(Class 2, Lab. 2, Cr. 3)

Not for degree seeking ISCP majors An introduction to the Internet and the World Wide Web. Topics include searching for web content, design and structure of web sites, browser compatibility issues, HTML editing, use of graphics and file transfers. The Hyper Text Markup Language is used to create web pages, provide links to internet resources, and add graphic images. Laboratory exercises are assigned.

CIS 210 PERSONAL COMPUTER TECHNOLOGY

(Class 3, Cr. 3)

Prerequisite: CIS 204

The personal computer is explored at the application level. Topics covered include an in-depth study of DOS commands and application software review. An overview of digital circuits the internal structure of microcomputers, microchip differences, PC communications, microcomputer operating systems and peripheral devices are discussed in relation to the evaluation of PC hardware and software. New technology topics round out the course.

CIS 215 STRUCTURED PROGRAM DEVELOPMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MA 153

An introduction to the development cycle, logic diagrams, debugging procedures, top-down design, top-down programming, is used to implement program solutions. Extensive programming exercises are assigned.

CIS 216 VISUAL PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 215

This course is an introduction to object-oriented program development. An overview of object-oriented analysis and design techniques and terminology is presented. Object-oriented programming techniques are implemented using a visual programming environment. Extensive written homework and computer laboratory exercises are assigned. Computer program solutions are implemented using a visual programming environment.

CIS 217 VISUAL BASIC PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite/ Co-requisite: CIS 166

This course emphasizes VB program development. An overview of analysis and design techniques and terminology is presented. Object oriented programming techniques are implemented using a visual programming environment. Numerous written homework and computer laboratory exercises are assigned.

CIS 218 C# PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Emphasis in this course will be on the object-oriented paradigm using C# (C-sharp). Topics include definition of classes and objects, definition of class methods, definition of derived classes, inheritance, polymorphism, exception handling, and an introduction to development of Window's applications. Extensive programming exercises using C# are required.

CIS 230 DATA COMMUNICATIONS

(Class 3, Cr. 3)

Prerequisite: ECET 110 or EET 110 or CIS 210 and MA 153

The role of data communications in modern business environments is explored. Real time systems and data transmission techniques are covered. Topics include

terminal equipment, communication media, data codes, error detection and correction, local area versus wide area networks, digital transmission techniques, terminal software, and the Open Systems Interconnection (OSI) model for network software. The primary emphasis in the course is on software aspects.

CIS 241 WEB DEVELOPMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 166

This course is an in-depth study on the internet and World Wide Web. Topics include intra- and extra-net concepts, security issues, design criteria and other Web aspects. Focus is on teaching skills necessary to develop applications for use on the Internet. Students learn how to write HTML, BVSript, and JavaScript code, how to use Microsoft FrontPage and other tools to create Web pages, and how to use image maps, forms and scripts, frames animated GIG files tables, and style sheets. Students will complete a semester project working as a member of a team.

CIS 242 E-COMMERCE ARCHITECTURE

(Class 3, Cr. 3)

Prerequisite: CIS 241

This course is an introduction to client/server and web-base architecture. Topics include the history and evolution of client/server systems, standards, client/server processing models the role of the client and of the server, middleware, multi-tiered architectures, methods of data distribution, designing a client/server system, distributed RDBMS, transaction processing and E-commerce. New developments, trends and uses for E-commerce are discussed.

CIS 252 SYSTEMS ANALYSIS AND DESIGN

(Class 3, Cr. 3)

Prerequisite: COM 114 and ENGL 104

An introduction to the procedural requirements of the system cycle. Through actual problem solution, the student is introduced to the techniques of system planning, analysis, form and file design, documentation, implementation and evaluation.

CIS 253 APPLIED DATABASE TECHNIQUES

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 166 and MA 153

An introduction to the applied aspects of database systems and their associated languages. Topics include database terminology and concepts including data modeling, data dictionaries, redundancy, independence, security, privacy, and integrity. Extensive laboratory exercises are assigned.

CIS 255 FUNDAMENTALS OF INFORMATION ASSURANCE

(Class 3, Cr. 3)

Prerequisite: CIS 140 Co-requisite: CIS 286

This course provides an integrated, comprehensive coverage of the information security policies, process, techniques, security tools, and awareness vital to information security. The classroom instruction provides a practical approach through case scenarios of both the principles and practice of information, computer, and network security for the enterprise and home.

CIS 261 RPG PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 215

An introduction to programming in RPG/400. Extensive programming exercises are assigned including report generation, control breaks and the creation and maintenance of indexed files.

CIS 263 JAVA PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 166

The course uses the Java programming language creating object-oriented software, including applications utilizing a graphical user interface. Students will study the structure and style of Java and will be required to submit extensive programming laboratory exercises.

CIS 265 COBOL PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 166

A study of the programming language, ANSI COBOL, which is especially useful for file and table handling and extensive input and output operations. The student will study the structure and details of COBOL and perform programming exercises dealing with practical applications like table handling, record selection and reporting.

CIS 266 C++ PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 166

Emphasis in this course is on object-oriented paradigm using C++. Topics include definition of classes, data abstraction, friend member functions, this pointer, static class member, operator overloading, inheritance, virtual function and polymorphism, template library. Extensive programming exercises in C++ are required.

CIS 267 SOFTWARE ENGINEERING REQUIREMENTS DEFINITION AND QUALITY

(Class 3, Cr. 3)

Prerequisite: CIS 252 and CIS 266

This course introduces basic concepts and principles of software engineering requirements its tools and techniques and methods for modeling software systems. It looks at how software quality assurance and configuration management are performed and how software process improvement is maintained in order to assure the highest quality in the development of software.

CIS 277 SE DESIGN, CONSTRUCTION AND EVOLUTION

(Class 3, Cr. 3)

Prerequisite: CIS 267

This course covers the methods and techniques used in the design of software systems. It includes architectural and detailed design, with an emphasis on object-oriented methods, the design process, and the design documentation and review. It also examines issues, methods and techniques associated with constructing software, given an architectural and detailed design, and for maintaining software over its lifetime. Prerequisites: CIS 267

CIS 286 COMPUTER OPERATING SYSTEMS I

(Class 3, Cr. 3)

Prerequisite: ECET 110 or CIS 210 or EET 110 and MA 153

An introduction to computer operating systems and other system software. Topics include: supervisor organization, utility programs, job control language, memory management and process management.

CIS 287 APPLIED COMPUTER OPERATING SYSTEMS II

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 187 and CIS 230

A continuation of CIS 187 with emphasis on systems installation and configurations using UNIX and Linux.

CIS 288 LAN TECHNOLOGY

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 230 and CIS 287

This course is an intermediate networking course and local area networking and design course. This is a laboratory and lecture course that covers the topics of topologies, networking protocols, hardware, and software of the local area network. Students will evaluate networking technologies, design local area networking solutions, and implement local area networking solutions.

CIS 290 COMPUTER PROJECT

(Class 0 to 4, Cr. 1 to 4)

Independent study for sophomore students who desire to execute a computer-oriented project. Course may be repeated for up to six hours credit.

CIS 301 DATA AND FILE STRUCTURES

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 266

Methods of organizing, linking, and retrieving information stored in computer memory or auxiliary storage: arrays, lists, stacks, queues, linked lists, trees. File organization and access: sequential, random, indexed, linked, inverted, partitioned. Associated data manipulation algorithms: data entry, searching, retrieval, sorting; algorithmic analysis. Selected applications.

CIS 302 INFORMATION SYSTEMS BUDGETING & PROCUREMENT

(Class 3, Cr. 3)

An introduction to the budgeting and procurement processes and issues and their impact on business. Course content will include vendor selection and management costs on IS projects and planning IS budgets.

CIS 304 ADVANCED COMPUTER UTILIZATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 204 and COM 114

This course is a continuation of CIS 204. The objectives of the course are to teach students how to obtain and analyze information, apply advanced application skills,

research a topic, generate reports and present the results. These computer skills are required in many disciplines today.

CIS 310 SERVER ADMINISTRATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 288

This course will prepare students for being a network and server administrator. Specific topics of the course will include administration of commercial operating systems in a commercial environment. Students will have practical knowledge on how to install, configure and implement a server solution. Students will be exposed to the theory of server technologies, directory services, and management theory of server systems.

CIS 312 LEGAL ISSUES IN INFORMATION TECHNOLOGY

(Class 3, Cr. 3)

Prerequisite: CIS 255

This course focuses on legal issues surrounding Information Technologies. Current legal issues in information technology are addressed including elements of contracting, payment systems, digital signatures, privacy concerns, intellectual property, IT torts and criminal liability including hacking, computer trespass and fraud. Examination of legal issues including privacy, systems abuse and legal practices in Information Technology will be explored.

CIS 315 WIRELESS NETWORK TECHNOLOGY

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 288

This course will introduce the fundamentals of wireless technology with an emphasis on information technology and implementation issues. Wireless communication theory, licensing standards, limitations, and emerging technologies will be explored in depth. This course has an extensive laboratory component and students will implement several wireless local area networking technologies.

CIS 323 OBJECT ORIENTED SYSTEMS ANALYSIS AND DESIGN

(Class 3, Cr. 3)

Prerequisite: ENGL 104

This is an introduction to the object-oriented analysis and design techniques for systems development. Topics include problem analysis, data collection techniques, system and program design techniques.

CIS 341 WEB DEVELOPMENT II

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 241

This course is a continuation of CIS 241. Advanced Web content generation techniques are covered. Topics include using advanced multimedia and database and application integration.

CIS 342 MULTIMEDIA FOR WEB DEVELOPERS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 241 A.S. Degree in CIW Internet/Web Technology

This course is an introduction to the creation and use of graphics, animation, video and audio on the Web. Students will design, create and deploy several instances of graphics video and audio on a series of Web pages. Topics include graphics, video and audio file formats, creating multimedia content, formatting images on Web pages, animation and video, and the use of graphics for purposes such as buttons dividers and image maps.

CIS 345 COMPUTER GRAPHICS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 166 and MA 153

A survey of computer hardware used to make graphic displays including printers, plotters, and cathode ray tubes. Programming techniques for plotting lines and special symbols and the organization and representation of data, and a survey of applications.

CIS 351 DECISION SUPPORT AND EXPERT SYSTEMS

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

Introduction to techniques employed in supporting decision-making in business, industry and government. Various types of models are developed and solved using manual and computerized techniques. Students analyze, prepare a model for, and develop solutions for selected types of problems. Decision support software packages may be specified to implement some solutions. Topics include an overview and relationship to Artificial Intelligence, project management, optimization techniques, statistical analysis, graphical analysis, simulation techniques, building management models, and presentations of results.

CIS 353 ADVANCED DATABASE PL/SQL PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 355

This course is a continuation of CIS 355, Database Implementation. Advanced techniques of PL/SQL are covered. Topics include processing statements of PL/SQL blocks, procedures, functions, packages, dependencies, database triggers, built-in packages, dynamic SQL and Object Technology and code tuning. Students acquire advanced skills in a practice environment reinforcing concepts and techniques of PL/SQL programming.

CIS 354 RELATIONAL AND OBJECT-ORIENTED DATABASE MODELING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 252 and CIS 253

This course discusses the role of databases in the System Development Life Cycle, with an emphasis on rational base analysis and object-oriented database analysis and design techniques—logical data modeling. Additional topics include the functions and components of state-of-the-art commercial DBMS software, distributed database, database models, and the role and function of the Database Administrator. Students will be assigned data modeling projects.

CIS 355 DATABASE MANAGEMENT SYSTEM IMPLEMENTATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 354

This course emphasizes the implementation of a relational DBMS. Students will use fourth generation languages and tools to implement design specifications. Additional topics include the implementation of physical data models, backup/recovery facilities, concurrency control, integrity services and security mechanisms. Students will be assigned implementation projects.

CIS 356 TOPICS IN DATABASE PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 261 or CIS 263 or CIS 265 or CIS 265

This course is an introduction to accessing a relational database using a programming language such as COBOL, C++, JAVA or RPG. focus is on one language during the semester. Topics include defining and controlling transactions, sequential access techniques, use of primary and secondary keys, cursors, report generation, updating techniques, and dynamic SQL. This course is a variable title course. This course can be repeated, with a different title, for credit.

CIS 357 DATA WAREHOUSE/DATA MINING

(Class 3, Cr. 3)

Prerequisite: CIS 354

This course is an overview of data warehousing and data mining together with in-depth explanations of critical issues in planning, design, deployment and ongoing maintenance of data warehousing. Students will gain a clear understanding of the techniques for extraction of data from sources, data transformations, data staging, data warehouse architecture and infrastructure and various methods for delivery. Additional topics will include an overview of On-Line Analytical Processing, Knowledge Discovery Database Process Model, Expert Systems, Neural Networks, Regression Analysis, Intelligent Agents as they relate to data warehousing.

CIS 363 ADVANCED JAVA PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 263 A.S. Degree in CIW Internet/Web Technology.

The course is a continuation of CIS 263. Topics include multi-threading, client/server, database access and exception handling.

CIS 365 TOPICS IN COBOL

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: CIS 265

Advanced COBOL topics concerning indexed files with variable length records, direct files, sophisticated table handling employing subscripting and indexing, simulation and program use. The Report Writer feature of COBOL is also introduced. Programming exercises include advanced file maintenance techniques and menu-driven programs. subprogram use. The Report Writer feature of COBOL is also introduced. Programming exercises include advanced file maintenance techniques and menu-driven programs.

CIS 383 ON-LINE PROGRAMMING TECHNIQUES

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

Prerequisite: CIS 365

An introduction to Command Level CICS used to illustrate the concepts and considerations required in the design development and implementation of online

application programs. CICS commands, program design, programming, CICS commands, program design, programming, screen maps, debugging and testing are covered utilizing business-oriented assignments. screen maps, debugging and testing are covered utilizing business oriented assignments.

CIS 384 DATABASE INTEGRATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 355

This capstone course combines database skill sets and techniques, providing students with an integrated comprehensive experience of various database platforms and programming languages. Topics include the latest development tools, database features and strategies, embedded SQL programming, administrative API's, CLI, ODBC and OLE DB programming, JAVA programming, stored procedures and more. Students develop database applications in a variety of environments using a variety of programming tools, maximizing database performance, availability and efficiency

CIS 386 COMPUTER OPERATING SYSTEMS II

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 286

A continuation of CIS 286 with emphasis on systems generation, control languages using VMS, UNIX, and Windows NT.

CIS 389 NOVELL LAN ADMINISTRATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 187 and CIS 230

The emphasis in the course is on illustrating the tasks that the LAN administrator must perform to maintain a NOVELL network. Topics include the SYSCON menu, menu creation, trustee assignments, assigning rights to users, file directories, installing software on the file server, login scripts, and network monitoring software.

CIS 393 INDUSTRIAL PRACTICE III

Prerequisite: CIS 292

Practice in industry with written reports of the practice by the co-op student.

CIS 394 INDUSTRIAL PRACTICE IV

Prerequisite: CIS 393

Practice in industry with written reports of the practice by the co-op student.

CIS 395 INDUSTRIAL PRACTICE V

Prerequisite: CIS 394

Practice in industry with written reports of the practice by the co-op student.

CIS 400 INFORMATION SYSTEMS STRATEGIC PLANNING

(Class 3, Cr. 3) *Experiential Learning*

Prerequisite: CIS 200

Strategic planning methods for information systems are covered and their relationship to the overall strategic business plans. Course content will include enterprise resource plans and business process redesign.

CIS 412 HUMAN COMPUTER INTERACTION

(Class 3, Cr. 3)

Prerequisite: CIS 111

This course is designed for students who desire to understand the complex interaction of people with machines. Students will learn how to design, manage, maintain, train, refine and evaluate the user interface of interactive systems. Serious users of interactive systems will find that the course gives them a more thorough understanding of the design questions for user interfaces.

CIS 413 EDP AUDITING AND CONTROL

(Class 3, Cr. 3)

Prerequisite: CIS 252

An introduction to the fundamentals of EDP auditing. Emphasis on understanding EDP controls, the types of EDP audits and the concepts and techniques used in EDP audits. Exposure to risk assessment and professional standards in the field of EDP auditing are provided.

CIS 414 INFORMATION SYSTEMS PROFESSIONALISM & ETHICS

(Class 3, Cr. 3)

Prerequisite: CIS 252

The course will cover ethical issues regarding the development of software and information systems and discuss the impact of these systems on society and businesses. Professional societies and their roles in information systems including their professional and ethical codes will be addressed.

CIS 415 WIRELESS NETWORKING TECHNOLOGY*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CIS 388*

The course will introduce the technology used in wireless networks with the primary emphasis on implementation issues. Wireless network configurations and roaming standards, advantages and limitations of wireless technology, and emerging wireless and mobile data technologies will be explored. Technologies such as Cellular Packet Digital Data (CDPD), Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA), the Bluetooth initiative, Wireless Application Protocol, Spread Spectrum technology, and other current technologies will be covered. Laboratory assignments will allow students to set up and test a wireless network using several of these technologies.

CIS 416 WIRELESS SECURITY*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CIS 315*

This course will prepare students for being a wireless network administrator. Specific topics of the course will include encryption, VPN technologies over wireless, authentication mechanisms, and wireless topologies for security, radiation and signal propagation techniques, site analysis, monitoring and troubleshooting, and current threats against wireless devices. The course will cover advanced concepts specific to wireless security technologies and the implementation of protective technologies in the wireless realm.

CIS 420 WIDE AREA NETWORK IMPLEMENTATION*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CIS 310 and CIS 287 Co-requisite: CIS 310*

This course is an advanced networking course and enterprise level architecture and design course. Students will evaluate networking technologies, design enterprise level networking solutions and implement enterprise networking solutions.

CIS 421 RISK ASSESSMENT FOR INFORMATION ASSURANCE*(Class 3, Cr. 3)**Prerequisite: CIS 312*

This course focuses on analysis of Risk Assessment models associated with information technology framework. This course describes threats associated with information technology security. IT security threats from Hardware and Software level as well as countermeasures for reducing those threats are explored in detail. Countermeasures for Information Security Vulnerabilities form the framework of People, Process, Computer level, Network technology and Encryption are discussed.

CIS 422 NETWORK MANAGEMENT*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CIS 420*

This course provides an integrated, comprehensive, up-to-date coverage of the techniques, standards, models for the network management vital to communications, networking, and services including current trends of next generation converged, networks and emerging 4GM wireless technologies. The classroom instruction provides a practical approach of both the principles and practices of network management from different perspectives.

CIS 423 STRUCTURED SYSTEMS ANALYSIS AND DESIGN*(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)**Prerequisite: CIS 354*

This is the first semester of a two-semester sequence in the advanced study of the system development life cycle. Topics include analysis and design using structured techniques to analyze existing information systems, preparation of the associated structured documentation to design new computer information systems, and preparation of the technical specification to implement the system.

CIS 424 OBJECT ORIENTED ANALYSIS DESIGN*(Class 3, Cr. 3)**Prerequisite: CIS 354*

This is an in-depth study of the system development life cycle using object oriented analysis and design techniques. Other topics include project management, software quality assurance, computer-assisted software engineering (CASE), and other state-of-the-art techniques that the software engineering profession introduces to support the system development process.

CIS 425 INFORMATION SYSTEMS CHANGE MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: CIS 400*

The course covers the purpose and techniques of IS change management and its impact on business planning and functions.

CIS 426 APPLIED SOFTWARE DEVELOPMENT PROJECT*(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3) Experiential Learning**Prerequisite: CIS 424 or CIS 323*

A capstone course integrating the knowledge and abilities gained through the other computer related courses in the curriculum within a comprehensive system development project.

CIS 427 SYSTEM DEVELOPMENT PROJECT*(Class 3, Cr. 3)***CIS 440 ADVANCED NETWORK DESIGN***(Class 3, Lab. 2, Cr. 4)**Prerequisite: CIS 310*

This course will emphasize common carrier systems, ATM, Systems Network Architecture (SNA), Fiber Distributed Data Interface (FDDI), and Integrated Services Digital Network (ISDN). New developments in data communications will be discussed. Students will design and simulate a wide area network using a simulation software package.

CIS 441 WEB SERVER MANAGEMENT*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CIS 140 and CIS 241 and CIS 286*

This course is a study of the implementation, configuration and maintenance of Web server software. Students will install and configure a Web server. Topics include server layout and design considerations, cgi and back-end program management, data collection and management, backup and recovery procedures, security and secure transactions and logging and auditing.

CIS 442 INTERNET/WEB SECURITY*(Class 3, Cr. 3)**Prerequisite: CIS 140 and CIS 241 and CIS 187*

This course is a study of existing methods and techniques for securing various components of computerized systems. Topics include types of attacks, monitoring and detection techniques, encryption methods, data security, authentication techniques and current trends in security.

CIS 445 NETWORK SECURITY*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CIS 310*

This course is a study of existing methods and techniques for developing and implementing a security policy and for securing various components of computerized systems. Topics include types of attacks, monitoring and detection techniques, encryption methods, data security, authentication techniques and current trends in security. Labs will emphasize various hardware and software security and data prevention packages.

CIS 446 WEB DEVELOPMENT III*(Class 2, Lab. 2, Cr. 3)*

This course is a study of advanced methods and techniques for developing and implementing Web and network-based applications. New topics and techniques in Web development are discussed. Extensive laboratory exercises and a comprehensive semester project are assigned.

CIS 447 DISASTER RECOVERY AND CONTINGENCY PLANS FOR INFORMATION TECH*(Class 2, Lab. 2, Cr. 3)**Prerequisite: CIS 445*

This course provides methods to identify vulnerabilities and take appropriate countermeasures to prevent and mitigate information technology failure risks for an organization. Topics include: disaster recovery principles, development of policies and procedures, preparation of disaster recovery plan, testing and rehearsal of the plan, and actually recovering from a disaster. The classroom instruction provides a practical approach to develop disaster recovery and contingency plans.

CIS 449 INFORMATION TECHNOLOGY SECURITY MANAGEMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 447

This course covers techniques for architecture design, security infrastructure, and policy design. The course provides a practical approach through case scenarios of both the principles and practice of design, implementation, testing and management of security technologies and security services.

CIS 451 COMPUTER FORENSICS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 449

This course covers methods to properly conduct a computer forensics investigation. This course uses case scenarios to illustrate the principles and practice of investigation. Topics include: digital evidence and controls, processing incidents using computer forensics tools, investigation reports and forensic analysis.

CIS 457 DATABASE ADMINISTRATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 140 and CIS 253 and CIS 286

This course covers database administration tasks and techniques. Students will install and implement two relational database management systems. Topics include RDBMS architecture, installation, creating databases, configuration, migrating data, database object management, user account management, tuning and backup and recovery.

CIS 460 PROGRAMMING SYSTEMS

(Class 3, Cr. 3)

Prerequisite: CIS 301

A broad overview of some basic and advanced concepts in higher level languages and their design. Emphasis is on issues and breadth rather than on details. Topics cover basic characteristics of programming languages, formal methods of defining syntax and semantics, broad language areas of string and list processing, formula manipulation, on-line commands, simulation, concepts of languages for specialized application areas and for program validation, and current research topics and technical issues.

CIS 461 ENTERPRISE SOLUTIONS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 341 or CIS 355 or CIS 363

A course exploring enterprise-level solutions and trade-offs in achieving design goals. The solution patterns and best practices will be discussed. Topics include the design considerations in achieving application availability, scalability and reliability; technical issues involved in transaction, testing, optimization, and deployment; the practical solutions of different architectures, component-based multi-tiered solutions, and distributed applications.

CIS 466 MULTITHREADING PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 363 and CIS 301

This course covers multithreaded programming and distributed computing techniques. Topics include a review of object-oriented analysis and design, Universal Modeling Language (UML), Application Programming Interfaces (API), implementation of object-oriented design patterns, factorization, generalization, and object-oriented frameworks.

CIS 469 OPERATING SYSTEMS PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CIS 310

This course will prepare students for being a network administrator. Specific topics of the course will include structure of scripting languages, scripting tools, and scripting uses. Scripts will be utilized to configure and update server and client operating systems types. The strengths and weaknesses of scripting techniques and tools will be discussed.

CIS 480 MANAGING INFORMATION TECHNOLOGY PROJECTS

(Class 3, Cr. 3)

Prerequisite: CIS 180

This course introduces the advanced application of knowledge, skills, tools, and techniques project managers use to plan, staff, estimate and manage information technology projects. Students will apply project management technology and techniques to business problems.

CIS 483 COMPUTER HARDWARE/SOFTWARE SELECTION

(Class 4, Cr. 4)

The course is designed to provide EDP technical personnel with information required to plan, design, and select computer systems. Included are the formulation of corporate requirements, configuration of hardware and software to satisfy stated requirements, comparison and evaluation of hardware and software, installation considerations, implementation procedures, performance measurement approaches and contract negotiations.

CIS 490 SENIOR PROJECT

(Class 1 to 4, Lab. 1 to 4, Cr. 1 to 4)

Independent study for seniors who desire to execute a complete computer oriented project.

CIS 497 COMPUTER AND INFORMATIONAL SYSTEMS

(Class 1 to 4, Cr. 1 to 4)

Hours, credit, and subject matter to be arranged by staff.

Construction Management Engineering Technology

CMET 100 FRESHMAN EXPERIENCE FOR CMET

(Class 1, Cr. 1)

This course will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline-specific career exploration and critical thinking.

CMET 102 TECHNICAL COMPUTATIONS

(Class 2, Cr. 2) Co-requisite: MA 147 or consent of instructor.

A study of elements from algebra and trigonometry appropriate to surveying, estimating, statics and other construction-related courses. Graphs and reports are included. Additionally, word processing, spreadsheets and Powerpoints presentations will be included. The correct use of calculators will be addressed.

CMET 190 CONSTRUCTION EXPERIENCE I

(Class 1, Cr. 1)

Minimum of ten weeks work experience in the construction industry, plus written report of directed academic project.

CMET 280 QUANTITY SURVEY AND ESTIMATING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ARET 250 or CET 208 or consent of instructor.

A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Introduction to estimating labor and cost. Computer applications.

CMET 291 CONSTRUCTION EXPERIENCE II

(Class 1, Cr. 1)

Minimum of ten weeks work experience in the construction industry, plus written report of directed academic project.

CMET 325 STRUCTURAL APPLICATIONS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CET 280 or consent of instructor.

Techniques in analyzing statically determinant and indeterminate structures with a discussion of moment distribution. Standard design procedures for wood, steel, and concrete structures. Sizing of beams, columns and connections.

CMET 335 SHORING, FORMWORK AND SCAFFOLDING DESIGN AND SAFETY

(Class 3, Cr. 3)

Prerequisite: CET 280 and CMET 341 or consent of instructor.

Fundamentals in the design of shoring; concrete forms for beams, columns, slabs and walls; the design and selection of scaffolding systems. A discussion of erection and fabrication techniques with an emphasis upon safety.

CMET 341 CONSTRUCTION OPERATIONS

(Class 3, Cr. 3)

Prerequisite: Junior standing or consent of instructor.

Management, methods and equipment used in the construction of buildings, earthworks, bridges and roads. Contractor organization, job management, and safety. Excavation, formwork, concrete, masonry, and steel erection methods.

CMET 344 CONSTRUCTION INSPECTION

(Class 2, Lab. 3, Cr. 3) *Experiential Learning*

Prerequisite: ARET 276 and CMET 341 or consent of instructor

Inspection procedures as applied to contracted construction, and the role inspection plays in the execution of the completed contract. The laboratory period is used for demonstration, guest lecturer presentations, and for field trips to construct sites, fabrication shops, and testing laboratories.

CMET 390 CONSTRUCTION EXPERIENCE III

(Class 1, Cr. 1)

Minimum of ten weeks work experience in the construction industry, plus written report of directed academic project.

CMET 442 CONSTRUCTION COSTS AND BIDDING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CMET 280 and CMET 341 or consent of instructor.

Estimating total job costs (material and labor, quantity survey, overhead, subcontracts) and bidding practices of the construction industry, topics in construction law and ethics.

CMET 445 CONSTRUCTION MANAGEMENT I

(Class 3, Cr. 3)

Prerequisite: CMET 344 and CMET 341 and CMET 450 or consent of instructor.

Business policy and problems relating to construction companies. Includes contractors' organization, financial management, project management, supervision, cost analysis, and equipment economics, and topics in construction law and ethics.

CMET 450 CONSTRUCTION SCHEDULING

(Class 3, Cr. 3)

Co-requisite: CMET 341 or consent of instructor.

A study of the planning and control of construction projects. Time schedules for materials, labor and equipment, expediting material delivery, bar charts, Critical Path Method (CPM) scheduling. Precedence diagrams and Program Evaluation Review Techniques (PERT). The course emphasizes the use of computers for scheduling and updating of the construction process.

CMET 487 DESIGN AND DEVELOPMENT FOR FACILITY MANAGEMENT

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CMET 493 or consent of instructor.

A study of the functional relationships required to design modern commercial, office, hospital, industrial and institutional facilities. Development and leasing of commercial buildings. Design of office interiors including an introduction to furniture and communications systems. A basic introduction to drafting and blueprint reading.

CMET 489 SENIOR PROJECT SURVEY

(Class 1, Cr. 1)

Prerequisite: Senior standing

Students will develop a topic for the following design project, CMET 490. Students will establish project scope, general and specific objectives, literature review and background, and establish time schedules for completion of the project. Students are encouraged to develop alternative proposals. Students will analyze a previously completed senior project.

CMET 490 SENIOR PROJECT

(Class 3, Cr. 3) *Experiential Learning*

Prerequisite: CMET 489 or consent of instructor.

The development of a project which will combine the skill and knowledge gained from various areas of study. The student will be expected to present a project which has been approved by his faculty advisor to a panel of departmental faculty chosen by the advisor. This presentation should include graphical material as well as oral and written communication.

CMET 493 FACILITY OPERATIONS, SCHEDULING AND MANAGEMENT

(Class 2, Lab. 3, Cr. 3)

Prerequisite: MGMT 200 and ARET 283 and CMET 495 or consent of instructor.

An introduction to the management, methods and equipment used in the remodeling or construction of commercial, office and institutional buildings. A study of the planning and control of construction projects including time schedules for materials, labor, equipment and maintenance; expediting material delivery; bar charts; Critical Path Method (CPM); and Program Evaluation Review Techniques (PERT) for scheduling. Business policy problems as they relate to facilities as well as financial management, project management, supervision, cost analysis and equipment costs will be discussed.

CMET 495 INTRODUCTION TO FACILITY MANAGEMENT

(Class 3, Cr. 3)

An introduction to topics directly related to the management of large facilities with an emphasis on architectural and engineering systems, maintenance, cost management, life safety, and grounds and landscaping maintenance.

CMET 499 SPECIAL ASSIGNMENTS

(Cr. 1 to 4)

Hours, subject matter and credit to be arranged by staff. Course may be repeated for credit up to nine hours.

Communication

COM 103 THE FRESHMAN SEMINAR IN COMMUNICATION

(Class 1, Cr. 1)

This course provides entry-level COM majors with skills and materials deemed important to their ultimate success in Communications at Purdue University Calumet.

COM 114 FUNDAMENTALS OF SPEECH COMMUNICATION

(Class 3, Cr. 3) *TRANSFER IN*

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through discussion to speaking in standard speaker-audience setting.

COM 201 INTRODUCTION TO MEDIA STUDIES

(Class 3, Cr. 3)

Introduction to Media Studies introduces student to the various fields in Mass Media including (but not limited to) Digital Media, Film, Journalism, the Internet, Radio, and Television. This course will survey the basic principles, theories, and processes of each specialized area.

COM 202 ELECTRONIC MEDIA

(Class 3, Cr. 3)

Prerequisite: COM 201

Origin, development, nature, and function of radio and television in America.

COM 210 DEBATING PUBLIC ISSUES

(Class 3, Cr. 3)

Prerequisite: COM 114

Study of argumentation as applied to public discourse. Lectures on logic and reasoning, library research methods, and bibliography, identification and analysis of issues, construction or organization of cases, refutation and rebuttal, and the phrasing and delivery of the argumentative speech. Preparation of debate cases.

COM 211 PRACTICUM IN SPEECH COMMUNICATION ACTIVITIES

(Cr. 1)

Practice and training in the theory and techniques of applied communication activities. May include projects in organizational communication or public relations, public presentations, or participation in competitive forensic events.

COM 213 VOICE AND DICTION

(Class 3, Cr. 3)

Prerequisite: COM 114

Introduction to the contemporary theories of interpersonal communication, with particular focus on the implications of the theories for the process of interpersonal and intrapersonal communication. Investigation and comparative analysis of rhetorical theories, linguistic theories, behavioral theories, quantitative theories and psychological theories will be emphasized, as will be construction and analysis of models of communication.

COM 214 COMPARATIVE THEORIES OF INTERPERSONAL COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 114

Introduction to the contemporary theories of interpersonal communication, with particular focus on the implications of the theories for the process of interpersonal and intrapersonal communication. Investigation and comparative analysis of rhetorical theories, linguistic theories and psychological theories will be emphasized, as will be construction and analysis of models of communications.

COM 225 INTRODUCTION TO RHETORIC AND SOCIAL INFLUENCE

(Class 3, Cr. 3)

Prerequisite: COM 114

A study of rhetoric as an agent of social change. Analysis of strategies and techniques of non-oratorical as well as oratorical forms of contemporary rhetorical situations.

COM 228 INTRODUCTION TO COMMUNICATION STUDIES

(Class 3, Cr. 3)

Introduction to Communication Studies will introduce students to the various fields of Communication discipline including (but not limited to) Interpersonal Communication, Marketing Communication, Organizational Communication, Performance Studies, Public Relations, Rhetoric and Small Group Communication. This course will survey the basic principles, theories and processes of each specialized area.

COM 236 MEDIA AND CULTURE

(Class 3, Cr. 3)

This course surveys film, music, art, popular magazines, television and other media in terms of their symbiotic relationship to diverse cultural practices including, among others, religion, romance, dance, sport, recreation, hobbies, and cuisine, and their connection to broader ethnic, gender and class cultural expressions. To understand how media represent, express and contribute to contemporary culture practices, students will consider mass market novels, professional sports, museums, music videos, talk radio, Hollywood and independent film, narrowcast cable television, websites, and other mass media genre.

COM 242 INTRODUCTION TO BROADCAST NEWS

(Class 3, Cr. 3)

This course assists students in writing for broadcast journalism, and broadcast delivery training, and offers a chance for exposure to area television and radio journalists.

COM 250 MASS COMMUNICATION AND SOCIETY

(Class 3, Cr. 3) TRANSFER IN

A survey of the print, broadcast and film media in their relationship and influence on society. Study topics include: mass communication theories, documentaries, commercialism, news media, media effects and control, feedback, educational broadcasting, and audience analysis.

COM 253 INTRODUCTION TO PUBLIC RELATIONS

(Class 3, Cr. 3)

Theories, methods, and practice of public relations and their application in industry, government, education, social agencies, and other institutions.

COM 255 INTRODUCTION TO NEWS REPORTING AND WRITING

(Class 2, Lab. 1, Cr. 3)

Prerequisite: ENGL 108 or ENGL 105

Fundamentals of gathering, evaluating, writing, and editing news. (Basic typing ability desirable.)

COM 256 INTRODUCTION TO ADVERTISING

(Class 3, Cr. 3)

This survey course provides the needed foundation for advanced courses in advertising, communication and marketing. The course examines the structure of advertising messages, how they are adapted to specific audiences, and the social setting in which they occur.

COM 290 SPECIAL TOPICS IN COMMUNICATION

(Class 1 to 3, Cr. 1 to 3)

Topics will vary.

COM 300 INTRODUCTION TO RESEARCH IN COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 114 and COM 228

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability and validity of both measurement and research design in communication research. Helpful to have taken a communication theory course such as COM 214, COM 320, COM 201, COM 250. It is not recommended to take COM 300 concurrently with COM 353.

COM 301 APPLIED COMMUNICATION RESEARCH

(Class 3, Cr. 3)

Prerequisite: COM 114 and COM 300

Students in applied Communication Research will be exposed to specific communication research methodologies in more depth and detail than possible in the introductory communication research course, COM 300. Students in Applied Communication Research will undertake research projects which apply research concepts and methods obtained in COM 300 and expand their knowledge of the art and practice of communication research...

COM 302 PUBLICATIONS DESIGN

(Class 2, Lab. 2, Cr. 3)

This course focuses on the design, layout and production of various documents using personal computers. Emphasis is given to principles of publication design and page makeup, typography, and the use of personal computers in business and industrial publishing. Lab sessions allow students hands-on experience in using desktop publishing software and computer systems.

COM 305 NEWS EDITING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: COM 255

Study of, and practice in, the fundamentals of editing copy for and display of news in the mass media.

COM 306 ADVANCED NEWS REPORTING AND WRITING

(Class 3, Cr. 3)

Prerequisite: COM 255

Advanced study of, and practice in, methods of journalistic research and presentation; preparation of in-depth news stories based on student research.

COM 307 WRITTEN AND ORAL COMMUNICATION FOR ENGINEERS

(Class 3, Cr. 3)

Prerequisite: ENGL 104 and COM 114 and ECE 275 and ECE 370 or ME 305 or CE 273

Course focuses on written and oral communication specifically for the environment, with special attention given to purpose, organization, audience analysis, and appropriate situational protocol. Written work emphasizes technical reports, technical descriptions, research skills, principles of document design, collaborative writing, and routine correspondence. Oral work emphasizes project presentations, conference planning and leadership, and small group dynamics.

COM 309 VISUAL COMMUNICATION

(Class 3, Cr. 3)

Visual Language is universal. This course will allow students to define visual language through investigating various visual mediums such as still images, film and television. Art elements of color, texture, space, composition, and design will be addressed. Various symbols and visual cues used to communicate messages will also be discussed.

COM 310 FAMILY COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 114 and COM 228

The application of theories of interpersonal communication to family life. Emphasis on feedback, empathy, and trust as contributing factors to effective communication within families. A case study approach is used.

COM 314 ADVANCED PRESENTATIONAL SPEAKING

(Class 3, Cr. 3)

Prerequisite: COM 114

Development of a marked degree of skill in the composition and delivery of various types of speeches including presentations in corporate board rooms, orientation meetings, banquet halls, public forums. Special emphasis on speeches related to the student's major vocational area.

COM 315 SPEECH COMMUNICATION OF TECHNICAL INFORMATION

(Class 3, Cr. 3)

Prerequisite: COM 114

The organization and presentation of information of a practical technical nature. Emphasis is placed upon the study, preparation, and use of audio-visual materials in such presentations.

COM 318 PRINCIPLES OF PERSUASION

(Class 3, Cr. 3)

Prerequisite: COM 114

Persuasion and its effects on behavior with emphasis on evidence and reasoning and on emotional and personal proof; practice in critical reception as well as effective composition of persuasive discourse.

COM 319 THE RHETORICAL TRADITION

(Class 3, Cr. 3)

A historical survey of major rhetorical theory as it relates to the development of Western civilization, with major emphasis on Aristotle and the New Rhetoric.

COM 320 SMALL GROUP COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 114

A study of group thinking and problem-solving methods; participation in and evaluation of committee and informal discussion groups.

COM 322 LEADERSHIP IN ORGANIZATION

(Class 3, Cr. 3)

Prerequisite: COM 114

This program serves as the foundation for developing core leadership skills. Focusing on the dynamics of leadership development within a personal, academic, community, and organizational context, students will learn to apply basic leadership skills through a series of experiential learning sessions and lectures. These core skill areas include written, oral and interpersonal communication; processing experiences into practical application; understanding leadership styles and roles; human behavior; on-going self-assessment; diversity, as a value; basic technical competencies; and effective life/time management.

COM 323 BUSINESS AND PROFESSIONAL SPEAKING

(Class 3, Cr. 3)

Prerequisite: COM 114

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate.

COM 325 INTERVIEWING: PRINCIPLES AND PRACTICE

(Class 3, Cr. 3)

Prerequisite: COM 114

Theory and practice of methods in selected settings; informational, employment, and persuasive. Emphasis on communication between two persons, questioning techniques and the logical and psychological bases of interpersonal persuasion.

COM 326 SPEECHWRITING

(Class 3, Cr. 3)

Prerequisite: COM 114 and COM 228

By studying the rhetorical and performative elements for creating a successful speech, students will learn various speechwriting strategies that can be applied in political or organizational contexts.

COM 327 INTERNATIONAL COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 201

Introduction to the historical development of international communication for trade and diplomacy to the globalization of media markets and media models in news and entertainment. Modernization, developmental, dependency, hegemony, free flow of information, political economy, and other historical, administrative and critical perspectives will also be discussed. Contemporary international media practices, including foreign direct investment cultural hybridity and contraflow.

COM 330 THEORIES OF MASS COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 201

An examination of mass communication theories and theorists. Readings and discussion of McLuhan, Lippman, LaFleur, Lazarsfeld, Schramm, Stephenson, and other significant contributors.

COM 331 AUDIO PRODUCTION

(Class 1, Lab. 4, Cr. 3 or Class 2, Lab. 4, Cr. 3)

Prerequisite: COM 201

Basic principles of producing, directing, and writing for radio. Treats program types, production methods, techniques of the sound studio, principles of directing radio programs, and laboratory practice in production and direction.

COM 332 TELEVISION PRODUCTION

(Class 1, Lab. 4, Cr. 3)

Prerequisite: COM 331 and COM 201

Basic principles of producing, writing, and directing for television. Classroom television productions are produced in the Purdue Calumet television studio. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.

COM 334 JOURNALISM FOR THE ELECTRONIC MEDIA

(Class 2, Lab. 2, Cr. 3)

Prerequisite: COM 201

The development and practice of electronic journalism with projects relating to straight news, feature reports, commentary, editorial, interview, and documentary.

COM 343 FUNDAMENTALS OF ORAL INTERPRETATION

(Class 3, Cr. 3)

Prerequisite: COM 114

A study of basic theories of oral interpretation including the analysis and presentation of literature.

COM 347 RADIO AND TELEVISION PERFORMANCE

(Class 1, Lab. 4, Cr. 3)

Prerequisite: COM 201

This course addresses the relationship between the producer, the director, and the talent in a production situation. Practice in performing for radio and television, as well as auditioning talent is the focus of this class.

COM 350 INTERRACIAL COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 114 and COM 228

Analysis of problems and solutions in interracial communication. Investigation of negative attitudes and other barriers impeding interethnic communication, especially between blacks and whites. Use of model communicative situations in interracial dialogue.

COM 352 MASS COMMUNICATION LAW

(Class 3, Cr. 3)

Prerequisite: COM 201

Study of Anglo-American traditions and trends, as well as current American conditions of the laws of libel, privacy, fair comment and criticism, privilege, property rights, and copyright as many factors affect the print journalist and the broadcaster. Emphasis is on existing state and federal regulations and precedents.

COM 353 PROBLEMS IN PUBLIC RELATIONS

(Class 3, Cr. 3)

Prerequisite: COM 253

Approaches to problems in public relations as they occur in industry, government, education, social agencies, and other institutions. Helpful to have taken Advanced Public Relations - COM 460. It is not recommended to take COM 300 concurrently with COM 353.

COM 365 COMMUNICATION AND AGING

(Class 3, Cr. 3)

Prerequisite: COM 114

Study of communication with and among the elderly, within the contexts of family, social networks, and social and health providers. Effects of communication on the aged and the perception of aging will be discussed.

COM 371 HEALTH COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 114

Exploration of the communication competencies needed by health care professionals (doctors, dentists, nurses, social workers, therapists, etc.) in the performance of their health care tasks. The course will emphasize helper-helpee interviewing, verbal and nonverbal skills, group interaction, intercultural communication, health care organizations, and therapeutic communication.

COM 390 SPECIAL TOPICS IN COMMUNICATION

(Class 1 to 3, Cr. 1 to 3)

Topics will vary.

COM 403 COMMUNICATION ETHICS

(Class 3, Cr. 3)

Prerequisite: COM 201 or COM 250

Through research and discussion, students will develop an understanding of the

ethical issues confronting the mass media and will formulate a framework which can be used for resolving ethical questions in their professional work.

COM 405 THE RHETORIC OF WOMEN'S RIGHTS

(Class 3, Cr. 3)

Prerequisite: COM 114

An analysis of the major arguments and persuasive techniques used in the American women's movement and continuing through the current struggle for equal rights. Included will be major speeches as well as non-oratorical forms of rhetorical messages.

COM 418 COMMUNICATION AND GENDER

(Class 3, Cr. 3)

Prerequisite: COM 114

An exploration of how men and women differ in the communication behavior by examination of an array of communication concepts and contexts. An exploration of gender differences as developed through our perceptual processes, our socialization processes, and our communication processes. To provide the student a better understanding and awareness of the gender differences in order to improve combination behaviors and to enable better understanding of why effective communication between men and women is often difficult to accomplish.

COM 420 INTRODUCTION TO ORGANIZATIONAL COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 228 or consent of instructor

Examination of the communication concepts and practices related to the function and success of organizations. Formal and informal channels will be analyzed on the basis of use, source content, potency and trustworthiness. Readings and analyses will focus on goals, reliability and applicability appropriate of organizational settings. Types of organizational settings. Types of organizations to be studied will include industrial giants, governmental agencies, social and educational administrative bodies, and formal task groups.

COM 425 RHETORICAL CRITICISM

(Class 3, Cr. 3)

Prerequisite: COM 114

A comparative study of the writings on traditional and contemporary rhetorical criticism. Students will have an opportunity to describe, analyze, interpret, and evaluate persuasive discourse.

COM 426 ETHNICITY AND COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 114

Ethnicity and Communication explores communication processes and strategies used by African-Americans, Latinos, Asian-Americans, and Euro-Americans. The course focuses on the meaning of ethnic identification and celebrates ethnic communication differences.

COM 429 ADVERTISING CAMPAIGNS

(Class 3, Cr. 3)

Prerequisite: COM 256 and COM 446

Emphasize the preparation of a complete advertising campaign for a business or non-profit organization. The student will be able to integrate marketing research and segmentation, media, and promotion plans, strategy, creative and presentation in a unified campaign to serve a local or national organization.

COM 434 PRACTICUM IN RADIO/TV

(Class 1, Lab. 4, Cr. 3)

Prerequisite: COM 331 and COM 332

Students engage in Independent Study projects and actual production of a television program under the direction of a professor or Purdue Calumet television studio manager.

COM 436 SCRIPT WRITING

(Class 3, Cr. 3)

Prerequisite: ENGL 105

Study of forms and materials suitable for the electronic mass media; practice in selection, adaptation, and organization of program materials.

COM 437 PERFORMANCE PRACTICUM

(Class 3, Cr. 3)

Performance Practicum extends performance knowledge and skills acquired in COM 343 Fundamentals of Oral Interpretation. Students will participate as scriptors, directors, and performers in a campus and community performances.

COM 439 FOCUS GROUP RESEARCH

(Class 3, Cr. 3)

Prerequisites: COM 114 or 115

In Focus Group Research, students will learn when to use and how to conduct this specific method of qualitative inquiry. Through theory and practice, this course will provide the information necessary for students to conduct focus groups in organizational academic contexts.

COM 441 ADVANCED TELEVISION PRODUCTION

(Class 1, Lab. 4, Cr. 3)

Prerequisite: COM 331 and COM 332 and COM 201

Students will produce, direct and edit programs which will be aired via cable or closed circuit. An emphasis on remote television production and linear editing. Students will produce, direct and edit various programs, which will be suitable for airing.

COM 443 ADVERTISING MEDIA

(Class 3, Cr. 3)

Prerequisite: COM 256

This course is an introduction to advertising media planning in traditional and new media to creatively and effectively reach targeted prospects. Attention is given to media characteristics, media terminology, scheduling, testing, and buying efficiencies. Included in the use of syndicated media research and development of media plans.

COM 445 TELEVISION EDITING

(Class 1, Lab. 4, Cr. 3)

Prerequisite: COM 331 and COM 332

A study of the history of editing and the practical application of current editing techniques. Students will learn to apply both analog and digital non-linear editing techniques to class assignments.

COM 446 ADVERTISING MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: COM 256

This course consider advertising from the perspective of managers and practitioners responsible for identifying and solving the advertising problems of a business. The course emphasizes the application of concepts, such as the planning of advertising strategy, the execution of target marketing, budgeting, creative development and media decisions, with the goal of developing integrated marketing communications campaigns.

COM 448 APPLIED MASS MEDIA RESEARCH

(Class 3, Cr. 3)

Prerequisite: COM 201 and COM 228

Through an examination of current research in mass media, Applied Mass Media Research will provide students with the necessary tools to conduct and critique research that pertains to specifically to the mass media. Students will learn how to research a mass media related issue.

COM 451 MAGAZINE JOURNALISM

(Class 3, Cr. 3)

Prerequisite: COM 255

Examination of magazine staff organization, market analysis, and editorial consent. Study of, and practice in, the writing of a variety of nonfiction materials for magazines. Emphasis is on the adaptation of topics and presentation of editorial policies and reader groups.

COM 452 PRACTICUM IN JOURNALISM

(Class 1, Lab. 2, Cr. 2)

Prerequisite: COM 255

Assigned projects in journalism.

COM 460 ADVANCED PUBLIC RELATIONS

(Class 3, Cr. 3)

Prerequisite: COM 253 and COM 255

Research design and implementation skills applied by students individually and in groups to actual business communication problems.

COM 463 MASS MEDIA CRITICISM

(Class 3, Cr. 3)

Prerequisite: COM 201

Utilizing the current media criticism theories and models, students will learn how to critique a variety of media genres. Students will examine the social and political messages inherent in media messages.

COM 465 VISUAL AESTHETICS IN TV AND FILM*(Class 3, Cr. 3)*

This course examines the visual aesthetics of television and film. Topics covered are picture composition, lighting, acting, directing, continuity, cinematography, editing, story line, and costume.

COM 470 WOMEN IN THE MEDIA*(Class 3, Cr. 3)**Prerequisite: COM 114 or COM 201 or WOST 121*

Focusing on the contributions made by women in newspaper, television, film and performance, this course will explore how women are shaping societal and cultural values.

COM 475 ETHNIC IDENTITY IN FILM*(Class 3, Cr. 3)**Prerequisite: COM 114*

Ethnic Identity in Film explores the construction of American ethnicity in mainstream American films. By examining films that reflect a particular ethnic sensibility and created by an individual of that particular ethnicity, this course will explore values and traditions.

COM 490 INTERNSHIP IN COMMUNICATION*(Class 1 to 6, Lab. 0 to 6, Cr. 1 to 6)**Prerequisite: COM 114*

Variable title, variable pattern, variable credit (1-6). Experiential, supervised training in one of the areas of specialization in communication. Students will work in an organization under supervision and are required to devote to the internship the number of hours per week which the organization supervisor and academic coordinator have established. Students will spend a minimum of five hours per week at the place of the internship. Students will be evaluated by the organization supervisor and the academic coordinator.

COM 491 SPECIAL TOPICS IN COMMUNICATION*(Cr. 1 to 6)*

Variable pattern. (Variable credit, 1-6.)

COM 508 NONVERBAL COMMUNICATION IN HUMAN INTERACTION*(Class 3, Cr. 3)*

An examination of theoretical writings and nonverbal study—e.g., the environmental influence, space and territory relationships, physical behavior, and vocal cues. One unit will specifically concern itself with measurement, recording or transcription methods used in nonverbal study.

COM 512 THEORIES OF INTERPERSONAL COMMUNICATION*(Class 3, Cr. 3)**Prerequisite: COM 214*

Review of contemporary theories, analysis of concepts, models, and pertinent research across the broad spectrum of interpersonal communication.

COM 515 PERSUASION IN SOCIAL MOVEMENTS*(Class 3, Cr. 3)**Prerequisite: COM 318*

A study of the concept of persuasion in social movement theory and the role rhetoric has played historically in selected social movements such as suffrage, women's liberation, civil rights, evangelism, and trade unionism.

COM 517 COMMUNICATION IN POLITICS*(Class 3, Cr. 3)**Prerequisite: COM 318*

Development and application of critical standards to the rhetoric employed by candidates for public office. Study of the campaign strategies employed by parties and their candidates at various levels of government.

COM 518 THEORIES OF PERSUASION*(Class 3, Cr. 3)*

Review of contemporary theories, including analysis of concepts, models, and pertinent research across the broad spectrum of persuasive communication

COM 520 SMALL GROUP COMMUNICATION*(Class 3, Cr. 3)**Prerequisite: COM 320*

Survey and critical evaluation of theoretical and empirical literature dealing with human communication within small group settings.

COM 521 THEORIES OF RHETORIC*(Class 3, Cr. 3)**Prerequisite: COM 318*

A comprehensive study of the principle figures, theories, and movements in rhetoric from the classical era to the present.

COM 525 ADVANCED INTERVIEWING AND CONFERENCE METHODS*(Class 3, Cr. 3)*

Application of modern communication theory to interview situations, with emphasis upon problems involving superior-subordinate relations, information-getting, and interpersonal misunderstanding. Classroom demonstrations based upon real-life cases supplemented by off-campus interviews; practice in briefing techniques.

COM 531 SPECIAL TOPICS IN MASS COMMUNICATION*(Class 3, Cr. 3)**Prerequisite: COM 250*

Critical analysis and evaluation of current and continuing problems in both commercial and public mass communication.

COM 531A EXPERIENTIAL TOUR IN VENEZUELA*(Class 3, Cr. 3)**Prerequisite: COM 250*

Students will explore the history of media in Latin America and its relation to political developments in that region. Political and media issues in Mexico, Nicaragua, and Venezuela will be addressed. Specific attention will be paid to political relations between the United States and Latin America and their influence on the generation of information. By the end of the course, students should be able to identify many of the political and social relations connected to media structures and communication and cultural content in several Latin American nations. May 15-June 1 MTWR - 12:30-3:30 on campus at Purdue University Calumet. June 3-11, 2006 Experiential Tour in Venezuela. Cost \$2500 includes tuition, airfare, lodging, educational tours, transportation, two meals a day, transportation in Venezuela and travelers insurance. \$1000 deposit due May 1, 2006.

COM 532 TELECOMMUNICATION SYSTEMS MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: COM 202*

A study of problems of organization and management of radio and television stations—both commercial and public—with emphasis upon economic factors as well as on the interrelationships of various departments. Special problems related to programming, production, sales, public relations, CATV, audience, governmental regulation, current and future trends will be treated.

COM 533 DOCUMENTARY TELEVISION*(Class 1, Lab. 4, Cr. 3)**Prerequisite: COM 441*

Advanced theory and techniques in the production of documentary television. Viewing and evaluation of representative television documentaries, as well as experience in producing short documentary programs.

COM 534 COMPARATIVE TELECOMMUNICATION SYSTEM*(Class 3, Cr. 3)*

Historical, sociological, and political aspects of various systems of broadcasting throughout the world. Examination of American, Canadian, British, French, German, Soviet, and other broadcast institutions to discover why and how they are regulated and what impact they have on political, social, and economic development.

COM 536 RADIO AND TELEVISION WRITING*(Class 3, Cr. 3)**Prerequisite: COM 202*

Study of forms and materials suitable for both media; practice in selection, adaptation, and organization of special program materials; special uses of media in education.

COM 537 EDUCATIONAL/INSTITUTIONAL TELEVISION*(Class 3, Cr. 3)*

Survey of the educational and instructional applications of radio and television materials; analysis of selected problems in the educational uses of the media; analysis and application of production practices as related to the learning process.

COM 540 ADVANCED ORAL INTERPRETATION*(Class 3, Cr. 3)*

Study and practice of the techniques of oral interpretation for public performances. Emphasis on analysis of material, program building, and criticism. Consideration also given to utilizing oral reading techniques in the teaching of literature and speech at the secondary level.

COM 541 ENSEMBLE INTERPRETATION

(Class 3, Cr. 3)

A study of the history, theories, and styles of group oral presentation of literature including fictional, dramatic, non-fictional, and thematic subjects. Emphasis is placed on experimentation in the styles of presentation and on the development of analytical insights into various literary forms.

COM 545 THEORIES OF ORAL INTERPRETATION

(Class 3, Cr. 3)

A study of the theories of oral interpretation of literature that have emerged from the classical period of Greece and Rome to the present. Emphasis on the influence of leaders in the field during the eighteenth, nineteenth, and twentieth centuries.

COM 559 CURRENT TRENDS IN MASS COMMUNICATION RESEARCH

(Class 3, Cr. 3)

An examination of current research as it contributes to understanding the process and effects of mass communication. Topics covered include gatekeepers and information control, audience selection processes and uses, media content and social learning, the effects of adult programming on children, and the effects of the media on the governmental process.

COM 560 RHETORICAL DIMENSION OF MASS MEDIA

(Class 3, Cr. 3)

Prerequisite: COM 521

A study of the ways in which rhetorical elements and processes are embodied in and modified by the media of mass communication. The rhetorical functions of print and electronic media are examined individually as well as within the context of specific campaigns and movements.

COM 574 ORGANIZATIONAL COMMUNICATION

(Class 3, Cr. 3)

Survey of the theoretical and empirical literature dealing with human communication behavior as it occurs within the context of complex organizations. Among topics covered are superior-subordinate communication, communication networks, message distortion, feedback processes, conflict management, semantic and stylistic dimensions of messages, and communication in decision making.

COM 582 DESCRIPTIVE/EXPERIMENTAL RESEARCH IN COMMUNICATION

(Class 3, Cr. 3)

Introduction to modes of quantitative search in communication, including problem formulation, basic measurement concepts, elementary methods of data collection and analysis, and basic designs for descriptive and experimental research, individual and/or group research projects are planned, conducted and reported.

COM 583 RESEARCH AND ASSESSMENT IN ORGANIZATIONAL COMMUNICATION

(Class 3, Cr. 3)

Prerequisite: COM 574 and COM 582

An overview of applied research methodologies in organizational communication, the course focuses on the design of field investigations and the use of self-report measures, network analysis, and interviewing in organizational communication research. These general methodologies are applied to specific research approaches.

COM 584 HISTORICAL/CRITICAL RESEARCH IN COMMUNICATION

(Class 3, Cr. 3)

Introduction to modes of qualitative research in communication, including theoretical assumptions, bibliographical methods, varying approaches to historical and critical inquiry, and the standards and techniques of scholarly writing.

COM 590 DIRECTED STUDY OF SPECIAL PROBLEMS

(Class 3, Cr. 3)

Directed study of special problems. May be repeated for credit.

COM 612 SEMINAR: SPECIAL TOPICS IN INTERPERSONAL COMMUNICATION

(Class 3, Cr. 3) (May be repeated for credit)

Intensive study of selected topics varying from semester to semester, from the theoretical and research literature of interpersonal communication. Topics may include communication models, information theory, systems theory, general semantics, sociolinguistics, etc., as they relate to the study of interpersonal communication.

COM 621 SEMINAR: SPECIAL TOPICS IN RHETORICAL THEORY

(Class 3, Cr. 3) (May be repeated for credit)

Intensive study of selected topics, varying from semester to semester, from the literature of rhetorical theory.

COM 632 SEMINAR: SPECIAL TOPICS IN MASS COMMUNICATION

(Class 3, Cr. 3) (May repeat for credit)

Intensive study of selected topics, varying from semester to semester, from the literature of mass communication. Topics may include institutional analysis, mass communication law, information diffusion, uses of mass communication, or other issues.

COM 674 SEMINAR: SPECIAL TOPICS IN ORGANIZATIONAL COMMUNICATION

(Class 3, Cr. 3) (May be repeated for credit.)

Intensive study of selected topics, varying from semester to semester, from the theoretical and research literature of organizational (including business and industrial) communication; analysis of recurring communication problems in complex organizations; critique of research findings and methodologies.

COM 698 RESEARCH MS THESIS

(Class 0 to 18, Cr. 1 to 18)

Research coursework for MS Thesis.

Computer Science

CS 100 AN INTRODUCTION TO COMPUTER SCIENCE

(Class 1, Cr. 1)

This course is intended to: integrate freshman computer science majors into the department; help them adjust to university life; assist them in developing their academic and intellectual capabilities; introduce them to contemporary issues in computer science; provide an overview of the careers open to those with degrees in computer science. This course must be taken Pass/No Pass only. Credit by exam is not available for this course.

CS 123 PROGRAMMING I: JAVA

(Class 3, Cr. 3)

Prerequisite: MA 151 or MA 159 or MA 163

This course is an introduction to computer science and computer programming with an emphasis on their scientific basis and applications. The primary language for this course is Java. The topics of the course includes: identifiers, basic data types, operators, expressions, control statements, methods, recursion program structure, arrays, objects, classes, inheritance, polymorphism, and the design of simple graphical user interfaces.

CS 124 PROGRAMMING II: C++

(Class 3, Cr. 3)

Prerequisite: CS 123

This course is an extension of CS 123 that introduces the C++ programming language. The topics of the course includes: functions, program structure, pointers, objects classes, and inheritance in C++ files, standard template library, streams and the preprocessor.

CS 206 COMPUTER ALGEBRA AND PROGRAMMING

(Class 3, Cr. 3)

Prerequisite: MA 164

Using a computer algebra system to solve mathematics problems, learning how to translate mathematical notation and procedures into the language of the computer algebra system. Learning the basic concepts of programming languages, comparing programming concepts with mathematical concepts.

CS 223 COMPUTER ARCHITECTURE AND ASSEMBLY LANGUAGE

(Class 3, Cr. 3)

Prerequisite: CS 124 and MA 163

An introduction to the fundamental concepts of computer architecture progressing from the digital logic level to the microarchitecture level and then to the instruction set level. Assembly language and the assembly process will also be included.

CS 275 DATA STRUCTURES

(Class 3, Cr. 3)

Prerequisite: CS 124 and MA 163

Data structures describe the way that computer programs organize and store information. This course introduces the specification, representation and manipulation of the basic data structures common to much of computer programming such as:

linked lists, arrays, stacks, queues, strings, trees, graphs, search trees, heaps, hash tables, and B-trees.

CS 302 OPERATING SYSTEMS

(Class 3, Cr. 3)

Prerequisite: CS 275 and CS 223

An operating system manages all of the hardware and software resources of a computer. This course provides an introduction to the basic concepts and terminology of operating systems. Topics will include multiprogramming, CPU scheduling, memory management, file systems, concurrent processes, multiprocessors, security, and network operating systems.

CS 309 DISCRETE MATH STRUCTURE

(Class 3, Cr. 3)

Prerequisite: MA 164

This course is the study of finite and discrete mathematical structures relating to the theory of computation. Topics will include directed and undirected graphs and their relation to these structures, combinatorial problems inherent in computation, Boolean algebra, and recurrence relations.

CS 316 PROGRAMMING LANGUAGES

(Class 3, Cr. 3)

Prerequisite: CS 275

The study of programming language features and their implementation in different types of programming languages. The design goals and motivations for various languages will be discussed. Topics will include a comparison of block-structured, object-oriented, functional, and logic programming languages. The advantages and disadvantages of each type of language will be considered. Specific examples of each type of language will be included.

CS 330 PROGRAMMING II

(Class 3, Cr. 3)

CS 332 ALGORITHMS

(Class 3, Cr. 3)

Prerequisite: CS 275

An algorithm is a procedure for solving a problem in a finite number of steps. Algorithms, along with data structures, form the fundamental building blocks of computer programs. The types of algorithms discussed will include sorting, searching, probabilistic, graph, and geometric algorithms. The following algorithm techniques are covered: backtracking, divide and conquer, branch and bound, greedy method, and dynamic programming.

CS 342 INTRODUCTION TO COMPUTER-BASED BIOMEDICAL IMAGE ANALYSIS

(Class 4, Cr. 4)

Prerequisite: MA 154

Introduction to image, manipulation and analysis. Biomedical materials to be analyzed include electrophoretic gels, bacterial agar plates, cells and tissues, x-ray films and CAT scan images. Personal computer systems and the basic programming skill of the C language also will be introduced.

CS 404 DISTRIBUTED SYSTEMS

(Class 3, Cr. 3)

Prerequisite: CS 302

A distributed system is two or more computers working together as a single unit. These systems are essential to the understanding of present and future computer applications. This course will include the following topics: concurrent processing, threads, network programming, distributed file systems, remote procedure calls, sockets, distributed objects, client-server models, and internet protocols.

CS 410 AUTOMATA AND COMPUTABILITY

(Class 3, Cr. 3)

Prerequisite: CS 275 and CS 309

A finite automaton is a mathematical model for a computation system. Computer science embodies many examples of finite state systems. This course will cover the basic principles of deterministic and non-deterministic finite automata, Turing machines, formal language theory, regular expressions, context-free grammars, the halting problem, and unsolvability.

CS 416 SOFTWARE ENGINEERING

(Class 3, Cr. 3)

Prerequisite: CS 302

Software engineering is the study of the theory, methods, and tools which are needed to develop large, complex software systems. This course covers the speci-

fication, design, documentation, implementation and testing of software systems. Software life cycle, principles of project management, and case studies are also covered. A group project will be assigned.

CS 420 SENIOR DESIGN PROJECT

(Class 3, Cr. 3)

The objective of this course is to provide students with concrete experience in writing advanced computer programs for practical applications in science or industry. The student develops the necessary software using appropriate techniques and prepares documentation for the use and support of the completed system. Prerequisite: Senior level standing in Computer Science major

CS 442 DATABASE SYSTEMS

(Class 3, Cr. 3)

Prerequisite: CS 275

A database is a system whose purpose is to organize, retrieve, and maintain large amounts of information. This course introduces the concepts and structure used in designing and implementing database systems. Topics include hierarchical, network, relational, and object-oriented data models, database design principles, normalization, data dictionaries, query languages and processing.

CS 455 COMPUTER GRAPHICS

(Class 3, Cr. 3)

Prerequisite: MA 265 and CS 275

Computer graphics provides a mechanism for creating and manipulating images by means of a computer. This course covers two-dimensional curve drawings, view transformations, geometric modeling, projections, ray tracing, surface patch, three-dimensional object rendering, shading, and animation. Windows programming using OpenGL, and MFC will also be introduced.

CS 462 INTRODUCTION TO ARTIFICIAL INTELLIGENCE

(Class 3, Cr. 3)

Prerequisite: CS 275

This course will cover the following topics: problems and problem spaces, heuristic search, forward and backward reason, breadth-first vs. depth-first search, and/or graphs, conversion to clause form and resolution. A brief introduction to LISP programming will also be included.

CS 480 THE PRACTICUM IN APPLIED MATHEMATICS

(Class 3, Cr. 3)

The practicum course of a small team (a faculty advisor and 1-4 students) working on a real problem obtained in conjunction with a local business or industry. Not more than two terms of CS 480 may be taken for credit.

CS 482 DISCRETE COMPUTATIONAL STRUCTURES

(Class 3, Cr. 3)

Prerequisite: MA 262

Finite and discrete mathematical structures relating to the theory of computers. Directed and undirected graphs and their relation to these structures. Combinatorial problems inherent in computation. Introduction to mathematical analysis of algorithmic complexity.

CS 490 TOPICS IN COMPUTER SCIENCES FOR UNDERGRADUATES.

(Class 1 to 5, Cr. 1 to 5)

Supervised reading and reports in various fields. Open to students only with the consent of the department.

CS 514 NUMERICAL ANALYSIS

(Class 3, Cr. 3)

Prerequisite: CS 414

Iterative methods for solving nonlinear equations; linear difference equations, applications to solution of polynomial equations; differentiation and integration formulas; numerical solution of ordinary differential equations; roundoff error bounds.

CS 515 NUMERICAL LINEAR ALGEBRA

(Class 3, Cr. 3)

Prerequisite: CS 314 or MA 265 or MA 351 and MA 511

Direct and iterative solvers of dense and sparse linear systems of equations, numerical schemes for handling symmetric algebraic eigen value problems, and the singular-value decomposition and its applications in linear least square problems.

CS 590 TOPICS IN COMPUTER SCIENCES

(Class 1 to 5, Cr. 1 to 5)

Directed study for students who wish to undertake individual reading and study on approved topics.

Earth, Atmospheric Sciences

EAS 110 SURVEY OF GEOLOGY

(Class 2, Lab. 2, Cr. 3 or Class 2, Lab. 3, Cr. 3)

Not available for credit to students with credit in GEOS 111 or EAS 111.

A survey of concepts, methods, and materials of physical and historical geology of professional and cultural interest to students who do not need the rigorous treatment of GEOS 111 or 112 or EAS 111 or 112. Laboratory will illustrate the methods and materials used in geologic studies.

EAS 161 SURVEY OF ASTRONOMY

(Class 2, Lab. 3, Cr. 3)

An introduction to the science of astronomical observation and interpretation including the historical development of calendars, and the structure of the solar system, the classification and the lifecycles of stars and other stellar objects, galaxies, and modern cosmological models. Laboratory exercises will be simple demonstrations of basic principles: the universe square law, composition of planets and their atmospheres, backyard urban observation, stellar spectra, and use of a computer-based planetarium.

EAS 191 INTRODUCTORY TOPICS IN EARTH AND ATMOSPHERIC SCIENCE

(Class 1 to 3, Cr. 1 to 3)

This is a variable course. The title and content will vary.

EAS 220 SURVEY OF PHYSICAL GEOGRAPHY

(Class 2, Lab. 2, Cr. 3 or Class 2, Lab. 3, Cr. 3)

A study of landforms, climates, soils and resources that comprise the world's natural environments.

EAS 222 WEATHER STUDIES

(Class 2, Lab. 2, Cr. 3)

Online Weather Studies covers the composition and structure of the atmosphere, the flow of energy to, from and through the atmosphere, and the resulting motions. The basic physical principles of atmosphere conditions are stressed through the study of weather from meteorological data delivered via the Internet. Particular attention is given to severe weather topics and the effects of weather and climate on global societies.

EAS 223 OCEAN STUDIES

(Class 2, Lab. 2, Cr. 3)

Online Ocean Studies examines the ocean as it interacts with other components of the Earth. Basic physical and chemical properties of the ocean are stressed through oceanographic data delivered via the Internet. Topics include the flow and transformations of water and energy into and out of the ocean, ocean circulation, marine life and its adaptations, climate change, and the human/ societal impacts pertaining to the ocean.

Electrical, Computer Engineering

ECE 201 LINEAR CIRCUIT ANALYSIS I

(Class 3, Cr. 3)

Prerequisite: MA 163 and MA 164 and PHYS 152 all with a C or better Pre/Co-requisite: ECE 207

Volt-Ampere characteristics of circuit elements; independent and dependent sources; Kirchoff's Laws and circuit equations. source transformations; Thevenin's and Norton's Theorems; Superposition. Transient response of RC, RL and RLC circuits. Sinusoidal steady-state and impedance. Instantaneous and average power. A minimum grade of C is required for the course prerequisites.

ECE 202 LINEAR CIRCUIT ANALYSIS II

(Class 3, Cr. 3)

Prerequisite: ECE 201 and MA 261 all with a C or better, ECE 207 Pre/Co-requisite: ECE 218 and MA 264

A continuation of ECE 201. The complex frequency plane; resonance; coupled circuits. Two-port network parameters. Polyphase analysis. Fourier series; Fourier Transform; Laplace Transform.

ECE 207 ELECTRONIC MEASUREMENT TECHNIQUES

(Lab. 3, Cr. 1)

Pre/Co-requisite: ECE 201

Introduction to basic instrumentation and measurement techniques; introduction to the experimental methods necessary for laboratory investigation. Introduction to laboratory report writing methods. The student is introduced to computer-aided circuit analysis methods.

ECE 218 LINEAR CIRCUITS LABORATORY II

(Lab. 3, Cr. 1)

Prerequisite: ECE 207 Pre/Co-requisite: ECE 202

A continuation of ECE 207, with the introduction of advanced measurement methods and more sophisticated instrumentation.

ECE 233 MICRO COMPUTERS IN ENGINEERING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ENGR 151

An introduction to microcomputers and microcontrollers with emphasis on single board embedded systems; gates, memory, microcomputer hardware, data representation, programming, input/output, interfacing, analog to digital conversion, digital to analog conversion, transducers, sensors, actuators, and the design and development of turnkey systems.

ECE 251 OBJECT ORIENTED PROGRAMMING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ENGR 152 with a C or better

The C++ and Java programming languages are presented. Students will be introduced to classes, inheritance, polymorphism, class derivation, abstract classes, interfaces, function overloading, container classes and template classes.

ECE 275 ELECTRONICS DEVICES

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECE 202 and ECE 218 all with a C or better

Electronic amplifiers; operational amplifier circuits; diode characteristics and circuit applications; bipolar junction transistor (BJT) and MOSFET characteristics, operating modes biasing, linear amplifier configurations; ideal characteristics of logic devices; basic logic devices using BJTs and MOSFETs.

ECE 291 INDUSTRIAL PRACTICE I

Practice in industry and comprehensive written report of this practice. This course is for Cooperative Education Students Only.

ECE 292 INDUSTRIAL PRACTICE II

Practice in industry and comprehensive written report of this practice. This course is for Cooperative Education students only.

ECE 301 SIGNALS AND SYSTEMS

(Class 3, Cr. 3)

Prerequisite: ECE 202 and MA 264 all with a C or better

Continuous and discrete signal and system analysis and representation. Fourier Series and transforms, Bode plots, sampling and discrete Fourier transforms, Laplace Transforms Transient response characteristics, Discrete-time systems difference equations, Z-Transforms, S-plane to Z-plane mappings and stability relationships. Continuous and discrete systems: convolution, state space representation, and solution of state equations.

ECE 302 PROBABILISTIC METHODS IN ELECTRICAL ENGINEERING

(Class 3, Cr. 3)

Prerequisite: MA 265 and ECE 202 or ME 325 Pre/Co-requisite: ECE 301

An introductory treatment of probability theory including distribution and density functions, moments and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and responses of linear systems to random inputs.

ECE 311 ELECTRIC AND MAGNETIC FIELDS

(Class 3, Cr. 3)

Prerequisite: MA 264 and PHYS 261 all with a C or better

Continued study of vector calculus, electrostatics, and magnetostatics. Maxwell's equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas.

ECE 312 ENGINEERING PROJECT MANAGEMENT

(Class 3, Cr. 3)

Introduction to principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling, validation, lifecycles costings, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control.

ECE 335 ELECTRONICS-SYSTEMS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 275

Topics in multistage amplifiers, feedback amplifiers, oscillators, operational amplifiers, analog systems, power amplifiers and systems, communication systems.

ECE 354 SOFTWARE ENGINEERING DESIGN I

(Class 3, Cr. 3)

Prerequisite: ECE 251

The design and implementation of larger scale software in Java. Introduction of software engineering design concepts. Application of fundamental concepts and programming strategies useful in the context of any programming language.

ECE 370 DIGITAL SYSTEMS-LOGIC DESIGN

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ENGR 152

Introduction to the logical design and analysis of digital systems; Boolean algebra; combinational logic; minimization techniques; Karnaugh mapping. Introduction to sequential systems analysis and design.

ECE 371 MICROPROCESSOR SYSTEMS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 233 and ECE 370 all with a C or better

Microprocessor based system design; system bus organization; CPU design. Interfacing RAM and ROM memories to microprocessors; input-output techniques; peripheral interfacing and interface standards. Application of CAD software to the design of microcomputer systems.

ECE 375 DIGITAL INTEGRATED CIRCUITS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 275

Analysis and design of digital electronic circuits. Bipolar and MOS device modeling. MOS integrated circuit design and timing considerations. Bipolar, BiCMOS and GaAs digital circuits. monostable, and astable multivibrators. Introduction to A/D and D/A converters.

ECE 380 COMPUTERS IN ENGINEERING ANALYSIS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ENGR 151, ECE 201, and MA 264 all with a C or better, and ECE 202 or ME 275

Theory and application of computers in simulation, data acquisition control, instrumentation, and in the solution of engineering problems. Development of mathematical models suitable for computer solutions, and numerical techniques. Traditional and modern software such as FORTRAN, C, LabVIEW, MATLAB, Lotus 1-2-3 and Excel will be used.

ECE 384 LINEAR CONTROL SYSTEMS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 301

Introduction to classical control theory. Transfer functions, block diagram manipulation, and signal flow graphs. Transient and steady state responses; characteristics, and design. Sensitivity analysis and disturbance rejection. System stability. Root locus analysis and design. Frequency response analysis using Bode and polar plots. Nyquist criterion and Nichols chart. Controller design using Bode plots. State-space description. Design of state-feedback controllers and controllers and observers.

ECE 393 INDUSTRIAL PRACTICE III

Practice in industry and comprehensive written report of this practice. For Cooperative Education students only.

ECE 394 INDUSTRIAL PRACTICE IV

For co-operative engineering students only. Must be accept for the co-op program by the co-operative engineering representative. Practice in industry and comprehensive written report of this practice.

ECE 395 INDUSTRIAL PRACTICE V

For co-operative engineering students only. Must be accepted for the co-op program by the co-operative engineering representative. Practice in industry and comprehensive written report of this practice.

ECE 426 ELECTRIC DRIVES

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 275 and ECE 311

Introduction to electric drives and power electronics. Magnetic circuits and transformers. Principles of dc, synchronous, induction, and stepper motors; equivalent circuits and operating characteristics. Applications to drive systems. Laboratory experiments to illustrate principles.

ECE 429 SENIOR ENGINEERING DESIGN I

(Class 1, Lab. 3, Cr. 2) *Experiential Learning*

Prerequisite: COM/ENGL 307 and ECE 275 and ECE 312 and ECE 370, Penultimate semester

For BSEE majors Pre/Co-requisite: ECE 384. For BScmpE majors: Prerequisites: CS 275 and ECE 301 Pre/Co-requisite: ECE 371.

The senior engineering design courses I and II constitute a two semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students of the faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presentation before faculty and students.

ECE 432 ELEMENTS OF POWER SYSTEM ENGINEERING

(Class 3, Cr. 3)

Prerequisite: ECE 426

Fundamental concepts of power systems analysis, transmission line parameters, basic system models, steady-state performance, network calculations, power flow solutions, fault studies, symmetrical components, operating strategies and control.

ECE 439 SENIOR ENGINEERING DESIGN II

(Class 2, Lab. 3, Cr. 3) *Experiential Learning*

Prerequisite: ECE 429

The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and formal oral presentation before faculty and students.

ECE 448 INTRODUCTION TO COMMUNICATION THEORY

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 302 and ECE 301 and ECE 275

Signal analysis, introduction to digital communication and pulse code modulation. Introduction to amplitude modulation and frequency modulation. Introduction to information theory.

ECE 451 INDUSTRIAL AUTOMATION

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 370

Operating principles, design, and application of programmable logic controllers. Data acquisition and data analysis using PCs: A to D and D to A converters, sensors and actuators, process variable measurement, signal conditioning: data acquisition and control software applications.

ECE 454 SOFTWARE ENGINEERING DESIGN II

(Class 3, Cr. 3)

Prerequisite: ENGR 354

Design methods utilized in the development of complex software systems, and their application in concurrent, real-time, and distributed object-oriented software environments.

ECE 459 ADVANCED DIGITAL SYSTEM DESIGN

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 370

Design, simulation, and testing of digital systems using a hardware description language and programmable logic devices Complex programmable logic devices (CPLDs) and field programmable gate arrays (FPGAs) will be studied and utilized. Laboratory will include design, simulation implementation, and testing of designs on available FPGA/CPLD boards

ECE 464 COMPUTER ARCHITECTURE AND ORGANIZATION

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECE 371

Design of computer systems with emphasis on computer architecture. Topics discussed include: Fundamentals of Computer Design, Instruction set principles and Examples, Pipelining, Advanced Pipelining and Instruction-Level Parallelism, Memory-Hierarchy Design, I/O Systems, Buses and Arbitration Techniques, Interconnection Networks, and Multiprocessors.

ECE 468 DESIGN OF COMPUTER SYSTEMS PROGRAMS

(Class 3, Cr. 3)

Prerequisite: ECE 371

The design of systems programs, in particular, operating systems, assemblers, loaders, and compilers. The role of systems programs as the link between computer hardware and software is emphasized. Topics include: problems of assembling and loading microcomputer codes, macroprocessors, memory management, implementation of high level language features and special purpose language compilers. Projects illustrating the applications of the fundamental concepts to the design and construction of working systems programs are required.

ECE 476 DIGITAL SIGNAL PROCESSING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECE 301 and ECE 233

Theory and implementation of real time digital signal processing. Survey or continuous filter design using Butterworth, Chebychev, inverse Chebychev, elliptic, and Bessel approximations; type transformations; review of sampling theory, discrete time signals and systems, and Z-transforms; design of IIR filters using impulse invariance, bilinear transform, and a survey of direct techniques; design of FIR filters using Fourier series and windows, least squares error, and optimal equiripple techniques; properties and applications of discrete and fast Fourier transforms. Overview of spectral estimation techniques. Laboratory includes implementation of lecture topics.

ECE 483 DIGITAL CONTROL SYSTEMS-ANALYSIS AND DESIGN

(Class 3, Cr. 3)

Prerequisite: ECE 382 or ME 485

An introduction to computer-controlled systems from both the state variable and z-transform points of view, along with sampling theory and its effect on digital control design. Design of digital controllers from the state space and frequency domain points of view.

ECE 495 SELECTED TOPICS IN ELECTRICAL ENGINEERING

(Class 1 to 4, Lab. 1 to 4, Cr. 1 to 4)

ECE 496 ELECTRICAL ENGINEERING PROJECTS

Hours and credits to be arranged.

ECE 519 CONTROL THEORY II

(Class 3, Cr. 3)

Prerequisite: ECE 382 or ME 485

The approximation of common non-linearities by describing functions and the analysis of resultant system behavior. Review of matrix analysis. Statespace formulation, representation, solution and design. Introduction to optimization and computational methods.

ECE 532 COMPUTATIONAL METHODS FOR POWER SYSTEM ANALYSIS

(Class 3, Cr. 3)

Prerequisite: ECE 432

System modeling and matrix analysis of three-phase power networks. Applications of numerical methods and computers to the solution of a variety of problems related to the planning, design and operation of electric power systems.

ECE 544 DIGITAL COMMUNICATIONS

(Class 3, Cr. 3)

Prerequisite: ECE 448

Introduction to digital Communication systems and spread spectrum communications. Topics include analog message digitization, signal space representation of digital signals, binary and M-ary signaling methods, detection of binary and M-ary signals, comparison of digital communication systems in terms of signal energy and signal bandwidth requirements. The principal types of spread spectrum systems are analyzed and compared. Application of spread spectrum to multiple access systems and to secure communication systems is discussed.

ECE 547 INTRODUCTION TO COMPUTER COMMUNICATION NETWORKS

(Class 3, Cr. 3)

A qualitative and quantitative study of the issues in design, analysis, and operation of computer communication networks as they evolve toward the integrated networks of the future, employing both packet and circuit switching technology. The course covers packet and circuit switching, the OSI standards architecture and protocols, elementary queuing theory for performance evaluation, random access techniques, local area networks reliability and error recovery, and integrated networks.

ECE 554 ELECTRONIC INSTRUMENTATION AND CONTROL CIRCUITS

(Class 3, Cr. 3)

Prerequisite: ECE 335 and ECE 301

Analysis and design of special amplifiers, pulse circuits, operational circuits, d-c amplifiers, and transducers used in instrumentation, control, and computation.

ECE 589 STATE ESTIMATION & PARAMETER ID OF STOCHASTIC SYSTEMS

(Class 3, Cr. 3)

Introduction to point estimation, least squares, Bayes risk and maximum likelihood. Optimum mean-square recursive estimation for non-dynamic stochastic systems. State estimation for discrete-time and continuous-time dynamic systems. Parameter identification of stochastic approximation, least squares, and random search algorithms.

ECE 595 SELECTED TOPICS IN ELECTRICAL ENGINEERING

(Class 0 to 3, Cr. 1 to 3)

Formal classroom or individualized instruction on topics of current interest.

ECE 602 LUMPED SYSTEM THEORY

(Class 3, Cr. 3)

Prerequisite: ECE 301

An investigation of the basic theory and techniques of modern system theory, emphasizing linear state model formulations of continuous and discrete time systems in the time domain and frequency domain. Coverage includes notions of linearity, time invariance, discrete and continuous time state models, canonical forms, associated transfer functions and impulse response models, the state transition matrix, the Jordan form, controllability, observability, and stability.

ECE 604 ELECTROMAGNETIC FIELD THEORY

(Class 3, Cr. 3)

Prerequisite: ECE 311

Review of general concepts (Maxwell's equations, materials interaction, boundary conditions, energy flow); statics (LaPlace's equation, Poisson's equation); distributed parameter systems (classification of solutions, transmission lines, and waveguides); radiation and antennas (arrays, reciprocity, Huygen's principle); a selected special topic (e.g. magnetostatics, waves in anisotropic media and optical fibers).

ECE 606 SOLID-STATE DEVICES

(Class 3, Cr. 3)

A relatively-broad moderate-depth coverage of semiconductor devices and related topics. The first portion of the course presents and examines semiconductor fundamentals required in the operational analysis of solid state devices. A detailed examination of the PN junction diode and PN junction devices follows. The final portion of the course treats heterojunction surface devices including the Schottky diode, the MOS capacitor and the MOSFET.

ECE 680 MODERN AUTOMATIC CONTROL THEORY

(Class 3, Cr. 3)

Prerequisite: ECE 602

Theoretical methods in optimal control theory. Topics include the calculus of variations and the Pontryagin minimum energy problems. Geometric methods will be applied to the solution of minimum time problems. Computational methods, singular problems, observer theory, and sufficient conditions for existence of solutions are also discussed. observer theory, and sufficient conditions for existence of solutions are also discussed.

Electrical and Computer Engineering Technology

ECET 100 INTRODUCTION TO ELECTRICAL & COMPUTER ENGINEERING TECHNOLOGY

(Lab. 3, Cr. 1)

An introduction to the different fields of Electrical and Computer Engineering Technology. Hands-on laboratory techniques along with the exposure to lab procedures and safety will be introduced. Students would be engaged in Internet and Library research and learn about University wide resources and how to be utilize them.

ECET 102 ELECTRICAL CIRCUITS I

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite or co-requisite: MA 147 or consent of instructor

A study of DC electrical circuits, Ohm's Law, Kirchoff's Laws, series and parallel circuits, power, magnetism, ammeters, voltmeters, ohmmeters, inductance, capacitance, and an introduction to alternating voltages, currents and reactance.

ECET 109 DIGITAL FUNDAMENTALS

(Class 2, Lab. 3, Cr. 3)

A study of binary codes, Boolean algebra, logic gates and flip-flops, small scale (SSI), medium scale (MSI) integrated circuits, Combinational logic design techniques and sequential logic components.

ECET 110 COMPUTER SYSTEM ARCHITECTURE

(Class 2, Lab. 2, Cr. 3)

Introduction to PC based system architecture. Identification, installation and upgrading of microcomputer modules, Windows Operating System. Ability to configure IRQ's, I/O addresses and set switches and jumpers. Distinguish between the popular CPUs. Identify the categories of Memory. Identify the popular types of motherboards, their components and their architecture. Differentiate between the different buses and their interfaces. Basic concepts and terminology of Networking. Diagnosing and troubleshooting common module problems and system malfunctions.

ECET 152 ELECTRICAL CIRCUITS II

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 102 and prerequisite or co-requisite MA 148 or consent of instructor

AC circuits, including j-operator, phasors, reactance, impedance, and power are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied in the study of passive filters, resonant circuits, single-phase and three-phase circuits, and elementary magnetic circuits.

ECET 154 ANALOG ELECTRONICS I

(Class 3, Lab. 3, Cr. 4)

Pre/Corequisite: ECET 102 and ECET 152 or consent of instructor

A study of the characteristics and applications of transistors integrated circuits, and other solid-state devices. Includes rectifier circuits, waveform interpretation, AC and DC load lines, biasing techniques, equivalent circuits, single and multistage class A small-signal amplifiers, and h parameters.

ECET 159 DIGITAL APPLICATIONS

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 109 or consent of instructor

This course continues the study of combinational and sequential digital applications using programmable logic devices and standard logic devices. The input and output characteristics of the various common logic families, the appropriate signal conditioning techniques for on/off power interfacing, digital and analog signal interfacing techniques and memory devices and systems are discussed.

ECET 209 INTRODUCTION TO MICROCONTROLLERS

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 159 and ECET 110 and CIS 166 or consent of instructor

An introduction to microprocessor hardware and software focusing on embedded control applications. Interconnection of components, peripheral devices, bus timing relationships, structured C language programming (with embedded assembly language), debugging, input/output techniques, and use of PC-based software development tools are studied. Prerequisites: EET 159, EET 110 and CIS 166

ECET 210 STRUCTURED C++ PROGRAMMING FOR ELECTROMECHANICAL SYSTEMS

(Class 2, Lab. 2, Cr. 3 or Class 2, Lab. 3, Cr. 3)

Prerequisite: EET 110 or ECET 110 or consent of instructor

Use of C++ in structured programming and Top Down Design techniques. Problem solving in technology applications is emphasized. The laboratory exercises will emphasize the interfacing of electromechanical systems with software and generation of embedded coding.

ECET 212 ELECTRICAL POWER AND MACHINERY

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 152 or consent of instructor

A study of power transformers, single and polyphase circuits. The study of DC machines, AC single and polyphase synchronous and induction machines, and an introduction to power electronics.

ECET 214 ELECTRICITY FUNDAMENTALS

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

This course provides an introduction to the basics of electricity and electronics. The areas of study include both theory and application of DC and AC electric motors, as well as linear and digital devices.

ECET 217 INTRODUCTION TO PROCESS CONTROL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: MA 148 and ECET 109 Co-requisite: ECET 154 or consent of instructor

This course introduces fundamental concepts of process control systems open loop and closed loop controls. Input output characteristics of process elements dead time and span. Switching analysis of process hardware modeling of static and dynamic processes. Diode transistors and SCR switching characteristics. Measurements of electronic signals. Solid state switching devices. Loading effects and power interfaces. Noise and signal conditioning and grounding. Studies of cables and their characteristics. Various industrial instruments and interface buses standards and practices.

ECET 262 PROGRAMMABLE LOGIC CONTROLLERS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ECET 159 or consent of instructor

Introduction to programmable logic controllers (PLCs) to perform process control and motor control functions Topics include PLC architecture, working principles, programming techniques, data manipulation, various input/output modules and their interface for actuation signal control.

ECET 265 COMPUTER NETWORKS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECET 110 and ECET 109 or consent of instructor

This course is an introduction to Data communications and Networking hardware. The emphasis is on network hardware and topologies, physical interface standards, construction of transmission media, Local and Wide Area Network protocols as they relate to network hardware, hands-on Local Area Networks installation and troubleshooting.

ECET 291 INDUSTRIAL PRACTICE I

Practice in industry with written reports of this practice by the co-op student.

ECET 292 INDUSTRIAL PRACTICE II

Practice in industry with written reports of this practice by the co-op student.

ECET 296 ELECTRONIC SYSTEM FABRICATION

(Class 1, Lab. 3, Cr. 2)

Prerequisite: ECET 159 and ECET 154 or consent of instructor

The course includes electronics schematic, printed circuit board design and fabrication using Electronic Design Automation (EDA) tools, Designing electronic (Capitulation) circuit schematic, schematic annotation Netlist file generation, electronic packaging selection printed circuit board (PCB) artwork design using Autorouter and manual router software tools. Populate the printed circuit board with electronic components, solder using hand tools and test/debug the electronics hardware into an operational system using bench-top instruments. Course teaches prototyping electronic projects.

ECET 299 ELECTRICAL ENGINEERING TECHNOLOGY

(Class 1 to 6, Cr. 1 to 6)

Hours and subject matter to be arranged by staff. Course may be repeated for credit up to six hours.

ECET 303 COMMUNICATIONS I

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 154 or consent of instructor

A study of AM and FM modulation and detection, receivers, transmitters, networks, filters, antennas, and transmission lines through the VHF frequency spectrum.

ECET 310 BIOMEDICAL INSTRUMENTATION I

(Class 3, Cr. 3)

Prerequisite: ECET 154 or consent of instructor

An introduction to physiological variants, the concept of measurements and problems encountered in measurements from a living human body. Detail study of transducer principles and circuit techniques in measurement in circulatory, digestive, muscular and nervous systems. System approach to intensive care monitoring and data acquisition. Evaluation of biomedical instruments to meet performance specifications and electrical safety.

ECET 312 POWER ELECTRONICS

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 154 or consent of instructor

Introduction to the characteristics of power semi-conductor devices, diode rectifiers, thyristors, commutation techniques, controlled rectifiers, ac voltage controllers, choppers, inverters, and motor drives.

ECET 315 DIGITAL DESIGN AND IMPLEMENTATION USING PROGRAMMABLE LOGIC

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 159 and ECET 204 and ECET 250 or consent of instructor

Devices (PLDs) Review of digital logic (sequential and combinational) design and implementation using conventional techniques. Digital system design and implementation as currently practiced in industry will be covered using state-of-the-art computer software. High level notations using PLD technology will be introduced for the synthesis of digital hardware.

ECET 330 INDUSTRIAL PROGRAMMING & NETWORKING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ECET 262 or consent of instructor

Networking industrial devices including servers, computers, smart sensors, controllers, and input/output devices. Programming applications for transferring data between industrial applications.

ECET 331 GENERATION AND TRANSMISSION OF ELECTRICAL POWER

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 212 or consent of instructor

A study of the generations and transmission of electrical energy. Includes techniques used by electric utilities for the protection of generating equipment and transmission line, an introduction to the economic considerations of power plant operation, and three-winding transformers and methods of solving unbalanced three-phase systems.

ECET 362 PROCESS CONTROL INSTRUMENTATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ECET 154 and ECET 159 or ECET 214 or consent of instructor

Introduction to process control principles and practices. Study of analog and digital signal conditioning; thermal, mechanical and optical transducers; electromechanical, pneumatic and hydraulic control devices; and the application of computer-aided tools for process control instrumentation.

ECET 367 INTERNETWORKING AND TCP/IP

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECET 265 or consent of instructor

This course is a continuation of ECET 265. The emphasis is on integrating the TCP/IP protocol suite on networking and internetworking devices such as repeaters, bridges, routers, gateways, and switches. Other topics from emerging networking technologies will be considered, as applied to high speed networks.

ECET 384 ADVANCED MATHEMATICAL METHODS IN EET

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 152 and MA 219 or consent of instructor

An advanced course in mathematical analysis applied to networks that stresses network theorems and solutions in time and frequency domains. Emphasis is placed on the use of software tools.

ECET 392 DIGITAL SIGNAL PROCESSING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECET 384 and ECET 209 or consent of instructor

Introduction to the fundamentals of Digital Signal Processing: discrete-time principles, sampling theorem, discrete Fourier transform, fast Fourier transforms, time and frequency domain considerations, Z-transform, solution of difference equations and design of digital filters.

ECET 393 INDUSTRIAL PRACTICE III

Practice in industry with written reports of this practice by the co-op student.

ECET 394 INDUSTRIAL PRACTICE IV

Practice in industry with written reports of this practice by the co-op student.

ECET 397 ELECTRONIC PROJECT ENGINEERING

(Class 2, Lab. 3, Cr. 3) Experiential Learning

Prerequisite: ECET 456 or consent of instructor

Introduction to electronic project engineering principles and techniques. Topics include technical feasibility studies, project specification, scheduling, testing, validation and cost estimating. Focus is on teamwork. These principles and techniques are emphasized through the design and execution of an electronic project.

ECET 410 PHYSICS OF RADIOLOGIC IMAGING

(Class 3, Cr. 3)

Diagnostic imaging is among the rapidly advancing fields of non-invasive clinical medicine. This course will cover the physics principles behind imaging techniques. Quality assurance of diagnostic x-ray equipment and radiation safety also will be discussed. This course could be used as a Science/Math elective.

ECET 412 POWER ELECTRONICS DESIGN AND APPLICATIONS

(Class 3, Lab. 3, Cr. 3)

Prerequisite: ECET 312 or consent of instructor

Introduction to the application of power electronics in ac and dc motor drives, dc switching power supplies, solid-state relays, inverters, uninterruptible and standby power supplies and utility interfaces. The course covers the topologies and design of power trains, drivers for the switching devices, protection, and the strategies for control and power factor improvement.

ECET 413 DIGITAL AND DATA COMMUNICATIONS

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 303 or ECET 209 or consent of instructor

A study of modern digital communication systems. Topics include modulation techniques for digital transmission of data, error detection and correction, data compression techniques, Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA), etc. Topics in digital communication related to wired and wireless transmission media, along with fiber optics will be discussed. Topics in high speed switched networks will be introduced.

ECET 423 CURRENT TRENDS IN TELECOMMUNICATION TECHNOLOGY

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 413 or consent of instructor

This course is designed to update the student on the latest advances in communication. This course will be continuously updated to keep the student abreast of new developments in the telecommunication field.

ECET 445 NEW TECHNOLOGY IN COMPUTER SYSTEMS

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 209 or CIS 166 or consent of instructor

The impact of new technologies on computer hardware and software is studied.

ECET 455 C++ OBJECT ORIENTED PROGRAMMING

(Class 3, Lab. 2, Cr. 4 or Class 3, Lab. 3, Cr. 4)

Prerequisite: CIS 166 or consent of instructor

Designing Windows Applications using Object Oriented Programming Methodology utilizing C++ language constructs. The course will cover: the basics of Windows Programming, developing Windows applications using Object Windows, and Windows Functions and Messages with emphasis on Computer Communications and Networking.

ECET 456 COMPUTER HARDWARE DESIGN

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 209 or consent of instructor

An extension of ECET 209. Course topics include an in-depth investigation of computer systems hardware design with available processors and peripheral devices.

ECET 462 APPLICATION OF COMPUTERS IN PROCESS CONTROL

(Class 3, Lab. 3, Cr. 4)

Prerequisite: ECET 362 or consent of instructor

Application of computers to control industrial processes. Study of continuous- and discrete-time control algorithms; digital signal processing; and system control concepts applied to process control.

ECET 465 ADVANCED TOPICS IN COMPUTER NETWORKS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ECET 367 or consent of instructor

This course is a continuation of ECET 367. Topics include emerging technologies in computer networks and related hardware, modeling, simulation, and analysis of existing LAN and WAN topologies. The course emphasizes hardware software integration with respect to computer networks protocols will be discussed.

ECET 490 SENIOR DESIGN PROJECT, PHASE I

(Class 1, Cr. 1 or Class 1, Lab. 2, Cr. 2) *Experiential Learning*

Prerequisite: ECET 397 or consent of instructor

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agency, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. PHASE I includes, but is not limited to, faculty acceptance of project proposal, defining and limiting project objectives, initial research and source contacts, procurement of materials, and periodic progress reports.

ECET 491 SENIOR DESIGN PROJECT, PHASE II

(Lab. 6, Cr. 2) *Experiential Learning*

Prerequisite: ECET 490 or consent of instructor

PHASE II includes, but is not limited to, continued research and finalized design, oral presentation to faculty and other interested parties, and a written technical report.

ECET 499 ELECTRICAL ENGINEERING TECHNOLOGY

(Class 0 to 9, Lab. 0 to 19, Cr. 1 to 9)

Hours and subject matter to be arranged by staff. Course may be repeated for credit up to nine hours.

Economics

ECON 210 PRINCIPLES OF ECONOMICS

(Class 3, Cr. 3) *TRANSFER IN*

Study of the basic economic institutions and the role they play in defining and achieving the nation's economic goals. Emphasis will be placed on the interdependent nature of the economy and the effects of economic decisions on the individual and society.

ECON 211 CONTEMPORARY ECONOMIC PROBLEMS

(Class 3, Cr. 3)

Prerequisite: ECON 210

Economic theory applied to current issues and an analysis of the economic aspects of public policy.

ECON 240 PERSONAL FINANCIAL MANAGEMENT

(Class 3, Cr. 3)

Lectures and case analysis of managing one's personal finances; including budgeting, credit analysis, insurance, taxation, housing, estate planning, private and business investment. Not available for credit in Management concentrations.

ECON 251 MICROECONOMICS

(Class 3, Cr. 3) *TRANSFER IN*

Prerequisite: MA 153

Price theory and resource allocation. Emphasis is on developing a detailed understanding of the principles of microeconomics and analysis and their application to understanding price and market behavior.

ECON 252 MACROECONOMICS

(Class 3, Cr. 3) *TRANSFER IN*

Prerequisite: ECON 251 and MA 225

Analysis of the forces affecting national income, employment, interest rates, and the price level. Emphasis is placed upon the role of government fiscal and monetary policy in achieving full employment and stable prices.

ECON 311 ENVIRONMENTAL ECONOMICS

(Class 3, Cr. 3)

Prerequisite: ECON 210 or ECON 251

This course provides an overview of environmental issues and legislation in the United States. Emphasis is placed on understanding and analyzing environmental problems applying basic principles of economics. This course explores the causes of environmental problems and evaluates the various policy instruments that are often used to address them at the international, national, state and local levels.

ECON 322 PUBLIC FINANCE

(Class 3, Cr. 3)

Prerequisite: ECON 210 or ECON 251

The examination and analysis of public finance practices and problems in the federal fiscal system. Government activities that involve spending and taxation are analyzed applying basic principles of economics. Topics include public education, social security, healthcare, environment and tax systems. State and local government issues are also addressed.

ECON 351 INTERMEDIATE MICROECONOMICS

(Class 3, Cr. 3)

Prerequisite: ECON 252

Theoretical treatment of consumer and producer behavior. Analysis of demand, production, cost, product and factor markets leading to general equilibrium and welfare implications. Emphasis is upon the development of skills necessary to analyze the behavior of individual economic agents. Not available for credit in Management concentrations.

ECON 352 INTERMEDIATE MACROECONOMICS

(Class 3, Cr. 3)

Prerequisite: ECON 252

Macroeconomic behavior. The determinants of consumption, investment, and the aggregate demand for assets. The joint determination of income, the price level, and the rate of interest. The role of government and elements of economic growth.

ECON 353 BUSINESS CYCLES

(Class 3, Cr. 3)

Prerequisite: ECON 252

This course provides an analysis of business fluctuation and the impact of government policy instruments. Special emphasis is placed on how macroeconomic factors influence managerial and personal decision making.

ECON 360 ECONOMETRICS

(Class 3, Cr. 3)

Prerequisite: MGMT 225

This course provides an analysis of regression and problems encountered in utilizing regression analysis. Emphasis is placed on diagnosing common empirical problems, selecting the most appropriate approach and interpreting the results. This course will utilize examples from the fields of finance and marketing as well as economics.

ECON 375 UNITED STATES ECONOMIC HISTORY

(Class 3, Cr. 3)

Prerequisite: ECON 251

A study of the growth of the American economy from colonial times to the late nineteenth century. Emphasis is placed on application of the tools of economic analysis to historical questions concerning the sources and rate of growth, the relationships between growth and structural and institutional change, and the impact of industrialization on the quality of life in the American economy.

ECON 380 MONEY AND BANKING

(Class 3, Cr. 3)

Prerequisite: ECON 252

A course examining the role of financial intermediaries and central banks in market-oriented, open economies. Emphasis is placed upon the decision making of the United States' Federal Reserve System and its impact on the domestic and world economies.

ECON 415 CONTEMPORARY ECONOMIC PROBLEMS AND POLICIES

(Class 3, Cr. 3)

Prerequisite: ECON 251

A study of economic policies designed to improve the attainment of economic goals. Emphasis is placed on the examination of the relationship between private decision making and public policy in such areas as health care, transportation, environmental protection, and income distribution.

ECON 419 MANAGERIAL ECONOMICS

(Class 3, Cr. 3)

Prerequisite: ECON 251 and MGMT 225

A comprehensive treatment of economic theory and analysis applied to business decisions. Both qualitative techniques are applied to managerial decision making situations. Emphasis is placed on applications of economic concepts and processes to practical business situations.

ECON 434 INTERNATIONAL TRADE

(Class 3, Cr. 3)

Prerequisite: ECON 252

The course is a study of the reasons, as well as the benefits and costs of international trade. The effects of trade policy (e.g., tariffs, trade agreements) are examined. Balance of payments, foreign exchange, and international macroeconomics linkages are also examined.

ECON 461 INDUSTRIAL ORGANIZATION

(Class 3, Cr. 3)

Prerequisite: ECON 252

This course links the behavior observed in markets with the theory of price. Emphasis is placed on policy issues and the application of microeconomic theory. Topics include imperfect information, product differentiation, transaction costs, ownership integration, research and development, and innovation. Special contractual relationships such as tying arrangements, resale price maintenance, franchising, exclusive dealerships and joint ventures are also considered.

ECON 462 THE ECONOMICS OF HEALTH CARE

(Class 3, Cr. 3)

The course analyzes economic forces that shape the health care industry. Course content includes the market structure of the health care industry, public and private health care delivery systems, reimbursement methods for services, and the labor market for health care workers.

ECON 465 ECONOMIC FORECASTING TECHNIQUES

(Class 3, Cr. 3)

Prerequisite: MGMT 225 and ECON 251

A course examining the statistical techniques of forecasting. Emphasis is placed on economic time series data and computer based methods of estimation and testing.

ECON 467 ECONOMICS AND THE LAW

(Class 3, Cr. 3)

Prerequisite: ECON 215

This course analyzes the conditions under which laws promote or hinder the efficient use of resources in a society. The course reviews the relevant microeconomic theory underlying social decision making. It next develops the basis for property rights analysis and contract law. Discussion also focuses on risk allocation and liability issues associated with tort law.

ECON 490 PROBLEMS IN ECONOMICS

(Class 0 to 4, Cr. 1 to 4)

Supervised reading and reports in various subjects. Open only to a limited number of seniors with superior records in previous courses. Arrange with instructor before enrolling.

ECON 513 ECONOMIC THEORY

(Class 3, Cr. 3 or Class 4, Cr. 4)

Theoretical analysis of a market economy with an emphasis on decision processes of managers. Consideration is given to micro aspects of price determination, utilization of resources and market organizations, and to aggregative concepts of national income and employment.

ECON 530 MONEY AND FINANCE

(Class 3, Cr. 3)

Prerequisite: ECON 252

Analysis of monetary policy and the regulation of depository institutions. The macroeconomic implications (inflation and unemployment) of alternative monetary policy strategies, as well as the details of Federal Reserve System operating procedures will be studied. Recent issues in the regulation of depository institutions will be examined, including the provision of deposit insurance, the regulation of deposit interest rates, interstate banking restrictions, and regulatory policy towards insolvent banks. The international monetary system also will be examined as it relates to monetary policy and the regulation of depository institutions.

ECON 534 INTERNATIONAL TRADE THEORY

(Class 3, Cr. 3)

Prerequisite: ECON 252

Problems of the international economy addressed in the light of economic theory. Emphasis is on real, as opposed to monetary topics. Topics may include trade barriers, multinational corporations, technology transfer, the European economic community, and economic constraints on the sovereignty of nation-states.

Education, Curriculum, and Instruction

EDCI 205 EXPLORING TEACHING

(Class 3, Cr. 3)

Students will become familiar with the work of teachers and begin to develop their educational philosophies through examining what it means to teach and to learn and the nature and purpose of schools. Students will critically evaluate teaching as their chosen profession.

EDCI 206 INTRODUCTION TO TEACHING

(Class 3, Cr. 3)

Students will analyze the work of professional educators and begin to develop their own educational philosophies through examining the nature of teaching and learning in American schools. Students will critically evaluate the profession and practice teaching, with a focus on current trends in K-12 education. Students will become familiar with teacher preparation requirements at the national, state and college levels.

EDCI 212 INTRODUCTION TO EARLY EDUCATION

(Class 3, Cr. 3)

Prerequisite: EDPS 220 and EDPS 285 and EDCI 260

Reviews history and philosophy of kindergartens and other programs for young children. Classroom organization and management alternatives are analyzed. Emphasis is placed on meeting individual needs of young children through group and individual activities.

EDCI 260 INTRODUCTION TO COMPUTERS IN EDUCATION

(Class 3, Cr. 3)

Prerequisite: EDCI 205 or EDCI 206 and CIS 204

An introductory course covering instructional uses of microcomputers; the selection, evaluation, and management of hardware and software; and curricular applications for microcomputers.

EDCI 304 LITERACY AND MIDDLE CHILDHOOD

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 321 and EDPS 370

Explores aspects of child development and its relevance to literacy, including early and middle childhood developmental influences. This course examines methods and materials appropriate for grades 3-6. Topics will include the instruction and assessment of students.

EDCI 307 CORRECTIVE READING FOR THE CLASSROOM TEACHER

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 304 or EDCI 309

Classroom procedures for the identification of reading difficulties; selection and application of appropriate methods and materials to provide corrective treatment. Emphasizes approaches to discovering and diagnosing reading; techniques for selecting materials in planning a remedial program, methods for teaching specific skills and techniques for evaluating progress. Appropriate laboratory and field experiences are provided.

EDCI 308 PRACTICUM IN READING FOR THE CLASSROOM TEACHER

(Class 1, Lab. 4, Cr. 3)

Prerequisite: EDCI 307

The course is designed for prospective teachers in elementary or secondary schools who desire advanced supervised practice in teaching reading to pupils experiencing reading difficulty. The practicum will provide extended diagnostic teaching experiences in a wide range of reading settings. The seminar will evaluate diagnostic and tutoring strategies, methods, material, and achievement.

EDCI 309 READING IN MIDDLE AND SECONDARY SCHOOLS

(Class 3, Cr. 3)

Prerequisite: EDCI 355 and EDPS 260

A course for prospective secondary teachers. Emphasis place on techniques and

strategies of teaching reading in secondary classrooms and incorporation of reading skills in the various content areas. Attention is given to teaching reading skills and providing for students of varying reading abilities. Provision for simulated activities, field experiences and observations.

EDCI 311 MEDIA FOR CHILDREN

(Class 3, Cr. 3)

Prerequisite: EDPS 220 and EDPS 285 and EDCI 260

Books, films, filmstrips, records, magazines and other resources provided in elementary media centers are studied and evaluated to meet the personal and educational needs of pupils in elementary schools. Emphasis is on wide reading of children's books and viewing of many media and their utilization with children.

EDCI 314 TEACHING THE LANGUAGE ARTS IN THE ELEMENTARY SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 306

Materials and methods of teaching oral and written language, listening, spelling, and handwriting in the elementary school.

EDCI 315 TEACHING MATHEMATICS IN THE ELEMENTARY SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 304 and EDCI 316 and MA 137 and MA 138 and MA 139

Materials and methods used in teaching mathematics at various grade levels in the elementary school.

EDCI 316 TEACHING SOCIAL STUDIES IN THE ELEMENTARY SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 321 and EDPS 270

Curriculum principles and objectives, organization of materials, instruction techniques, and evaluation procedures.

EDCI 317 TEACHING OF SCIENCE IN THE ELEMENTARY SCHOOL CURRICULUM

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 304 and EDCI 316 and SCI 115

Provides experiences in developing skills for teaching science as well as the understanding of appropriate subject matter: includes evaluation techniques and procedures.

EDCI 320 PRINCIPLES OF PRACTICE IN ELEMENTARY AND SECONDARY SCHOOLS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDPS 285 and EDCI 260 or EDCI 355

This course provides the pre-service teacher with classroom management principles and strategies for the elementary or secondary school classroom. This course will also highlight the teacher's role in the community and the community's role in the educational process. Because the nature of the classroom management differs substantially across developmental levels, separate course sections will be offered for elementary and middle/secondary students.

EDCI 321 LITERACY AND THE YOUNG CHILD

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 260 and EDCI 355

Explores aspects of child development and its relevance to literacy, including early development influences and preschool learning. This course examines methods and materials appropriate for grades K-2. Topics will include the instruction and assessment of students.

EDCI 341 ENGLISH TEACHING IN SENIOR HIGH, JUNIOR HIGH & MIDDLE SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDPS 260 and EDCI 355

Acquaints students with developmentally appropriate content methods and materials for teaching high school, junior high, and middle school English. Includes an overview of the role of the high school, junior high, and middle school English teacher today, the high school, junior high and middle school philosophy, the use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction.

EDCI 342 STRATEGIES OF FOREIGN LANGUAGE INSTRUCTION IN SENIOR HIGH, JUNIOR HIGH, AND MIDDLE SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 355 and EDPS 260

Acquaints students with developmentally appropriate content methods and materials for teaching senior high school, junior high and middle school foreign

language and culture. Comparative studies of various teaching methods, analysis of current foreign language textbooks and accompanying materials, use of technology, and planning of instructional units are included. Field experiences are integrated with classroom instruction.

EDCI 344 STRATEGIES OF MATHEMATICS INSTRUCTION IN SENIOR HIGH, JUNIOR HIGH, AND MIDDLE SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDPS 260 and EDCI 355

Acquaints students with developmentally appropriate content, materials and methods for teaching mathematics in the high school, junior high and middle school. Includes an overview of the role of the high school, junior high and middle school Math teacher today, the high school, junior high and middle school philosophy, use of technology, and planning of instructional units. Field experience are integrated with classroom instruction.

EDCI 346 STRATEGIES OF SCIENCE INSTRUCTION IN SENIOR HIGH, JUNIOR HIGH, AND MIDDLE SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDPS 260 and EDCI 355

Acquaints students with developmentally appropriate content materials and methods in teaching science in the high school, junior high and middle school (includes life and physical sciences). Includes an overview of the role of the high school, junior high and middle school science teacher today, the high school, junior high and middle school philosophy, use of technology and planning of instructional units. Field experiences are integrated with classroom instruction.

EDCI 347 STRATEGIES OF SOCIAL STUDIES INSTRUCTION IN SENIOR HIGH, JUNIOR HIGH, AND MIDDLE SCHOOL

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDPS 260 and EDCI 355

Acquaints students with developmentally appropriate content materials, methods and literature relating to the social studies field generally and the intense teaching areas particularly. Includes an overview of the role of the high school, junior high and middle school social studies teachers today, the high school, junior high and middle school philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction.

EDCI 355 TEACHING AND LEARNING K-12 CLASSROOM

(Class 2, Lab. 3, Cr. 3) *Experiential Learning*

Prerequisite: EDPS 285 and EDCI 260 and EDPS 220

Acquaints students with general methods of promoting the learning process in the K-12 school. Topics studied will include long-term and short-term instructional planning and evaluation; classroom organization including management, motivation of students, the use of media to promote instructional objectives; and individual and group learning procedures. Students will also study how curriculum goals are adapted and implemented in the classroom.

EDCI 366 USE OF ASSESSMENT IN THE K-12 CLASSROOM

(Class 3, Cr. 3)

Prerequisite: EDCI 355 and EDPS 260

This course will acquaint students with standardized tests currently used in K-12 settings such as ISTEP and interpretation of test data to inform planning and instruction. In addition this course will address use of standardized tests to identify and develop education programming for students with special needs.

EDCI 489 SUPERVISED STUDENT TEACHING

(Class 6 to 9, Cr. 6 to 9)

Prerequisite: EDCI 315 and EDCI 317 *Co-requisite: EDCI 497*

Eight weeks of full time student teaching in an academic subject per grade under the supervision of the public school teachers in charge of the classes and supervisors from university.

EDCI 490 INDIVIDUAL RESEARCH AND TEACHING EXPERIENCE

(Cr. 1 to 8)

Opportunity for undergraduate students to investigate particular problems in the field of education under supervision.

EDCI 491 TOPICS AND ISSUES IN EDUCATION

(Class 1, Cr. 1)

Provides the student with the opportunity to strengthen the preparation program through the study of selected educational topics and issues based on individual needs and interests. One topic is dealt with in each enrollment.

EDCI 497 SUPERVISED TEACHING

(Class 6 to 12, Lab. 6 to 12, Cr. 6 to 12) *Experiential Learning*

Prerequisite: EDPS 370 Co-requisite: EDCI 489

Admittance to Teacher Education, completion of education methods courses required for the major area. Teaching full-time in a school classroom under the supervision of the teacher in charge of the class and a university supervisor.

EDCI 498 SUPERVISED TEACHING

(Class 8, Cr. 8 or Class 9, Cr. 9)

Teaching full-time in a classroom under the supervision of the teacher in charge of the class and a University supervisor.

EDCI 499 TEACHING FULL TIME IN AN ENDORSEMENT AREA IN A SCHOOL

(Class 3 to 9, Cr. 3 to 9)

Full time student teaching in a classroom under the supervision of the teacher in charge of the class and a University supervisor. Prerequisites: ED 249, ED 285, Admittance to Teacher Education, Completion of Education courses required for the Endorsement Area.

EDCI 500 FOUNDATION OF LITERACY

(Class 3, Cr. 3)

Survey course in the acquisition of and instruction in reading, writing and other aspect of language.

EDCI 501 PROBLEMS IN LITERACY ACQUISITION: EVALUATION AND INSTRUCTION

(Class 2, Lab. 3, Cr. 3)

Prerequisite: EDCI 500

Examines informal and standardized instruments useful for evaluating students who experience difficulties acquiring reading, writing, and other aspects of language. Discusses corrective/remedial instructional strategies appropriate for the classroom and clinic. Supervised practicum.

EDCI 502 READING IN MIDDLE AND SECONDARY SCHOOLS

(Class 3, Cr. 3)

A course designed for teachers and prospective teachers in subject matter areas of the junior and senior high school. May be taken as part of the sequence leading to Reading Specialist of or for the Junior High-Middle School endorsement program. Surveys of techniques and objectives of reading within content areas. Teaching experience helpful but not required.

EDCI 504 CHILDREN'S LITERATURE

(Class 3, Cr. 3)

A survey of modern and traditional literature for children including authors and illustrators; guidance in uses of children's literature in relation to developmental interests, needs and skills of children; emphasis is on evaluating materials, reviewing sources and developing discrimination in choosing children's literature. This course is designed for beginning graduate students, who plan to be school library/media specialists, but is available for classroom teachers.

EDCI 511 TEACHING MATHEMATICS IN THE ELEMENTARY SCHOOL

(Class 3, Cr. 3)

Historical and current curriculum developments in mathematics education with implications for classroom practice; analysis of instructional strategies; cognitive development; use of research results.

EDCI 513 FOUNDATIONS OF EDUCATIONAL TECHNOLOGY

(Class 3, Cr. 3)

Provides a historical overview of the field and delineates the foundational knowledge, skill and attributes needed by professionals in the field of educational technology and instructional design. Students explore the field by engaging in collaborative projects, along with thinking and writing about various aspects of educational technology and the underlying instructional design theories.

EDCI 517 SURVEY OF SCIENCE EDUCATION

(Class 3, Cr. 3)

Introduction to current issues and research in science education, broadly organized under themes of learning, teaching and science curriculum.

EDCI 560 EDUCATIONAL TECHNOLOGY FOR TEACHING AND LEARNING

(Class 3, Cr. 3)

Applications of microcomputers in educational and training settings. Course stresses appraisal, utilization, and evaluation of microcomputer software and hardware. Implementation and management of computers in instructional environments. Teaching of basic computer literacy concepts to learners of all ages.

EDCI 566 EDUCATIONAL APPLICATIONS OF HYPERMEDIA

(Class 3, Cr. 3)

Examines educational applications of hypermedia tools. The class will utilize hypercard and its programming language hypermedia instructional materials. Incorporation of digitized media (sound, photographs, and motion clips) in hypermedia will be explored.

EDCI 570 DELIVERY SYSTEMS FOR EDUCATION AND TRAINING

(Class 1 to 3, Cr. 1 to 3)

Evaluation, selection, and utilization of instructional media and techniques used in the instructional program of the modern school with added emphasis on the design and development of multi-media presentation.

EDCI 571 PRODUCTION OF INSTRUCTIONAL MATERIALS

(Class 1, Lab. 4, Cr. 3)

Design and preparation of a variety of instructional materials for use by instructional materials specialists, teachers, librarians, and A-V coordinators in educational situations. Laboratory practice is provided in production of these materials.

EDCI 572 INTRODUCTION TO INSTRUCTIONAL DEVELOPMENT AND COMMUNICATION

(Class 3, Cr. 3)

An introduction to the principles of designing instructional materials and to instructional communication theory and techniques. Topics include objectives, student characteristics, media selection, communication variables, message design, and systematic evaluation.

EDCI 573 INSTRUCTIONAL DEVELOPMENT PRACTICUM

(Cr. 2 or Class 3, Lab. 99, Cr. 3)

Supervised field experiences in school media centers and/or in programs involving instructional development activities.

EDCI 575 FOUNDATIONS OF DISTANCE LEARNING

(Class 3, Cr. 3)

Prerequisite: EDCI 572

An introduction to the field of distance learning/ education. Examination of basic concepts and principles of distance learning, the theoretical underpinnings of the field, research and application literature, and distance education delivery technologies. A systematic approach to the design, development, delivery and evaluation of instruction for learners at a distance is emphasized. Special attention is given to Web and two-way video delivery technologies.

EDCI 578 REFERENCE RESOURCES

(Class 3, Cr. 3)

A study of reference services in school media centers including the most commonly used reference sources in library and audio-visual materials. Bibliographical form is emphasized.

EDCI 579 AUDIO-VISUAL SERVICES

(Class 3, Cr. 3)

Current trends, functions, and processes of media services in educational situations with emphasis on non-print media equipment.

EDCI 580 FOUNDATIONS OF CURRICULUM DEVELOPMENT

(Class 3, Cr. 3)

Introduction to major historical and philosophical sources of curriculum ideas. Significant forces influencing curriculum decision-making. Different theoretical approaches to the construction and analysis of curriculum.

EDCI 581 CURRICULUM FOR EMERGING ADOLESCENTS

(Class 3, Cr. 3)

Middle-school curriculum concepts, characteristics of emerging adolescent youth, and implications for designing and implementing curricula concurrent with these characteristics and needs.

EDCI 582 CATALOG CLASSIFICATION

(Class 3, Lab. 2, Cr. 3)

Principles of cataloging and classification of educational media and organization of these resources, with laboratory practice in cataloging books and audio-visual materials and in ordering and using printed cards.

EDCI 584 SECONDARY SCHOOL CURRICULUM

(Class 3, Cr. 3)

Objectives, organization, and administration of the secondary school curriculum.

EDCI 585 MULTICULTURAL EDUCATION

(Class 3, Cr. 3)

Concepts and theories of ethnicity and cultural pluralism: implications for educational change. Examination of value systems and cultural characteristics of various ethnic groups, different ethnic learning styles, ethnically pluralistic curriculum content and instructional materials, and conceptual curriculum design strategies for implementing multicultural education.

EDCI 589 SPECIAL TOPICS FOR TEACHERS

(Class 1 to 4, Cr. 1 to 4)

Consideration of appropriate professional problems of experienced educational personnel in workshop or in-service programs.

EDCI 590 INDIVIDUAL RESEARCH PROBLEMS

(Cr. 1 to 6)

Opportunities for students to study particular problems under the guidance of a member of the staff. This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work.

EDCI 591 SPECIAL TOPICS IN EDUCATION

(Class 0 to 4, Cr. 1 to 4)

Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, or practical aspects of a particular within the usual graduate class format.

EDCI 601 PROBLEMS IN LITERACY ACQUISITION: ADVANCED PRACTICUM

(Class 1, Lab. 5, Cr. 3)

Prerequisite: EDCI 500 and EDCI 501

Examines strategies for teaching elementary or secondary students who experience moderate to severe difficulties acquiring reading, writing, and other aspects of language. Supervised practicum.

EDCI 602 LANGUAGE ARTS IN THE ELEMENTARY SCHOOL

(Class 3, Cr. 3)

Research, recent trends and current developments in the field of language arts and implications for classroom practice in the elementary school.

EDCI 603 READING IN THE ELEMENTARY SCHOOL

(Class 3, Cr. 3)

Research, recent trends and current developments in the field of reading instruction. Emphasis will be on improving developmental reading in the elementary school programs rather than on surveying remedial programs.

EDCI 604 SOCIAL STUDIES IN THE ELEMENTARY SCHOOL

(Class 3, Cr. 3)

Social studies content and place in the modern elementary education curriculum. Materials, instruction techniques, evaluation procedures, and understanding the syntax of the structure of social studies.

EDCI 605 TEACHING SCIENCE

(Class 3, Cr. 3)

Analysis of historical developments and present trends in science education; the designing, implementation, and evaluation of science programs; the role of research in present and future developments.

EDCI 607 IMPLICATIONS OF RESEARCH AND THEORY FOR PROBLEMS IN

(Class 3, Cr. 3)

Elementary Schools Identification and study of the major problems of elementary schools. Emphasis on developing problems-solving skills and their use in planning solutions to problems identified by individual students.

EDCI 608 INDIVIDUALIZING INSTRUCTIONS IN THE ELEMENTARY AND SECONDARY SCHOOL

(Class 3, Cr. 3)

This course explores the foundations underlying individualized instruction, the preparation of the individualized instruction materials for the classroom, the role of research in individualized instruction, and the future trends and issues in individualized instruction.

EDCI 646 SUPERVISOR IN CAREER AND TECHNICAL EDUCATION

(Class 3, Cr. 3)

Purpose, principles, and procedures of supervision and management in education and work contexts; theory and practice, human resource environment, development and management.

EDCI 649 ASSESSMENT IN CAREER AND TECHNICAL EDUCATION

(Class 3, Cr. 3)

Goals and rationale for evaluation in education and work training contexts; assessment and measurement methods, techniques, and procedures, reliability, validity, and accuracy; construction and selection of instruments; data and information collection, analysis and interpretation, meta evaluation, adaptations and modifications for special needs populations and using assessment data and information.

EDCI 661 COMPUTER CURRICULUM DESIGN

(Class 3, Cr. 3)

Course examines role of microcomputers in elementary and secondary school curriculum. Emphasis placed on developing curricula for computer literacy, computer programming, and computer applications within subject matter areas. Students develop and evaluate computer curriculum projects based on these areas.

EDCI 663 INTER VIDEO AND MULTIMEDIA

(Class 3, Cr. 3)

Examines interactive video: computers interfaced with videodisc and videotape players. Includes history, overview, research evaluation, design/production techniques, and programming for interactive video.

EDCI 664 COURSEWARE DESIGN FOR COMPUTER-BASED INSTRUCTION

(Class 3, Cr. 3)

This course addresses the application of instructional design principles and computer technology to the design of computer-based instructional materials. Includes research on the use of computers for instruction and courseware design as a research tool.

EDCI 671 MATERIALS DESIGN FOR DISTRIBUTED LEARNING SYSTEMS

(Class 1, Lab. 4, Cr. 3)

The design, development, and analysis of instructional materials for small-scale instructional systems. This course will involve the study and formulation of behaviorally stated objectives, content structures, systems analysis, consideration of materials preparation problems, and examination of various arrangements for control of stimulus presentations, and the consideration of various arrangements of mediational devices for evaluation.

EDCI 672 ADVANCED PRACTICES IN LEARNING SYSTEMS DESIGN

(Class 3, Cr. 3)

Applications of instructional systems technology to educational situations. In-depth treatment of learner analysis, learning activities design, learner verification and summative evaluation. Administration of instructional systems and management of sub-systems are studied.

EDCI 681 ELEMENTARY SCHOOL CURRICULUM

(Class 3, Cr. 3)

Needs of children and society; modern programs; procedures for developing a curriculum, including ways to improve the present offerings of a school.

EDCI 695 INTERNSHIP IN EDUCATION

(Cr. 1 to 10)

A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization.

EDCI 698 RESEARCH MS THESIS

(Class 1 to 18, Cr. 1 to 18)

Educational Foundations and Administration

EDFA 221 SOCIETY, SCHOOL AND THE PROFESSIONAL EDUCATOR

(Class 3, Cr. 3)

Examination of philosophical ideas and social forces which have shaped and continue to shape public education. Consideration of past, present and future relationships between school and society. The role of the professional educator in shaping these relationships. Introduction to basic legal responsibilities and ethical guidelines which determine professional conduct. Consideration of contemporary educational issues. Selected schools representing diverse educational philosophies, cultural settings and levels will be visited and studied.

EDFA 490 INDIVIDUAL RESEARCH AND TEACHING EXPERIENCE

(Cr. 1 to 8)

Opportunity for undergraduate students to investigate particular problems in the field of education under supervision.

EDFA 491 TOPICS AND ISSUES IN EDUCATION*(Class 1, Cr. 1)*

Provides the student with the opportunity to strengthen the preparation program through the study of selected educational topics and issues based on individual needs and interests. One topic is dealt with in each enrollment.

EDFA 500 PHILOSOPHY OF AMERICAN EDUCATION*(Class 3, Cr. 3)*

Consideration of the major ideas, trends, and movements in the philosophy of American education. Their significance for educational objectives, teaching and evaluative methods, and classroom organization and management is analyzed in depth.

EDFA 511 INFORMATION SYSTEMS IN EDUCATION*(Class 3, Cr. 3)*

An overview of automated data processing application to education. Primary emphasis on administrative applications for pupil, staff, facility, program, and financial accounting.

EDFA 512 FOUNDATIONS OF EDUCATIONAL ADMINISTRATION*(Class 3, Cr. 3)*

Administration of education; roles of local, state, and federal government. Focus on purpose, organization, task areas, and processes of educational administration.

EDFA 513 EDUCATIONAL FACILITIES PLANNING*(Class 3, Cr. 3)*

Systems approach as a basis for school facilities planning. Study directed toward procedures for solving facilities problems. Emphasis on techniques for developing and securing technical information.

EDFA 516 SCHOOL-COMMUNITY RELATIONS*(Class 3, Cr. 3)*

This course will stress concepts and principles relevant to school-community interaction. It will focus on the new roles of the public in education and will deal with problems encountered by education in communicating with the public.

EDFA 589 SPECIAL TOPICS FOR TEACHERS*(Class 1 to 4, Cr. 1 to 4)*

Consideration of concerns of experienced educational personnel related to educational development, technology, methodology and curriculum. Designed for workshop or in-service formats. Not available for use in graduate degree programs.

EDFA 590 INDIVIDUAL RESEARCH PROBLEMS*(Cr. 1 to 6)*

Opportunities for students to study particular problems under the guidance of a member of the staff. This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work.

EDFA 591 SPECIAL TOPICS IN EDUCATION*(Class 0 to 4, Cr. 1 to 4)*

Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, or practical aspects of a particular issue within the usual graduate class format.

EDFA 602 SEMINAR: THE SCHOOL PRINCIPALSHIP*(Class 2 to 4, Cr. 2 to 4)**Prerequisite: EDFA 512*

Individual exploration in depth of selected aspects of the school principalship and critical analysis of related issues.

EDFA 604 SECONDARY SCHOOL ADMINISTRATION*(Class 2 to 3, Cr. 2 to 3)**Prerequisite: EDFA 602*

Study of role and responsibilities of the secondary school principalship; focus on organization and administration of students, staff and educational program; special consideration devoted to schedule construction, program accounting, and school and community relations.

EDFA 605 ELEMENTARY SCHOOL ADMINISTRATION*(Class 2 to 3, Cr. 2 to 3)**Prerequisite: EDFA 602*

Study of role and responsibilities of the elementary school principalship; focus upon leadership functions in staff and pupil personnel, school and class organization, plant management, instructional and educational program, and school and community relations.

EDFA 607 ADMINISTRATION OF EDUCATIONAL SYSTEMS*(Class 3, Cr. 3)*

An examination of administrative function, process, structure, and practice. Special emphasis given to theory development in administration. Exploration of system analysis applications to educational administration.

EDFA 608 BUSINESS MANAGEMENT IN EDUCATION*(Class 3, Cr. 3)*

Examination of internal and external determinants of school fiscal policy. Experiences with fiscal procedures for school budgeting and accounting, including preparation of a school budget.

EDFA 609 LEGAL ASPECTS OF AMERICAN EDUCATION*(Class 3, Cr. 3)*

Legal foundations of education as established by constitutional provisions, court decisions, opinions of attorney generals, administrative rulings and executive directives. Emphasis on legal theory and principles currently in state of change. Stress on case study method of investigation into educational law.

EDFA 610 SUPERVISION OF INSTRUCTION AND INSTRUCTIONAL PERSONNEL*(Class 3, Cr. 3)*

Examination of the functions of school administration which focuses on achievement of instructional expectations of educational service. Emphasis on developing an individualized supervisory program for instructional personnel.

EDFA 611 PERSONNEL ADMINISTRATION*(Class 3, Cr. 3)*

Provision of a conceptual framework for dealing with school personnel problems. Emphasis placed on implications of social change for personnel administration, the nature and scope of the personnel function, problems created by conflict between individual needs and organizational demands, and the strategies and consequences of collective negotiations.

EDFA 613 CLINIC FOR EDUCATIONAL LEADERS*(Class 1 to 6, Cr. 1 to 6)*

Topics will vary.

EDFA 694 INTERNSHIP IN EDUCATIONAL ADMINISTRATION: BUILDING ADMIN*(Class 1 to 3, Cr. 1 to 3)*

Amount of credit to be determined by nature and extent of assignment. Admission by the consent of instructor. Field Experience in educational administration under university supervision in selected related school building administration.

EDFA 695 INTERNSHIP IN EDUCATION*(Cr. 1 to 10)*

A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization.

EDFA 698 RESEARCH MS THESIS*(Cr. 1 to 18)*

Research for Master's Thesis.

Education and Professional Studies**EDPS 103 INTRODUCTION TO HIGHER EDUCATION***(Class 3, Cr. 3)*

This course is designed to assist and guide students in maximizing their potential for success at the university by promoting academic growth. Through collaborative learning, this course will promote the concept of life-long learning through the use of the following strategies: utilization of campus resources; goal setting; time management; diversity training; values exploration; career exploration; and critical thinking skills. This course is highly recommended for all freshman.

EDPS 220 PSYCHOLOGY OF LEARNING*(Class 3, Cr. 3)**Prerequisite: EDCI 205 or EDCI 206*

An examination of the learner and learning. Study of the cognitive, social, physical, moral and personality development from early childhood through adolescence; implications of developmental stages for educational planning and intervention. Principles of basic learning theories, facilitative conditions and strategies for enhancing learning; classroom management as a means to foster the learner's development and learning. Survey of techniques for assessing the learner, learning and identification of learning dysfunctions.

EDPS 260 INTRODUCTION TO SPECIAL EDUCATION*(Class 3, Cr. 3)**Prerequisite: EDPS 285 and EDCI 260 and EDPS 220*

A survey of the field of special education: foundations, areas of exceptionality, teaching strategies, and current issues and trends.

EDPS 285 DIVERSITY AND EDUCATION*(Class 2, Lab. 2, Cr. 3)**Prerequisite: EDCI 205 or EDCI 206*

This course integrates an understanding of diversity with principles of democratic education. Historical, Sociological, Cultural, Political, Philosophical, and Pedagogical Foundations of diversity are explored and related to issues of pedagogy in a pluralistic society. This course includes an experiential component.

EDPS 370 TEACHING STUDENTS WITH DIVERSE LEARNING NEEDS IN K-12 CLASS*(Class 2, Lab. 3, Cr. 3) Experiential Learning**Prerequisite: EDCI 355 and EDPS 260*

The course develops a knowledge base and practical strategies that will enable teachers to help every student succeed—including students with disabilities, those with diverse cultural backgrounds, students with limited English proficiency, students who are considered at risk for academic failure, and those who are gifted and talented. Topics include planning and grouping strategies, classroom management, collaboration skills, curriculum adaptations, teaching strategies, and supported inclusive education. Field experiences are integrated with classroom instruction.

EDPS 490 INDIVIDUAL RESEARCH AND TEACHING EXPERIENCE*(Cr. 1 to 8)*

Opportunity for undergraduate students to investigate particular problems in the field of education under supervision.

EDPS 490A CAREER & LIFE PLANNING SEMINAR & LAB*(Class 2, Cr. 2)*

Students will complete a personal assessment of their values, skills personality traits, interests, life goals and life roles. In addition, students will gain an understanding of their personal and professional journey in the context of young adult development theory. Students will also become familiar with tools integral to a successful job search, including networking, resume writing, job search correspondence, and interviewing. Finally students will identify possible paths as they are guided through the process of integrating their knowledge of themselves with information they have gathered about the larger world.

EDPS 491 TOPICS AND ISSUES IN EDUCATION*(Class 1, Cr. 1 or Class 3, Cr. 3)*

Provides the student with the opportunity to strengthen the preparation program through the study of selected educational topics and issues based on individual needs and interests. One topic is dealt with in each enrollment.

EDPS 500 HUMAN RELATIONS IN GROUP COUNSELING*(Class 2, Lab. 2, Cr. 3)*

Human relations skills; the functioning and use of group processes. Leadership styles are treated by the instructional component. Students participate in laboratories designed to increase personal awareness and relationship skills.

EDPS 501 INTRODUCTION TO SCHOOL COUNSELING*(Class 3, Cr. 3)*

Treats the history, principles, services, and theoretical development of guidance with consideration given to counselor role and functions, current practices, and emerging trends and issues.

EDPS 503 INTRODUCTION TO MENTAL HEALTH COUNSELING*(Class 3, Cr. 3)*

Provides an overview of mental health counseling as it relate to community issues and needs. Roles and settings for mental health counselor and specific intervention skills will be stressed.

EDPS 505 CAREER THEORY AND INFORMATION*(Class 3, Cr. 3)*

Treats career development theories which emphasize aspects of the self in decision-making, occupational classification systems, and education and vocational information with applications to individual and group counseling.

EDPS 507 COUNSELING MULTICULTURAL AND DIVERSE POPULATIONS*(Class 3, Cr. 3)*

Counseling strategies for multicultural and diverse populations encountered by helping professionals. Among populations considered are ethnic and cultural minorities, older persons, the gifted, the disabled.

EDPS 530 ADVANCED EDUCATIONAL PSYCHOLOGY*(Class 3, Cr. 3)*

Theories of learning and development, research on instruction and learning, and principles of measurement applied to educational problems.

EDPS 531 INTRODUCTION TO MEASUREMENT AND EVALUATION*(Class 3, Cr. 3)*

An introduction to the basic concepts and principles of measurement and evaluation with special emphasis on descriptive statistics, and teacher made and standardized tests.

EDPS 533 INTRODUCTION TO EDUCATIONAL RESEARCH I: METHODOLOGY*(Class 3, Cr. 3)*

An introductory course in educational research and evaluation methodology which considers the various methods of educational research, the formulation of research hypotheses, and the preparation of research reports.

EDPS 563 IDENTIFICATION, EVALUATION, AND ASSESSMENT OF EXCEPTIONAL INDIVIDUALS*(Class 3, Cr. 3)*

Advanced procedures for educational assessment of children who are exceptional. Emphasis is given to criterion-referenced, and observational assessment instruments and procedures. Practicum to operationalize skills and knowledge.

EDPS 564 HISTORICAL PERSPECTIVES, ETIOLOGY, AND CHARACTERISTICS OF INDIVIDUALS WITH DISABILITIES*(Class 3, Cr. 3)*

Includes basic concepts (historical perspective, definition, classification, assessment and etiology); introduction to levels of retardation; life span issues and programs; and current teaching trends.

EDPS 565 INTERVENTION STRATEGIES AND RESEARCH (D,I,M,E)*(Class 3, Cr. 3)*

Includes: (1) mental retardation; (2) learning disabilities (3) emotional disturbance. One topic is dealt with in each enrollment.

EDPS 566 SUPERVISED TEACHING IN SPECIAL EDUCATION (D,I,M,E,S)*(Cr. 4 to 8)*

Supervised teaching of students with (D) Learning Disabilities, (M) Mildly Mentally Handicapped, (E) Emotional Disturbance. Laboratory experience is required. One topic is dealt with in each enrollment.

EDPS 568 SOCIAL, LEGAL AND ETHICAL ISSUES IN SPECIAL EDUCATION*(Class 3, Cr. 3)*

Survey of difference and similarities of children with exceptionalities, including their nature and characteristics related to their developmental and educational needs. Analysis and practical application of social, legal, and ethical issues in the field of special education.

EDPS 574 SEVERELY EMOTIONALLY HANDICAPPED INDIVIDUALS: HISTORICAL PERSPECTIVES, ETIOLOGY, AND CHARACTERISTICS*(Class 3, Cr. 3)*

Description and analysis of disordered behavior for purposes of assessing and determining probable etiology, prevalence, and moderating factors.

EDPS 577 LEARNING DISABLED INDIVIDUALS: HISTORICAL PERSPECTIVES, ETIOLOGY, AND CHARACTERISTICS*(Class 3, Cr. 3)*

Etiology, And Characteristics Introduction to history, definition, and theories of learning disabilities; current research on assessment and intervention for students with learning and behavior problems.

EDPS 589 SPECIAL TOPICS TEACHERS*(Class 1 to 4, Cr. 1 to 4)*

Consideration of concerns of experienced educational personnel related to educational development, technology, methodology and curriculum. Designed for workshop or in-service formats. Not available for use in graduate degree programs.

ENGL 237 INTRODUCTION TO POETRY

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

How to read poetry intelligently; function of diction, metrics, figures of speech, and theme; place of a poem in history, uses of poetry, etc.

ENGL 238 INTRODUCTION TO FICTION

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108 or ENGL 103

Readings and discussion of selected short stories and several novels, to promote awareness, understanding, and appreciation of the range, values, techniques, and meanings of reputable modern fiction.

ENGL 240 SURVEY OF THE LITERATURE OF ENGLAND: FROM THE BEGINNINGS THROUGH THE NEOCLASSICAL PERIOD

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An introduction to English literature from the Anglo-Saxon age through the eighteenth century neoclassical period, with emphasis on such major writers as Chaucer, Spenser, Shakespeare (non-dramatic work), Donne, Milton, Dryden, Pope, and Johnson. The course also treats significant minor writers in their relation to literary movements and ideas.

ENGL 241 SURVEY OF THE LITERATURE OF ENGLAND: FROM THE RISE OF ROMANTICISM TO THE MODERN PERIOD

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A continuation of ENGL 240, this course surveys English literature (excluding the novel) from the late eighteenth century to the twentieth century, with emphasis on such major writers as Blake, Wordsworth, Keats, Tennyson, Arnold, Blake, Hardy, Yeats, T.S. Eliot, and Auden. The course also treats significant minor writers in their relation to literary movements and ideas.

ENGL 250 GREAT AMERICAN BOOKS

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Several books, such as *The Scarlet Letter*, *Moby Dick* and *Walden*, will be read and discussed as to their literary qualities and their cultural significance.

ENGL 254 GREAT BRITISH BOOKS

(Class 3, Cr. 3)

Prerequisite: ENGL 104

An examination of great British works within the context of their intellectual, social, and literary traditions. Works such as *Hamlet*, *Gulliver's Travels*, *Pride and Prejudice* and *To the Lighthouse* will be discussed.

ENGL 260 INTRODUCTION TO WORLD LITERATURE: TO 1700

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 108 or ENGL 103

A comparison of some of the major works of world literature in translation, from the beginnings to 1700. Emphasis on Greek, Roman, Eastern and early European literature.

ENGL 261 INTRODUCTION TO WORLD LITERATURE: SINCE 1700

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A comparison of some of the major works of world literature in translation, from 1700 to present. Emphasis on Continental, African, Latin-American and Eastern literature.

ENGL 286 THE MOVIES

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

This course is a comprehensive introduction to the aesthetic and history of movies. Students will learn how films are constructed, how they represent and challenge cultural and aesthetic values, and how they are produced and distributed. The primary focus of the course is on narrative movies made in the United States, though some narrative movies and foreign films are included.

ENGL 302 PUBLICATIONS DESIGN

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

This course focuses on the design, layout and production of various documents using personal computers. Emphasis is given to principles of publication design

and page makeup, typography, and the use of personal computers in business and industrial publishing. Lab sessions allow students hands-on experience in using desktop publishing software and computer systems. (Cross-listed as COM 302)

ENGL 304 ADVANCED COMPOSITION

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Designed for students who wish additional training in composition beyond the basic requirements. Extensive practice in the writing of mature expository, critical, and argumentative prose.

ENGL 307 WRITTEN AND ORAL COMMUNICATION FOR ENGINEERS

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108 and COM 114

Course focuses on written and oral communication specifically for the environment, with special attention given to purpose, organization, audience analysis, and appropriate situational protocol. Written work emphasizes technical reports, technical descriptions, research skills, principles of document design, collaborative writing, and routine correspondence. Oral work emphasizes project presentations, conference planning and leadership, and small group dynamics.

ENGL 308 MODERN ENGLISH GRAMMAR

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An introduction to the study of traditional, structural, and generative-transformational analyses of English. Some attention to new directions in grammatical description and application.

ENGL 310 INTRODUCTION TO POPULAR CULTURE

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108

A survey of mass culture, popular arts and media, including literature (dime novels and westerns), art and architecture (magazine illustrators and prefabricated housing), radio-TV-film, and music (ballads, jazz, rock), from mid-nineteenth century through present day. When appropriate, field trips will be scheduled.

ENGL 312 ETHNIC AMERICAN WOMEN WRITERS

(Class 3, Cr. 3)

Prerequisite: ENGL 104

This course explores works by women writers of various ethnic backgrounds living and writing in America during the last century. The emphasis is on ways in which a writer's ethnicity informs her writing and influences the content of her literary works. The course includes women writers of all ethnic backgrounds, including Native American, African American, Asian American, Hispanic American, Euro-American, and Jewish American. The major purpose is to introduce students to varied cultural voices in dialogue with American traditions as women writers express conflicting experiences within dual cultures. (Cross-listed as WOST 312.)

ENGL 313 AFRICAN AMERICAN WOMEN'S FICTION

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

African American Women's Fiction examines novels and short stories produced since the mid-nineteenth century, including works by Toni Morrison and Alec Walker, as well as Post-Reconstruction, Harlem Renaissance, modern and contemporary authors as Pauline Hopkins, Nella Larsen, Ann Petry and Gloria Maylor. The course concentrates on African American women's fictional tradition, including critical theory.

ENGL 314 MODERN POETRY

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A study of poetry and poetic forms beginning with the 20th century. The course may examine major figures in North American, British, Continental, and Latin American traditions among others. Emphasis may include studies in prosody, major movements and major themes.

ENGL 315 AMERICAN FOLKLORE AND FOLKLIFE IN THE US

(Class 3, Cr. 3)

This course is an introduction to the study of Folklore and Folklife in the United States. The course content will include the basic concepts of oral traditions, customs, and material culture. Students will complete a semester project of collecting and analyzing some expression of Folklore and Folklife.

ENGL 320 BY AND ABOUT WOMEN*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

Course emphasizes significant texts by major women writers such as Atwood, the Brontes, Cather, Chopin, Dickinson, Eliot, Glaspell, Hurston, Jewett, Lessing, Mansfield, Morrison, Oates, Rich, and Woolf. Although the class will study mainly 19th and 20th century it will not be restricted to these. In addition, the readings will also include a variety of literary genres: novel, short fiction, poetry, and drama. Cross listed as WOST 320.

ENGL 323 SEXUAL IDENTITY IN LITERATURE*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 108*

This course explores how sexual identity informs literary works. Fiction, poetry, drama, personal narrative and essays from lesbian, bisexual, gay and transgendered (LGBT) writers may be included.

ENGL 324 INTERNATIONAL WOMEN'S LITERATURE*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

Course presents an international perspective on women's social, political, economic and imaginative lives. The major emphasis will be global literatures from Africa, the Americas, Asia and the Middle East. (WOST 324)

ENGL 325 INTERNATIONAL SHORT STORY*(Class 3, Cr. 3)**Prerequisite: ENGL 104*

Course concentrates on an international selection of stories from both the Eastern and Western Hemispheres. Students will read, discuss and write about stories from Asia Africa, the Americas and the Middle East, among other places.

ENGL 326 ENGLISH LINGUISTICS*(Class 3, Cr. 3) TRANSFER IN**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

An introduction to the nature and structure of language, as well as the study of dialects, semantics, and history of the language.

ENGL 327 ENGLISH LANGUAGE I: HISTORY DEVELOPMENT*(Class 3, Cr. 3)*

This course presents the basic facts of the historical development of the English language from its beginnings to the present. The major changes in the sounds of English, the growth of the lexicon, and the development of the grammatical system will be studied.

ENGL 333 RENAISSANCE ENGLISH LITERATURE*(Class 3, Cr. 3)*

A survey of Renaissance literature in England through an intensive reading or representative works by such authors as Spenser, Jonson, and Donne (Shakespeare's plays not included.)

ENGL 335 RESTORATION AND 18TH CENTURY ENGLISH LITERATURE*(Class 3, Cr. 3)*

A survey of Restoration and eighteenth-century literature through an intensive reading of representative works by such authors as Dryden, Pope, Swift and Johnson (the novel and the drama excluded for the most part.)

ENGL 340 LITERATURE BY WOMEN OF COLOR*(Class 3, Cr. 3)*

This course focuses on literature written in English by women of color living in the United States. Writers included are of African-American, Native-American, Asian-American, and Latino/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions. ENGL 340 examines some of the cultural differences among these groups, as reflected in the literature. The course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures.

ENGL 350 SURVEY OF AMERICAN LITERATURE FROM ITS BEGINNINGS TO 1865*(Class 3, Cr. 3) TRANSFER IN**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

An introduction to American literature from the colonial period to the Civil War,

emphasizing such major literary figures as Edward Taylor, Franklin, Poe, Hawthorne, Melville, Emerson, Thoreau, and Whitman. This course also treats significant minor writers in their relation to literary movements and ideas and includes the work of minority writers.

ENGL 351 SURVEY OF AMERICAN LITERATURE FROM 1865 TO THE POST WORLD WAR II PERIOD*(Class 3, Cr. 3) TRANSFER IN**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

A continuation of ENGL 350, this course surveys American literature from the Civil War to recent times, emphasizing such major literary figures as Dickinson, Twain, James, Crane, Frost, T.S. Eliot, Fitzgerald, Hemingway, and Faulkner. The course also treats significant minor writers in their relation to literary movements and ideas and includes the work of minority writers.

ENGL 355 AFRICAN-AMERICAN LITERATURE*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 108 or ENGL 103*

An examination of the literary, social, and historical significance of major works of fiction, drama, poetry, and nonfiction by Afro-Americans. Readings will range from the earliest period to the present with attention, when appropriate, to the influence of folklore and music on literature.

ENGL 356 AMERICAN HUMOR*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

Humorous writings of the nineteenth and twentieth centuries are studied as to form and technique and also as a reflection of American life.

ENGL 373 SCIENCE FICTION AND FANTASY*(Class 3, Cr. 3)**Prerequisite: ENGL 104*

Representative works of science fiction and fantasy examined in relation to both mainstream and popular literature. Emphasis is on technique, theme, and form.

ENGL 381 THE BRITISH NOVEL*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 108 or ENGL 103*

A survey of representative British novels of the eighteenth and nineteenth centuries by such authors as Defoe, Fielding, Austen, Dickens, Eliot, and Hardy.

ENGL 382 THE AMERICAN NOVEL*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

A survey of representative American novels of the nineteenth and twentieth centuries by such authors as Cooper, Twain, Hawthorne, Melville, James and Faulkner.

ENGL 383 MODERN DRAMA: IBSEN TO THE ABSURDIST*(Class 3, Cr. 3)**Prerequisite: ENGL 104 or ENGL 103 or ENGL 108*

A survey of major works of Continental, English, and American drama, including such authors as Ibsen, Chekhov, Shaw, O'Neill, and Beckett.

ENGL 386 HISTORY OF THE FILM TO 1938*(Class 2, Lab. 3, Cr. 3)**Prerequisite: ENGL 104*

A survey of the American and European cinema from its origin in technology and realism to the aesthetic implications presented by the coming of sound. Emphasis on the feature film and on the prevalent aesthetic attitudes in the first decades of the motion picture.

ENGL 387 HISTORY OF THE FILM FROM 1938 TO THE PRESENT*(Class 2, Lab. 1, Cr. 3)**Prerequisite: ENGL 104 or ENGL 108*

A survey of international cinema for the period indicated. Emphasis on the feature film and its development as a communication tool, popular art form, and medium of personal expression.

ENGL 391 COMPOSITION FOR ENGLISH TEACHING MAJORS*(Class 3, Cr. 3)*

Intensive practice in writing exposition and in annotating high school students' compositions.

ENGL 237 INTRODUCTION TO POETRY

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

How to read poetry intelligently; function of diction, metrics, figures of speech, and theme; place of a poem in history, uses of poetry, etc.

ENGL 238 INTRODUCTION TO FICTION

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108 or ENGL 103

Readings and discussion of selected short stories and several novels, to promote awareness, understanding, and appreciation of the range, values, techniques, and meanings of reputable modern fiction.

ENGL 240 SURVEY OF THE LITERATURE OF ENGLAND: FROM THE BEGINNINGS THROUGH THE NEWCLASSICAL PERIOD

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An introduction to English literature from the Anglo-Saxon age through the eighteenth century neoclassical period, with emphasis on such major writers as Chaucer, Spenser, Shakespeare (non-dramatic work), Donne, Milton, Dryden, Pope, and Johnson. The course also treats significant minor writers in their relation to literary movements and ideas.

ENGL 241 SURVEY OF THE LITERATURE OF ENGLAND: FROM THE RISE OF ROMANTICISM TO THE MODERN PERIOD

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A continuation of ENGL 240, this course surveys English literature (excluding the novel) from the late eighteenth century to the twentieth century, with emphasis on such major writers as Blake, Wordsworth, Keats, Tennyson, Arnold, Blake, Hardy, Yeats, T.S. Eliot, and Auden. The course also treats significant minor writers in their relation to literary movements and ideas.

ENGL 250 GREAT AMERICAN BOOKS

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Several books, such as *The Scarlet Letter*, *Moby Dick* and *Walden*, will be read and discussed as to their literary qualities and their cultural significance.

ENGL 254 GREAT BRITISH BOOKS

(Class 3, Cr. 3)

Prerequisite: ENGL 104

An examination of great British works within the context of their intellectual, social, and literary traditions. Works such as *Hamlet*, *Gulliver's Travels*, *Pride and Prejudice* and *To the Lighthouse* will be discussed.

ENGL 260 INTRODUCTION TO WORLD LITERATURE: TO 1700

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 108 or ENGL 103

A comparison of some of the major works of world literature in translation, from the beginnings to 1700. Emphasis on Greek, Roman, Eastern and early European literature.

ENGL 261 INTRODUCTION TO WORLD LITERATURE: SINCE 1700

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A comparison of some of the major works of world literature in translation, from 1700 to present. Emphasis on Continental, African, Latin-American and Eastern literature.

ENGL 286 THE MOVIES

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

This course is a comprehensive introduction to the aesthetic and history of movies. Students will learn how films are constructed, how they represent and challenge cultural and aesthetic values, and how they are produced and distributed. The primary focus of the course is on narrative movies made in the United States, though some narrative movies and foreign films are included.

ENGL 302 PUBLICATIONS DESIGN

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

This course focuses on the design, layout and production of various documents using personal computers. Emphasis is given to principles of publication design

and page makeup, typography, and the use of personal computers in business and industrial publishing. Lab sessions allow students hands-on experience in using desktop publishing software and computer systems. (Cross-listed as COM 302)

ENGL 304 ADVANCED COMPOSITION

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Designed for students who wish additional training in composition beyond the basic requirements. Extensive practice in the writing of mature expository, critical, and argumentative prose.

ENGL 307 WRITTEN AND ORAL COMMUNICATION FOR ENGINEERS

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108 and COM 114

Course focuses on written and oral communication specifically for the environment, with special attention given to purpose, organization, audience analysis, and appropriate situational protocol. Written work emphasizes technical reports, technical descriptions, research skills, principles of document design, collaborative writing, and routine correspondence. Oral work emphasizes project presentations, conference planning and leadership, and small group dynamics.

ENGL 308 MODERN ENGLISH GRAMMER

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An introduction to the study of traditional, structural, and generative-transformational analyses of English. Some attention to new directions in grammatical description and application.

ENGL 310 INTRODUCTION TO POPULAR CULTURE

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108

A survey of mass culture, popular arts and media, including literature (dime novels and westerns), art and architecture (magazine illustrators and prefabricated housing), radio-TV-film, and music (ballads, jazz, rock), from mid-nineteenth century through present day. When appropriate, field trips will be scheduled.

ENGL 312 ETHNIC AMERICAN WOMEN WRITERS

(Class 3, Cr. 3)

Prerequisite: ENGL 104

This course explores works by women writers of various ethnic backgrounds living and writing in America during the last century. The emphasis is on ways in which a writer's ethnicity informs her writing and influences the content of her literary works. The course includes women writers of all ethnic backgrounds, including Native American, African American, Asian American, Hispanic American, Euro-American, and Jewish American. The major purpose is to introduce students to varied cultural voices in dialogue with American traditions as women writers express conflicting experiences within dual cultures. (Cross-listed as WOST 312.)

ENGL 313 AFRICAN AMERICAN WOMEN'S FICTION

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

African American Women's Fiction examines novels and short stories produced since the mid-nineteenth century, including works by Toni Morrison and Alec Walker, as well as Post-Reconstruction, Harlem Renaissance, modern and contemporary authors as Pauline Hopkins, Nella Larsen, Ann Petry and Gloria Maylor. The course concentrates on African American women's fictional tradition, including critical theory.

ENGL 314 MODERN POETRY

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A study of poetry and poetic forms beginning with the 20th century. The course may examine major figures in North American, British, Continental, and Latin American traditions among others. Emphasis may include studies in prosody, major movements and major themes.

ENGL 315 AMERICAN FOLKLORE AND FOLKLIFE IN THE US

(Class 3, Cr. 3)

This course is an introduction to the study of Folklore and Folklife in the United States. The course content will include the basic concepts of oral traditions, customs, and material culture. Students will complete a semester project of collecting and analyzing some expression of Folklore and Folklife.

ENGL 320 BY AND ABOUT WOMEN

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Course emphasizes significant texts by major women writers such as Atwood, the Brontes, Cather, Chopin, Dickinson, Eliot, Glaspell, Hurston, Jewett, Lessing, Mansfield, Morrison, Oates, Rich, and Woolf. Although the class will study mainly 19th and 20th century it will not be restricted to these. In addition, the readings will also include a variety of literary genres: novel, short fiction, poetry, and drama. Cross listed as WOST 320.

ENGL 323 SEXUAL IDENTITY IN LITERATURE

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108

This course explores how sexual identity informs literary works. Fiction, poetry, drama, personal narrative and essays from lesbian, bisexual, gay and transgendered (LGBT) writers may be included.

ENGL 324 INTERNATIONAL WOMEN'S LITERATURE

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Course presents an international perspective on women's social, political, economic and imaginative lives. The major emphasis will be global literatures from Africa, the Americas, Asia and the Middle East. (WOST 324)

ENGL 325 INTERNATIONAL SHORT STORY

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Course concentrates on an international selection of stories from both the Eastern and Western Hemispheres. Students will read, discuss and write about stories from Asia Africa, the Americas and the Middle East, among other places.

ENGL 326 ENGLISH LINGUISTICS

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An introduction to the nature and structure of language, as well as the study of dialects, semantics, and history of the language.

ENGL 327 ENGLISH LANGUAGE I: HISTORY DEVELOPMENT

(Class 3, Cr. 3)

This course presents the basic facts of the historical development of the English language from its beginnings to the present. The major changes in the sounds of English, the growth of the lexicon, and the development of the grammatical system will be studied.

ENGL 333 RENAISSANCE ENGLISH LITERATURE

(Class 3, Cr. 3)

A survey of Renaissance literature in England through an intensive reading or representative works by such authors as Spenser, Jonson, and Donne (Shakespeare's plays not included.)

ENGL 335 RESTORATION AND 18TH CENTURY ENGLISH LITERATURE

(Class 3, Cr. 3)

A survey of Restoration and eighteenth-century literature through an intensive reading of representative works by such authors as Dryden, Pope, Swift and Johnson (the novel and the drama excluded for the most part.)

ENGL 340 LITERATURE BY WOMEN OF COLOR

(Class 3, Cr. 3)

This course focuses on literature written in English by women of color living in the United States. Writers included are of African-American, Native-American, Asian-American, and Latino/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions. ENGL 340 examines some of the cultural differences among these groups, as reflected in the literature. The course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures.

ENGL 350 SURVEY OF AMERICAN LITERATURE FROM ITS BEGINNINGS TO 1865

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An introduction to American literature from the colonial period to the Civil War,

emphasizing such major literary figures as Edward Taylor, Franklin, Poe, Hawthorne, Melville, Emerson, Thoreau, and Whitman. This course also treats significant minor writers in their relation to literary movements and ideas and includes the work of minority writers.

ENGL 351 SURVEY OF AMERICAN LITERATURE FROM 1865 TO THE POST WORLD WAR II PERIOD

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A continuation of ENGL 350, this course surveys American literature from the Civil War to recent times, emphasizing such major literary figures as Dickinson, Twain, James, Crane, Frost, T.S. Eliot, Fitzgerald, Hemingway, and Faulkner. The course also treats significant minor writers in their relation to literary movements and ideas and includes the work of minority writers.

ENGL 355 AFRICAN-AMERICAN LITERATURE

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108 or ENGL 103

An examination of the literary, social, and historical significance of major works of fiction, drama, poetry, and nonfiction by Afro-Americans. Readings will range from the earliest period to the present with attention, when appropriate, to the influence of folklore and music on literature.

ENGL 356 AMERICAN HUMOR

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Humorous writings of the nineteenth and twentieth centuries are studied as to form and technique and also as a reflection of American life.

ENGL 373 SCIENCE FICTION AND FANTASY

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Representative works of science fiction and fantasy examined in relation to both mainstream and popular literature. Emphasis is on technique, theme, and form.

ENGL 381 THE BRITISH NOVEL

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108 or ENGL 103

A survey of representative British novels of the eighteenth and nineteenth centuries by such authors as Defoe, Fielding, Austen, Dickens, Eliot, and Hardy.

ENGL 382 THE AMERICAN NOVEL

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A survey of representative American novels of the nineteenth and twentieth centuries by such authors as Cooper, Twain, Hawthorne, Melville, James and Faulkner.

ENGL 383 MODERN DRAMA: IBSEN TO THE ABSURDIST

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A survey of major works of Continental, English, and American drama, including such authors as Ibsen, Chekhov, Shaw, O'Neill, and Beckett.

ENGL 386 HISTORY OF THE FILM TO 1938

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ENGL 104

A survey of the American and European cinema from its origin in technology and realism to the aesthetic implications presented by the coming of sound. Emphasis on the feature film and on the prevalent aesthetic attitudes in the first decades of the motion picture.

ENGL 387 HISTORY OF THE FILM FROM 1938 TO THE PRESENT

(Class 2, Lab. 1, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108

A survey of international cinema for the period indicated. Emphasis on the feature film and its development as a communication tool, popular art form, and medium of personal expression.

ENGL 391 COMPOSITION FOR ENGLISH TEACHING MAJORS

(Class 3, Cr. 3)

Intensive practice in writing exposition and in annotating high school students' compositions.

ENGL 396 STUDIES IN LITERATURE AND LANGUAGES

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 108 or ENGL 103

A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls.

ENGL 403 LITERARY THEORY

(Class 3, Cr. 3)

This seminar addresses three major concerns in the study of literature: the problem and the possibility of theory; the problems of canon, form and genre; and the problems of meaning and significance.

ENGL 404 WEB PAGE DESIGN

(Class 3, Lab. 1, Cr. 3)

Provides students with a theoretical understanding of and practical training in developing Web sites. Students will learn the basics of HTML and working with Java and JavaScript. Emphasis is on analyzing real-world contexts (e.g. promotional, informational, instructional) and users of Web sites while authoring texts that meet these needs.

ENGL 405 CREATIVE WRITING

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An advanced course in writing short fiction and poetry for students who have mastered basic skills. Workshop criticism.

ENGL 406 REVIEW WRITING

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Intensive practice in the writing of book, film, and theatre criticism, as well as reviews of musical programs and art exhibits. Readings in critics to serve as possible models. Audience analysis of newspapers and periodicals that would be potential markets.

ENGL 411 STUDIES IN MAJOR AUTHORS

(Class 3, Cr. 3)

A study of the literary critical or cinematic works of one or two influential authors or directors.

ENGL 412 STUDIES IN GENRE

(Class 3, Cr. 3)

A study of literary or cinematic works that share distinctive formal features.

ENGL 413 STUDIES IN HISTORY AND LITERATURE

(Class 3, Cr. 3)

A study of literature or film produced during a particular well-defined historical period from the point of view of its social, political, religious, and economic contexts.

ENGL 414 STUDIES IN LITERATURE AND CULTURE

(Class 3, Cr. 3)

A study of literature or film from the perspective of the cultural norms and values it expresses, celebrates challenges, and imaginatively opposes.

ENGL 420 BUSINESS WRITING

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Workplace writing in networked environments for management contexts. Emphasizes organizational context, project planning, document management, ethics, research, team writing. Typical genres include management memos, reports, letters, email, resumes (print and online), oral presentations.

ENGL 423 TECHNICAL PUBLICATIONS WRITING

(Class 3, Cr. 3)

Prerequisite: ENGL 105 or ENGL 108 or ENGL 220

Designed to teach the student how to create software documentation, using contemporary management methods and the state-of-the-art capabilities of the personal computer.

ENGL 426 DISCOURSE COMMUNITIES IN PROFESSIONAL WRITING

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Course examines business and technical writers as two separate, yet related, discourse communities and explores to what extent various influences, such as classical rhetoric, modern discourse theory, cognitive psychology, and organiza-

tional climate, may shape how members of these communities define, think about, and practice the art of writing. Class will explore how these theoretical approaches may account for interactions between writer, audience, text and subject matter.

ENGL 427 SENIOR WRITING PROJECT

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Course consists of a research and writing project in professional writing. Such a project should be a culmination of student coursework in professional writing, including the internship or supervised writing. As determined by the instructor in consultation with the student, projects may be in technical writing, business or industrial report writing, technical or scientific journalism, or literary journalism. Individual conferences only; no class meetings.

ENGL 428 SPECIAL TOPICS IN WRITING

(Class 3, Cr. 3)

A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls. Sample topics may include writing in the medical field, writing and technology, or publicity and promotional writing.

ENGL 429 SUPERVISED WRITING

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Special writing projects for students in the Writing Option. Individual conferences only; no class meeting.

ENGL 431 WEB USABILITY: WRITING & READING ON THE WEB

(Class 3, Cr. 3)

This course assists students in writing effective Web-based content and understanding how to make Web sites usable. Course examines how users interact with Web sites, how/when sites are successful, and how/when they are not. Students will learn how to write effective online content for the Web and Intranets/Extranets, understand usability issues, and conduct user testing a Web sites.

ENGL 435 TOPICS IN WRITING FOR INTERACTIVE DIGITAL MEDIA

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Focuses on examining a specific topic related to writing for interactive digital media. Special topics include writing for Web-based shared or social media, such as blogs, wikis, and social networks, editing online content, or digital storytelling, among others. Specific attention paid to application and examples in the areas of education, business and entertainment.

ENGL 436 WRITING FOR INFORMATIONAL INTERACTIVE MEDIA

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Provides an introduction to writing for informational interactive media. Material presented includes: the role of the interactive writer, thinking interactively, interactive structure, script format and the special challenges of presenting information interactively. We will study sample informational interactive programs and scripts including: e-learning, educational and reference CDs and DVDs, and multimedia exhibits, among others. Students will create an original design proposal for an informational interactive application with flowchart, script and treatment.

ENGL 437 WRITING FOR NARRATIVE INTERACTIVE MEDIA

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Provides an introduction to writing for narrative interactive media. Materials presented includes: the role of the interactive writer, thinking interactively, interactive structure, script format and the special challenges of presenting information interactively. We will study sample narrative interactive programs and scripts including computer/video games, simulations, and worlds, among others. Students will create an original design proposal for a narrative interactive application with flowchart, script, and treatment. Course also explores career opportunities in this field.

ENGL 441 CHAUCER'S CANTERBURY TALES

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Critical reading of The Canterbury Tales in Middle English with attention to the literary and cultural background.

ENGL 442 SHAKESPEARE

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Shakespeare's dramatic craftsmanship, characterization, poetry, humor, psychology, and modern pertinence illustrated in representative tragedies, comedies, and history plays.

ENGL 444 MILTON

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An in-depth study of Milton's works, including some of his early lyric poems, prose, and major works – Paradise Lost, Paradise Regained, and Samson Agonistes.

ENGL 451 MAGAZINE JOURNALISM

(Class 3, Cr. 3)

Prerequisite: COM 255

Examination of magazine staff organization, market analysis and editorial consent. Study of and practice in the writing of a variety of nonfiction materials. Emphasis is on the adaptation of topics and presentation of editorial policies and reader groups.

ENGL 455 MAIN CURRENTS OF AMERICAN THOUGHT

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A survey of dominant ideas and intellectual trends in America from 1607 to the present as revealed through American literature and as related to American life and culture.

ENGL 462 THE BIBLE AS LITERATURE: THE OLD TESTAMENT

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An analysis of the historical books of the Old Testament, other narratives, and the books of Psalms, Proverbs, and Job, with emphasis on comprehension.

ENGL 463 THE BIBLE AS LITERATURE: THE NEW TESTAMENT

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

A study of a large part of the New Testament, with emphasis on the continuity of religious ideas displayed in the Old and New Testaments.

ENGL 479 THE SHORT STORY

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

An historical and critical study of nineteenth and twentieth century short stories: Irish, British, American, Continental.

ENGL 480 INTERNSHIP IN WRITING

(Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108 (To gain admission to the internship, the student must have a 3.0 GPA in all courses in the writing focus or consent of the instructor. At least 21 hours of this coursework must be completed prior to the internship.)

Assigned internships in business, industrial and other professional situations.

ENGL 492 LITERATURE IN THE SECONDARY SCHOOLS

(Class 3, Cr. 3)

Prerequisite: ENGL 104 or ENGL 103 or ENGL 108

Exploration of the theory, research and pedagogy supporting the teaching of literature at the secondary level. Topics include text selection, instructional strategies, adolescent literacy, student engagement and the use of alternative texts.

ENGL 501 METHODS OF LITERARY

(Class 3, Cr. 3)

Introduction to graduate studies in English with special emphasis on research and reference tools, methods of bibliography, and the writing of scholarly papers.

ENGL 502 PRACTICUM IN TEACHING COLLEGE COMPOSITION

(Cr. 1)

Reading professional literature, preparing syllabi, evaluating student papers, leading discussion. Required of all teaching assistants in their initial semester.

ENGL 503 THE THEORY AND PRACTICE OF TEACHING LITERATURE

(Class 3, Cr. 3)

Focusing on current theories, debates, and issues, this course will explore ideas regarding the teaching of literature that are a concern at all levels in the English Curriculum. Coursework will introduce students to questions and problems of the concept of canon, the integration of theory and practice, and of methodologies

that promote appreciation of literary works.

OFFERED AT CALUMET ONLY

ENGL 504 PRACTICUM IN THE TEACHING OF ENGLISH COMPOSITION I

(Class 3, Cr. 3)

Prepares new Graduate Aides in the Department of English and Philosophy to teach Freshman English. Orients new Graduate Aides to issues in college and provides practice in applications of those issues. This course is not, however, a part of master's degree requirement.

OFFERED AT CALUMET ONLY

ENGL 506 INTRODUCTION TO ENGLISH AND GENERAL LINGUISTICS

(Class 3, Cr. 3)

General study of language and linguistic theory with emphasis on English. Problems and methods in phonology, morphology, syntax, and semantics. Current techniques of linguistic analysis.

ENGL 510 HISTORY OF THE ENGLISH LANGUAGE

(Class 3, Cr. 3)

Prerequisite: ENGL 506 or AUSL 530

Introduction to theories of linguistic change and their application to the historical development of English from its beginnings.

ENGL 512 MODERN ENGLISH GRAMMAR

(Class 3, Cr. 3)

Prerequisite: ENGL 506 or AUSL 580

Introduction to English syntactic structure, syntactic argumentation, and syntactic theory. Emphasis on one current theory as primary theoretical framework, with other theories considered.

ENGL 531 THE RISE OF THE NOVEL

(Class 3, Cr. 3)

A study of the history of the emergent novel genre as it developed in 18th-century Britain and/or America.

ENGL 532 THE ENGLISH NOVEL IN THE NINETEENTH CENTURY

(Class 3, Cr. 3)

A survey of fiction up to about 1900, including such novelists as Scott, Dickens, Thackeray, the Brontes, Eliot, and Meredith.

ENGL 533 RENAISSANCE TEXTS/RENAISSANCE THEORY TO 1603

(Class 3, Cr. 3)

Nondramatic literature of the English Renaissance up to 1603, particularly the Elizabethan. Representative selections in both prose and verse are studied, with special attention to Spenser, Sidney, and Shakespeare.

ENGL 534 SEVENTEENTH-CENTURY LITERATURE

(Class 3, Cr. 3)

Nondramatic literature from 1603 to 1660. Particular emphasis upon such figures as Jonson, Donne, Marvell, and Herbert, with representative prose from Bacon, Browne, Burton, and others.

ENGL 536 LATER EIGHTEENTH CENTURY LITERATURE

(Class 3, Cr. 3)

A survey of nondramatic literature from 1744 to 1798, from Young through Gibbon and Cowper. Excludes the novel. Emphasizes Gray and his circle and Johnson and his circle.

ENGL 537 ENGLISH DRAMA TO 1642

(Class 3, Cr. 3)

A survey of the English drama from the beginning, through Marlowe and Jonson, to the closing of the theaters (excluding Shakespeare).

ENGL 540 STUDIES IN CHAUCER'S TROILUS AND CRISEYDE

(Class 3, Cr. 3)

Critical reading of Troilus and Criseyde and related works in Middle English, with attention to the literary and cultural background and to secondary studies.

ENGL 541 STUDIES IN CHAUCER'S CANTERBURY TALES

(Class 3, Cr. 3)

Critical reading of The Canterbury Tales and related works in Middle English, with attention to the literary and cultural background and to secondary studies.

ENGL 542 SHAKESPEARE'S DRAMATIC ART*(Class 3, Cr. 3)*

A study of the development of Shakespeare's comic art from the early comedies through the later comedies and tragi-comedies. Ten to 12 plays will be read.

ENGL 543 SHAKESPEARE IN CRITICAL PERSPECTIVE*(Class 3, Cr. 3)*

A study of the early and mature tragedies, the English histories, and the Roman plays. Ten to 12 plays will be read.

ENGL 544 MILTON*(Class 3, Cr. 3)*

A study of Milton's poetry and prose, with particular emphasis on *Paradise Lost* and some attention to the social, political, and literary background.

ENGL 547 THE ROMANTIC MOVEMENT IN ENGLISH LITERATURE*(Class 3, Cr. 3)*

Principal writers of the Romantic movement (Burns to Keats), emphasizing Wordsworth; relation of the historical background to the thought and feeling of the writers concerned.

ENGL 548 VICTORIAN LITERATURE*(Class 3, Cr. 3)*

A survey of English poetry and prose from about 1832 to 1880.

ENGL 549 LATE VICTORIAN AND EDWARDIAN LITERATURE*(Class 3, Cr. 3)*

A study of the rebellion against Victorian conventions which characterized the period from 1880 to 1910. Such movements as aestheticism, decadence, symbolism, and naturalism are examined in the works of Hardy, Yeats, Butler, Wilde, and others.

ENGL 554 AMERICAN LITERARY CULTURE, 1820-1860*(Class 3, Cr. 3)*

A survey of American literature from about 1820 to 1855, concluding with Melville.

ENGL 556 NINETEENTH-CENTURY AMERICAN FICTION*(Class 3, Cr. 3)*

Surveys the development of American fiction from its beginnings. Though representative works of all periods will be read, emphasis will be given to Hawthorne, Melville, Twain, and James.

ENGL 558 THE RISE OF REALISM IN AMERICAN LITERATURE*(Class 3, Cr. 3)*

A survey of American literature from about 1855 to 1900, beginning with Whitman and ending with James and the early naturalists.

ENGL 577 MODERN ENGLISH AND AMERICAN POETRY*(Class 3, Cr. 3)*

Surveys modern poetry from Hardy to Auden; relates it to the main currents of contemporary thought and feelings; introduces elementary critical principles.

ENGL 578 MODERN AMERICAN FICTION*(Class 3, Cr. 3)*

Critical study of twentieth-century novels and short stories, mainly before World War II, by writers such as Anderson, Dreiser, Fitzgerald, Hemingway, Dos Passos, and Faulkner.

ENGL 579 MODERN BRITISH FICTION*(Class 3, Cr. 3)*

Critical study of twentieth-century novels and short stories by such writers as Conrad, Lawrence, and Forster. Special attention is given to James Joyce's *Ulysses*.

ENGL 580 LITERATURE AND MODERN THOUGHT*(Class 3, Cr. 3)*

Readings in literature, philosophy, and social criticism, concentrated on the political, industrial, and scientific revolutions that have molded modern life and thought.

ENGL 581 PROBLEMS IN MODERN LITERATURE*(Class 3, Cr. 3)*

Chief ethical systems. Novels written by writers with contrasting ethical assumptions. Ethical problems considered both abstractly and concretely.

ENGL 584 LITERATURE AND PSYCHOLOGICAL PROBLEMS*(Class 3, Cr. 3)*

Novels, stories, plays, and other types of literature dealing with important psychological problems, to show how great imaginative writers have treated problems of human relationship with which contemporary psychology is concerned.

ENGL 589 DIRECTED WRITING*(Class 0 to 3, Cr. 1 to 3)*

Writing creative, popularly technical, biographical, historical, philosophical papers on subjects of the students choice. Individual conferences only; no class meetings.

ENGL 590 DIRECTED READING*(Class 0 to 3, Cr. 1 to 3)*

Directs the reading of students with special interests. Guides students in profitable reading in subjects of their own choice. Individual conferences only; no class meetings.

ENGL 593 CONTEMPORARY BRITISH FICTION*(Class 3, Cr. 3)*

Critical study of the British novel since World War II. Survey of scholarship and criticism. Examinations and critical papers.

ENGL 595 CONTEMPORARY AMERICAN FICTION*(Class 3, Cr. 3)*

Study of fiction of the past two or three decades as it relates to American literary traditions and thought. Survey of scholarship and criticism. Examinations and critical papers.

ENGL 596 ADVANCED STUDIES IN LITERATURE AND LANGUAGE*(Class 3, Cr. 3)*

A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls. Emphasis on critical analysis, scholarly techniques, and secondary materials.

ENGL 602 INTRODUCTION TO LITERARY METHODS*(Class 3, Cr. 3)*

Introduction to the methods of literary study, including investigation of significant critical modes, bibliographic techniques, and research paper writing.

ENGL 691 SEMINAR IN THE ENGLISH LANGUAGE ARTS*(Class 3, Cr. 3)*

Problems in the teaching of English: literature, language, rhetoric. Attention to recent scholarship and to its application in the public schools.

ENGL 696 SEMINAR IN LITERATURE*(Cr. 3)*

Advanced study of special subjects.

ENGL 698 RESEARCH MA/MFA THESIS*(Class 1 to 18, Cr. 1 to 18)*

Engineering

ENGR 151 SOFTWARE TOOLS FOR ENGINEERS*(Class 2, Lab. 2, Cr. 3)**Prerequisite: MA 159*

Introduction to MATLAB and engineering problem solving, with MATLAB. Students will be introduced to arrays rational and logical operations, control flow of sequence, selection and repetition, function definition, 2-D and 3-D graphics, data analysis, Graphical User Interface (GUI) development, and Simulink.

ENGR 152 PROGRAMMING FOR ENGINEERS*(Class 2, Lab. 2, Cr. 3)**Prerequisite: ENGR 151 with a C or better*

Introductory C programming course. Students will be introduced to basic syntax, standard mathematics library, control structures, user-defined functions, arrays, pointers, structures, and file I/Os. Laboratory exercises will accelerate learning of fundamental materials through supervised practice.

ENGR 186 FIRST YEAR SEMINAR FOR ENGINEERS*(Class 1, Cr. 1)*

The course will provide the foundations for students enabling them to: learn to succeed, work together in teams, understand the field chosen for study and orient them to university life and environs.

ENGR 190 ELEMENTARY ENGINEERING DESIGN*(Class 1, Lab. 3, Cr. 2)**Prerequisite: MA 159*

An introduction to engineering design.

ENGR 195 FIRST-YEAR ENGINEERING TOPICS*(Class 1 to 3, Lab. 0 to 6, Cr. 1 to 3)*

Topics vary

Entrepreneurship

ENR 100 INTRODUCTION TO ENTREPRENEURSHIP

(Class 3, Cr. 3)

Basic business skills are surveyed and case studies of successful entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for entrepreneurs.

ENR 101 ENTREPRENEURSHIP IN ARTS & DESIGN

(Class 3, Cr. 3)

Basic business skills are surveyed and case studies of successful self-employed artists and entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for converting artistic & design skills into self-employment and entrepreneurship.

ENR 300 SMALL BUSINESS MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: ENR 100 or MGMT 101

This course examines entrepreneurial opportunities through franchises, franchise options, start-ups, buyouts, and family business opportunities. The course stresses market planning, management of teams and organizations, location of sites, accounting and financial concerns. Topics will include product strategy, loyalty issues, pricing, promotion and distribution, quality, evaluating performance, and exit strategies.

ENR 301 INTRODUCTION TO TECHNICAL ENTREPRENEURSHIP

(Class 3, Cr. 3)

Basic business skills are surveyed and case studies of successful entrepreneurs in high-tech businesses and will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for promoting the growth of technical entrepreneurship.

ENR 400 SMALL BUSINESS CONSULTANT

(Class 3, Cr. 3)

Prerequisite: MGMT 310 or BA 210 and MGMT 360 or BA 361 and MGMT 324 or MGMT 224 and OBHR 330

Student consultant teams are assigned to individual, local, client companies to look at, study, and analyze one or more of their existing business problems or challenges. Each consultant team, with the active involvement and help of the instructor, will conduct the consulting assignment and submit a final report by the end of the semester. Consulting teams will also make a live presentation to the client.

ENR 420 BUSINESS PLAN DEVELOPMENT

(Class 3, Cr. 3)

Prerequisite: ENR 100 and BA 120 or MGMT 200

The components of a business plan are analyzed. The focus is on the research, preparation, and presentation of the plan in a critical environment. Major components are marketing analysis, financial calculations and the applications of sound managerial principles. Public and private resources are available to fund new start-ups, expansions, and acquisitions will be explored and perform statements will be constructed.

Equine Management

EQU 100 INTRODUCTION TO EQUINE MANAGEMENT

(Class 3, Cr. 3)

The course provides an introduction to the various facets of the equine industry and discusses their impact on state and national economies. Topics include but are not limited to equine sports and disciplines, career opportunities, national organizations and governing bodies, international equine operations and equine economics contributions.

EQU 200 SOFTWARE FOR EQUINE OPERATIONS

(Class 3, Cr. 3)

Prerequisite: MGMT 102

Microsoft Office is used to create business newsletters and databases. Hands-on experience using various equine software packages and creation of a business web site.

EQU 220 GLOBAL PERSPECTIVE OF EQUINE INDUSTRY

(Class 3, Cr. 3)

A study of the global scope of the equine industry and the economic, political and social forces influencing growth. Attention will be given to the effects of changing political systems, regulation, taxation, exchange rates, global competition, demographics and other forces.

EQU 300 EQUINE INTERNSHIP

(Class 3, Cr. 3) Experiential Learning

Prerequisite: EQU 100

Students will work in an equine management environment in an organized and supervised situation designed to provide experience and challenges in a management situation.

EQU 320 EQUINE TAXATION

(Class 3, Cr. 3)

Prerequisite: EQU 220

The focus of the course is on federal income tax laws and their impact on the equine operations. Business and hobby issues will be addressed by analyzing cases applying the nine regulations and factors determining the issue. Also addressed are forms of business, methods of accounting, state and foreign taxes as they are forms of business, methods of accounting, state and foreign taxes as they affect equine operations.

EQU 330 EQUINE SPORT FACILITIES MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: EQU 220

Introduction to the organizational structure and human resources and people required to reach enterprise objectives whether that be a horse show, breeding farm, race track, or horseman organization. The course will also focus on human resource management issues.

EQU 340 EQUINE ETHICAL ISSUES

(Class 3, Cr. 3)

This course provides an introduction to ethical issues in the equine industry.

EQU 350 EQUINE OPERATIONS

(Class 3, Cr. 3)

Prerequisite: MGMT 200

Introduction to quantitative methods combining accounting with budgeting, spreadsheets, risk analysis, and business plans. Equine industry related problem solving incorporating research techniques, data collection, quantitative analysis and decision making.

EQU 370 EQUINE INTERNATIONAL SALES AND MARKETING

(Class 3, Cr. 3)

Prerequisite: EQU 220

Marketing principles applied to the equine industry. An overview of equine industry structure, market development programs, market competition, pari-mutual racing, and an introduction to market research for equine organizations.

EQU 400 EQUINE LEGAL ISSUES

(Class 3, Cr. 3)

Prerequisite: EQU 350

An introduction to the legal aspects of the equine industry, to include an overview of commercial transactions, such as public and private sales of horses, stallion syndicate agreements, stallion service contracts, training agreements, boarding contracts, and applications of UCC code to equine industry.

EQU 420 HORSE RACING AND GAMING SYSTEMS

(Class 3, Cr. 3)

The study of the economics of casino gaming lottery stems and pari-mutuel wagering. Emphasis will be placed on factors affecting wagering and gaming, including product pricing, quality, competition, profits, and marketing strategy.

EQU 450 EQUINE SENIOR PROJECT

(Cr. 3) Experiential Learning

Prerequisite: EQU 400

This course requires students to combine their experience in an internship with their coursework to produce a 3 year business plan for an equine operation.

EQU 480 HORSE SHOW PROJECT MANAGEMENT

(Cr. 3)

Prerequisite: EQU 350

This course covers basic project management skills applied to horse shows and includes scheduling, resource allocation, budgeting, and reporting to regulatory agencies.

Engineering Technology

ET 100 INTRODUCTION TO ENGINEERING TECHNOLOGY

(Lab. 2 to 3, Cr. 1)

This course will introduce engineering technology students to resources and skills that will help them to be successful in their studies and ultimately in their careers. This course will help students explore engineering technology by introducing campus, regional and national resources such as professional societies in their chosen fields. It will also help students improve in areas important to becoming better students. These areas may include topics such as planning academic careers, mentoring, improving study skills, goal setting, and utilization of library resources. In addition, the courses will focus on specific introductory concepts important to engineering technology students such as using campus computer resources and the TAC of ABET outcomes.

ET 151 INTERNSHIP PROGRAM I

(1 to 3 Cr.) Experiential Learning

Prerequisite: Permission of instructor

A practicum designed to combine University study with work experience directly related to the student's plan of study.

ET 252 INTERNSHIP PROGRAM II

(1 to 3 Cr.) Experiential Learning

Prerequisite: ET 151

A practicum designed to combine University study with work experience directly related to the student's plan of study.

ET 300 INDUSTRIAL PRACTICE II

Cooperative Education experience

ET 350 INDUSTRIAL PRACTICE III

Cooperative Education experience

ET 353 INTERNSHIP PROGRAM III

(1 to 3 Cr.) Experiential Learning

Prerequisite: ET 252

A practicum designed to combine University study with work experience directly related to the student's plan of study.

ET 400 INDUSTRIAL PRACTICE IV

Cooperative Education experience

ET 450 INDUSTRIAL PRACTICE V

Cooperative Education experience

ET 454 INTERNSHIP PROGRAM III

(1 to 3 Cr.) Experiential Learning

Prerequisite: ET 353

A practicum designed to combine University study with work experience directly related to the student's plan of study.

ET 495 SENIOR PROJECT SURVEY

(Class 1, Cr. 1)

Students will consider several projects and develop a topic for the following ET/MFET 497 course. They will develop project scope, establish time schedules, and give a written and oral report on their proposal.

ET 497 SENIOR PROJECT

(Class 1, Lab. 4, Cr. 3)

This course is intended as a capstone to the manufacturing engineering technology program. The focus is to have the student consolidate previously acquired information and knowledge in a final project.

Ethnic Studies

ETHN 100 INTRODUCTION TO ETHNIC STUDIES

(Class 3, Cr. 3)

The course provides students with general knowledge about racial and ethnic history, identity, and experience in the United States.

ETHN 201 THE HISPANIC AMERICAN EXPERIENCE

(Class 3, Cr. 3)

Dimensions of the Hispanic American experience, including history, education, politics, psychology, economics, religion, social organization, and art are covered in the course.

ETHN 202 THE AFRICAN AMERICAN EXPERIENCE

(Class 3, Cr. 3)

Dimensions of the African American experience, including history, education, politics, psychology, economics, religion, social organization, and art are covered in the course.

ETHN 313 AFRICAN AMERICAN WOMEN FICTION

(Class 3, Cr. 3)

This course examines fiction by African American women during the last century, emphasizing literary, cultural, and political aspects of the writing. The intersection of gender, race, class, and sexuality emerge as dominant issues within the fiction and the course as well. Both novels and short stories are explored.

ETHN 340 LITERATURE BY WOMEN OF COLOR

(Class 3, Cr. 3)

This course focuses on literature written in English by women of color living in the United States. Writers included are of African American, Native American, Asian American, and Latino/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness of these women's literary contributions. ETHN 340 examines some of the cultural differences among these groups, as reflected in the literature. The course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures.

ETHN 390 TOPICS IN ETHNIC STUDIES

(Cr. 1 to 6)

Variable titles.

ETHN 390A THE CULTURAL INFLUENCES OF HIP-HOP ON AMERICAN SOCIETY

(Class 3, Cr. 3)

The course will examine Hip-Hop as a cultural movement that began among urban youth in New York and has since spread around the world. This cultural movement will be examined not as a mode of entertainment, but as a medium of communication which impacts, represents, and misrepresents the life experiences of youth in the United States. This course will examine the impact of the music of such Hip-Hop artists as Public Enemy, Run DMC, 2PAC, Notorious B.I.G., and Kurtis Blow.

ETHN 475 ETHNIC IDENTITY IN FILM

(Class 3, Cr. 3)

Prerequisite: COM 214 or ETHN 100

Ethnic Identity in Film explores the construction of American ethnicity in mainstream American films. By examining films that reflect a particular ethnic sensibility and created by an individual of that particular ethnicity, this course will explore ethnic values and traditions.

Foods and Nutrition

F&N 105 CURRENT ISSUES IN NUTRITION AND FOOD SAFETY

(Class 1, Cr. 1)

Analysis of current nutrition controversies and food safety concerns. This course does not satisfy the Nutrition competency for Nursing or HTM majors.

F&N 120 NUTRITION FOR A HEALTHY LIFESTYLE

(Class 1, Cr. 1)

Basic understanding of nutrition guidelines and lifestyle risk factors related to diet. Assessment of the individual's diet and related behaviors. Solutions to every day nutrition problems that lead to lifestyle enhancements are presented. This course does not meet nutrition competency requirement for Nursing, Early Childhood Education or HTM majors.

F&N 121 VEGETARIAN NUTRITION

(Class 1, Cr. 1)

COURSE DOES NOT MEET NUTRITION COMPETENCY REQUIREMENT FOR NURSING, EARLY CHILDHOOD EDUCATION OR HOSPITALITY AND TOURISM MANAGEMENT MAJORS.

Issues to review when considering adoption of a Vegetarian Diet. Nutrition guidelines and risk factors related to vegetarianism are addressed. Various types of vegetarian diets and the benefits/risks each pose are discussed.

F&N 203 FOODS: THEIR SELECTION AND PREPARATION

(Class 2, Lab. 3, Cr. 3)

Principles of food selection, preparation, and meal planning.

F&N 205 FOOD SCIENCE I

(Class 1, Lab. 5, Cr. 3)

Prerequisite: CHM 111 or CHM 112

Chemical and physical composition of foods: their changes during processing, storage and preparation.

F&N 208 NUTRITION IN WOMEN'S HEALTH

(Class 3, Cr. 3)

(Course does not meet nutrition competency requirements for Nursing, Early Childhood Education, or Hospitality and Tourism Management Majors. Not open to students with credit in WOST 208.)

Exploration of women's health issues with emphasis on Nutrition. Review of current research in normal and preventative nutrition throughout the life cycle. Focus on women as individuals and on those who counsel and educate women.

F&N 260 NUTRITION FOR EARLY CHILDHOOD EDUCATORS

(Class 3, Cr. 3)

(This course does not satisfy the nutrition competency for Nursing or HTM majors.)

Study of the basic principles of food and nutrition from pregnancy through the primary years and methods to achieve good nutritional status. Special emphasis on nutrition education, legislation, and regulation in pre-school and elementary classrooms (grades K-3).

F&N 261 NUTRITION FOR HEALTH, FITNESS, AND SPORTS

(Class 2, Lab. 2, Cr. 3)

(This course does not satisfy the Nutrition competency for Nursing or HTM majors.)

Study of the relationship between physical fitness/sports activity and nutrition resulting in optimum health. Special emphasis on nutritional demands during exercise or sports activities. Laboratory experience in the Fitness Center required.

F&N 303 ESSENTIALS OF NUTRITION

(Class 3, Cr. 3) *TRANSFER IN*

Basic nutrition and its application in meeting nutritional needs of all ages.

F&N 315 FUNDAMENTALS OF NUTRITION

(Class 3, Cr. 3)

Prerequisite: CHM 251 and CHM 252 and BIOL 214

Basic principles of nutrition and their applications in meeting nutritional needs during the life cycle.

F&N 322 COMMUNITY NUTRITION & HEALTH PROMOTION ENTREPRENEURSHIP

(Class 2, Cr. 2)

Prerequisite: F&N 303 or F&N 260

Study of strategies for improving nutritional status and community health. Examination of principles of entrepreneurship and application to the practice of community nutrition. Includes reviews of existing federal and non-governmental programs designed to meet food and nutrition needs of various population groups.

F&N 330 DIET SELECTION AND PLANNING

(Class 3, Cr. 3)

Prerequisite: F&N 203 or F&N 205 and F&N 303 or F&N 315

Diet selection for health maintenance in culturally diverse populations based on current dietary guides with utilization of the computer for diet evaluation.

F&N 360 NUTRITION FOR THE AGING

(Class 3, Cr. 3)

(This course does not satisfy the Nutrition competency for Nursing or HTM majors.)

Nutritional needs and problems of the aging. Includes a review of community and institutional nutrition and food programs. Emphasis on the aging and their environment. Participation in community activities for the aging may be required.

F&N 390 INDEPENDENT UNDERGRADUATE RESEARCH

(Class 1 to 3, Lab. 1 to 3, Cr. 1 to 3)

(Repeatable to a maximum of 6 credits. Credit and hours arranged. Prerequisites: Classification 5 and consent of instructor.)

Individual research projects undertaken with faculty supervision and covering various aspects of nutrition.

F&N 542 AP4 FIELD EXPERIENCE IN NUTRITION

(Class 2 to 5, Cr. 2 to 5)

Prerequisite: Admission to the AP4 Program. Clinical 20-40. Clinical experience of at least 450 hours in an approved health care or other appropriate facility in the area of nutritional care management.

Emphasis on application of nutritional principles and patient/client education and counseling under the direction of a registered dietitian. Clinical experience ultimately to include total staff responsibility as a dietitian in nutritional care. Satisfactory/Unsatisfactory.

F&N 543 AP4 FIELD EXPERIENCE IN INSTITUTIONAL MANAGEMENT

(Class 1, Cr. 2 to 5)

Prerequisite: Admission to the AP4 Program. Clinical 20-40. Clinical experience of at least 450 hours in an approved health care or other appropriate facility in the area of institutional food service systems

Management principles applied to human resources and food service systems under the direction of a registered dietitian. Clinical experience ultimately to include total staff responsibility as a dietitian in institutional management. Satisfactory/Unsatisfactory.

F&N 590 SPECIAL PROBLEMS IN NUTRITION

(Cr. 1 to 4)

Credit and hours to be arranged. Prerequisite: Admission by consent of Instructor. Individual problems dealing with various aspects of nutrition.

Foreign Languages and Literatures

FLL 103 FRESHMAN EXPERIENCE WORLDVIEWS

(Class 1, Cr. 1)

This course would include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline specific career exploration and critical thinking relative to the study of foreign languages and literature.

FLL 190 SPECIAL TOPICS

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

Special topics related to world languages, cultures and literatures. Variable title. This course may be repeated for credit, providing the topic is different.

FLL 290 SPECIAL TOPICS

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

Special topics related to world languages, cultures, and literature. Variable title. This course may be repeated for credit, providing topics are different.

FLL 390 SPECIAL TOPICS

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

Special topics related to world languages, cultures, and literatures. Variable title. This course may be repeated for credit, providing topics are different.

FLL 464 COMPARATIVE STUDY OF MODERN LANGUAGES

(Class 3, Cr. 3)

An examination of French, German and Spanish phonology, syntax and morphology. Representative presentations of historical and contemporary descriptive considerations of these languages.

FLL 490 SPECIAL TOPICS

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

Special topics related to world languages, culture, and literatures. Variable title. This course may be repeated for credit, providing topics are different.

Fitness Management

FM 100 INDIVIDUALIZED WELLNESS STRATEGIES

(Lab. 2, Cr. 1)

This course is repeatable for credit. The course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 101 CARDIOVASCULAR EXERCISE MACHINES

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 102 WEIGHT TRAINING

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 103 WALKING/JOGGING

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 104 PHYSICAL FITNESS

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 105 YOGA

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 106 RACQUETBALL

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 107 BASIC SELF DEFENSE

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 108 CIRCUIT TRAINING

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 109 SPINNING

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 110 INLINE SKATING

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 111 SWIMMING

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life.

FM 112 AIKIDO

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 113 TIA CHI

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 114 PILATES

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 115 SCUBA DIVING

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present fitness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 116 WING CHUN

(Lab. 2, Cr. 1)

This course is repeatable for credit. This course will provide students with a working knowledge of healthy living practices an assessment of the students' present fitness status and an opportunity to choose a physical activity as well as develop additional wellness strategies that can be enjoyed throughout life.

FM 219 ISSUES AND PROBLEMS IN HEALTH

(Class 3, Cr. 3)

Designed to acquaint students with various aspects of personal and community health problems. Emphasis will be on current health issues such as pollution, mental health, venereal disease, aging, medical care, etc.

FM 250 PRINCIPLES OF ADULT FITNESS

(Class 2, Lab. 2, Cr. 3)

The purpose of this course is to expose students to the effects of exercise on health over the life course. The health benefits of different types of exercise will be reviewed. Students will have the opportunity to utilize fitness equipment and develop their own exercise plans. Existing community programs and resources will be discussed.

FM 268 PHYSIOLOGY OF EXERCISE

(Class 2, Lab. 2, Cr. 3)

Prerequisite: CHM 119 and BIOL 214 Co-requisite: F&N 303

Physiological concepts and principles underlying human responses and adaptations to exercise. Selected methods and techniques of assessing physiological function and evaluating performance in physical efforts in a laboratory setting.

FM 280 PRINCIPLES OF FIRST AID

(Class 1, Lab. 2, Cr. 2) TRANSFER IN

A course designed to instruct students in the immediate and temporary care given victims of an accident or illness. Covers dressings, bandaging, CPR, lacerations, insect and animal bites and other first aid topics. Certification Included.

FM 300 PRACTICUM IN HEALTH, FITNESS AND NUTRITION

(Class 1, Lab. 4, Cr. 3) *Experiential Learning*

Prerequisite: F&N 303 or FM 315 and FM 268

Limited to students enrolled in Nutrition, Fitness & Health degree. Classification 4 or higher. Clinical field experience of at least 300 hours in an approved health, fitness, and/or nutrition facility under the direction of a certified or registered instructor.

The on-campus Total Fitness Center and their degreed/ professional staff is the primary site for this practicum.

FM 301 RECREATION LEADERSHIP

(Class 3, Cr. 3)

Provides instruction in various aspects of recreation. Community, school, camping, travel and leisure time activities will be part of the instruction. Identification of the principles of recreation and the many organizations promoting recreational activities are included.

FM 302 ANATOMY AND KINESIOLOGY

(Class 3, Cr. 3)

Prerequisite: BIOL 213 and BIOL 214

Overview of human body structures and functions appropriate for exercise science. Emphasis on musculoskeletal and neuromuscular systems as they relate to human movement.

FM 305 PRACTICUM IN FITNESS MANAGEMENT

(Class 1, Lab. 4, Cr. 3) *Experiential Learning*

Prerequisite: FM 300 and FM 410 and FM 474 *Limited to students enrolled in the Fitness Management degree, Classification 8.*

Advanced level clinical field experience in fitness management facility. At least 300 hours in an approved health and/or nutrition facility under the direction of a certified or registered instructor. An off-campus facility or club and their managerial/ professional staff is the primary site for this practicum.

FM 314 BEGINNING CONCEPTS OF GROUP EXERCISE AND PERSONAL TRAINING

(Class 1, Lab. 2, Cr. 2)

Prerequisite: FM 268 and FM 302

Instruction and laboratory experience in group exercise and personal training. Designed for Nutrition, Fitness, and Health majors or Fitness Management majors with an interest in group exercise and personal training careers. Includes basic competencies/skills leading to certification as a personal trainer and/or group exercise instructor.

FM 320 PHYSICAL GROWTH THROUGHOUT THE LIFE SPAN

(Class 2, Cr. 2)

Prerequisite: FM 268 and FM 302

Designed to acquaint fitness and health professionals with the physical growth and development of individuals throughout the life span. Includes factors relating to movement, behavior, learning, motor skills, and nutrition.

FM 375 SPORT-RELATED TOURISM AND LEISURE MANAGEMENT

(Class 3, Cr. 3)

NOT OPEN TO STUDENTS WITH CREDIT IN HTM 375

Integration of Sport and Tourism disciplines. Sport participation and spectator travel, hard and soft adventure tourism, and management of leisure time are emphasized. Focus on the dynamics behind the explosion in Sport and Adventure Tourism.

FM 390 UNDERGRADUATE SPECIAL PROBLEMS

(Class 0 to 6, Lab. 2 to 4, Cr. 0 to 6)

Optional lab 2-4. Repeatable to a maximum of 6 credits. Credit and Hours arranged. Open to Fitness Majors only or by consent of Instructor. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas of the field of fitness management.

FM 410 EVALUATION, TESTING AND ASSESSMENT OF EXERCISE

(Class 2, Lab. 2, Cr. 3)

Prerequisite: FM 268 and FM 300 and FM 302

Instruction and laboratory experience in the scientific evaluation, testing and assessment of exercise. Includes data collection, analysis and statistical applications. Oriented toward interpreting test data and applying it toward the design of individual exercise programs.

FM 474 PHYSIOLOGY OF EXERCISE II

(Class 1, Lab. 2, Cr. 2)

Prerequisite: FM 268 and FM 302 and FM 410

Advanced level exercise physiology course exploring physiological concepts and principles assessing physiological function and evaluating performance in physical efforts in a laboratory setting. Includes integration of metabolic, cardiovascular, respiratory, endocrinological and biochemical functions of the human body in response to exercise.

French

FR 101 FRENCH LEVEL I

(Class 3, Lab. 1, Cr. 3) *TRANSFER IN*

Introduction to French.

FR 102 FRENCH LEVEL II

(Class 3, Lab. 1, Cr. 3) *TRANSFER IN*

Prerequisite: FR 101

Continuation of FR 101.

FR 190 SPECIAL TOPICS IN FRENCH

(Class 0 to 3, Lab. 0 to 6, Cr. 1 to 3)

Special topics related to French and to francophone cultures and literatures. Variable title This course may be repeated for credit, providing topics are different.

FR 201 FRENCH LEVEL III

(Class 3, Lab. 1, Cr. 3) *Experiential Learning**

Prerequisite: FR 102

A conversational approach to the culture of France with a review of French language skills as needed. *Note: Only sections taken abroad meet the experiential learning requirement.

FR 202 FRENCH LEVEL IV

(Class 3, Lab. 1, Cr. 3) *TRANSFER IN; Experiential Learning**

Prerequisite: FR 201

Continuation of FR 201 and the presentation of intellectual readings. *Note: Only sections taken abroad meet the experiential learning requirement.

FR 230 FRENCH LITERATURE IN TRANSLATION

(Class 3, Cr. 3) *TRANSFER IN*

Reading and analysis of major French writers of the modern period with particular emphasis on the evolution of literary genres in relation to cultural, political, and social trends. Knowledge of French not required.

FR 261 FRENCH COMPOSITION

(Class 3, Cr. 3) *Experiential Learning**

Prerequisite: FR 202

The essentials of French grammar as applied in composition.

*Note: Only sections taken abroad meet the experiential learning requirement.

FR 290 SPECIAL TOPICS IN FRENCH

(Class 0 to 3, Lab. 0 to 6, Cr. 1 to 3)

Special topics related to French and to francophone cultures and literatures. Variable title. This course may be repeated for credit, providing the topics are different.

FR 307 COMMERCIAL FRENCH

(Class 3, Cr. 3)

Prerequisite: FR 202

This course will provide students with the fundamentals of effective expression and communication as these apply to French business situations. It will concentrate on commercial vocabulary, reading, writing and speaking as related to international business.

FR 350 HISTORY AND CULTURE OF FRENCH CUISINES

(Class 3, Cr. 3)

(In English)

This is a study of the historical and cultural development of French cuisine as it evolved to its present status.

FR 365 FRENCH CONVERSATION

(Class 3, Cr. 3)

Prerequisite: FR 202

Intensive practice in French conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Introduction to basic phonetics and practice in pronunciation.

FR 390 SPECIAL TOPICS IN FRENCH

(Class 0 to 3, Lab. 0 to 6, Cr. 1 to 3)

Special topics related to French and to francophone cultures and literatures. Variable title. This course may be repeated for credit, providing topics are different.

FR 405 INTRODUCTION TO FRENCH LITERATURE I

(Class 3, Cr. 3)

Prerequisite: FR 202

Introduction to the periods of French literature from the beginning through the eighteenth century. Reading and discussion of representative works. The rudiments of literary criticism.

FR 406 INTRODUCTION TO FRENCH LITERATURE II

(Class 3, Cr. 3)

Prerequisite: FR 202

Introduction to the periods of French literature from the late eighteenth century to the present time. Reading and discussion of representative works. The rudiments of literary criticism.

FR 408 LANGUAGE PRACTICUM IN BUSINESS

(Cr. 3)

Prerequisite: FR 261 and FR 307 and FR 365

The course will consist of on-the-job experience in international corporations, industry, commerce, government, or health and social agencies where French is used. The course is designed to expose students to their chosen vocational field.

FR 450 FRENCH CIVILIZATION

(Class 3, Cr. 3)

The study of modern French life with emphasis on the customs and daily life of the people. Lectures in the language.

FR 461 INTERMEDIATE FRENCH COMPOSITION

(Class 3, Cr. 3) *Experiential Learning**

Prerequisite: FR 261

A continuation of FR 261. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary. Note: Only sections taken abroad meet the experiential learning requirement

FR 465 INTERMEDIATE FRENCH CONVERSATION

(Class 3, Cr. 3)

Prerequisite: FR 365

Continued and more advanced practice in French conversation and study of phonetics for accuracy in pronunciation and intonation. Students are encouraged to study contemporary French culture as a basis for their conversations.

FR 490 TOPICS IN FRENCH

(Class 3, Cr. 3) *Experiential Learning**

Prerequisite: FR 202

Variable title.

*Note: Only sections taken abroad meet the experiential learning requirement.

FR 511 ADVANCED FRENCH CONVERSATION

(Class 3, Cr. 3)

Prerequisite: FR 465

Additional practice in speaking and understanding French. Talks based on material given in class.

FR 515 ADVANCED FRENCH COMPOSITION

(Class 3, Cr. 3) *Experiential Learning**

Prerequisite: FR 261

Additional training in writing French.

*Note: Only sections taken abroad meet the experiential learning requirement

FR 542 THE CLASSICAL AGE

(Class 3, Cr. 3)

Prerequisite: FR 405

The social background and the formation of classical traits of seventeenth century in France. Readings from Corneille, Racine, Moliere and minor authors.

FR 555 CONTEMPORARY FRENCH THEATRE

(Class 3, Cr. 3)

Prerequisite: FR 406

Readings and discussion of works in the twentieth-century theatre: Cocteau, Giraudoux, Montherlant, Claudel, Sartre, Camus, Anouilh, Ionesco, Beckett, Genet.

FR 558 FRENCH NOVEL OF THE TWENTIETH CENTURY

(Class 3, Lab. 1, Cr. 3)

Prerequisite: FR 406

Contemporary novel as an insight into twentieth-century French life. Analysis of works by selected authors.

FR 581 FRENCH CULTURE

(Class 3, Cr. 3)

Development of the cultural life of the French people as reflected in architecture, art, history, literature, music, and philosophy. Lectures in French.

FR 590 DIRECTED READING IN FRENCH

(Class 1 to 4, Cr. 1 to 4)

Admission by consent of the chairperson for French courses. May be repeated for credit.

Geography

GEOG 305 AMERICAN HISTORY TO 1877

(Class 3, Cr. 3)

Prerequisite: EAS 110 or EAS 220 or HIST 110 or HIST 151 or HIST 152

This class addresses general topics in the discipline of Geography. It seeks to educate students so that they can consider the spatial dimensions of historical, political, economic, and social themes and problems. In addition, the course seeks to develop the general skills of the discipline especially those related to cartography. Students receiving credit for this as a GEOG class may not also receive credit as HIST class and vice versa.

German

GER 101 GERMAN LEVEL I

(Class 3, Lab. 1, Cr. 3)

Introduction to German.

GER 102 GERMAN LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: GER 101

Continuation of GER 101.

GER 201 GERMAN LEVEL III

(Class 3, Lab. 1, Cr. 3)

Prerequisite: GER 102

A conversational approach to the culture of Germany with a review of German language skills as needed.

GER 202 GERMAN LEVEL IV

(Class 3, Lab. 1, Cr. 3)

Prerequisite: GER 201

A continuation of GER 201 and the presentation of intellectual readings.

GER 230 GERMAN LITERATURE IN TRANSLATION

(Class 3, Cr. 3)

Reading and analysis of selected German writers and their works with particular emphasis on the social, political, and intellectual climate of the times. The course content will change from semester to semester. Knowledge of German not required.

GER 244 FOURTH COURSE IN SCIENTIFIC GERMAN

(Class 3, Cr. 3)

Prerequisite: GER 201

Credit will not be given for both GER 202 and 244.

GER 261 GERMAN COMPOSITION

(Class 3, Cr. 3)

Prerequisite: GER 202

The essentials of German grammar as applied in composition.

GER 307 COMMERCIAL GERMAN

(Class 3, Cr. 3)

Prerequisite: GER 202

This course will provide students with the fundamentals of effective expression and communication as these apply to German business situations in particular. It will concentrate on commercial vocabulary, reading, writing, and speaking as related to international business.

GER 365 GERMAN CONVERSATION

(Class 3, Cr. 3)

Prerequisite: GER 202

(May be taken concurrently with GER 202 with instructor approval.)

Intensive practice in German conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Introduction to basic phonetics and practice in pronunciation.

GER 405 INTRODUCTION TO GERMAN LITERATURE I

(Class 3, Cr. 3)

Prerequisite: GER 202

Survey of German literature from the beginning through the eighteenth century. Reading and discussion of representative works and the fundamentals of literary criticism.

GER 406 INTRODUCTION TO GERMAN LITERATURE II

(Class 3, Cr. 3)

Prerequisite: GER 202

A continuation of GER 405 covering the basic German literature survey from the eighteenth century to the present time.

GER 408 LANGUAGE PRACTICUM IN BUSINESS

(Cr. 3)

Prerequisite: GER 261 and GER 307 and GER 365

The course will consist of actual on-the-job experience in international corporations, industry, commerce or government where German is used. The course is designed to expose students to their chosen vocational field.

GER 450 GERMAN CIVILIZATION

(Class 3, Cr. 3)

Prerequisite: GER 202

The study of modern German life with emphasis on the customs and daily life of the people. Lectures in the language.

GER 461 INTERMEDIATE GERMAN COMPOSITION

(Class 3, Cr. 3)

Prerequisite: GER 261

A continuation of GER 261. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary.

GER 465 INTERMEDIATE GERMAN CONVERSATION

(Class 3, Cr. 3)

Prerequisite: GER 365

Continued and more advanced practice in German conversation and the study of phonetics for accuracy in pronunciation and intonation. Students are encouraged to study contemporary German culture as a basis for their conversations.

GER 490 TOPICS IN GERMAN

(Class 3, Cr. 3)

Prerequisite: GER 202 Variable title. (May be repeated for credit.)

GER 511 ADVANCED GERMAN CONVERSATION

(Class 3, Cr. 3)

Prerequisite: GER 465

Additional practice in speaking and understanding German. Talks based on material given in class.

GER 515 ADVANCED GERMAN COMPOSITION

(Class 3, Cr. 3)

Prerequisite: GER 261

Additional training in writing German.

GER 545 GERMAN PROSE FROM NATURALISM TO THE PRESENT

(Class 3, Cr. 3)

Prerequisite: GER 406

Development of the novel and short story of the period with special emphasis on the major authors.

GER 546 GERMAN LITERATURE SINCE 1945

(Class 3, Cr. 3)

Prerequisite: GER 406

Major literary movements and tendencies in Germany, Austria, and Switzerland since 1945. Involves the close reading of literary texts, investigation of major problems addressed by literary criticism, and discussion of historical context.

GER 555 GERMAN DRAMA FROM NATURALISM TO THE PRESENT

(Class 3, Cr. 3)

Prerequisite: GER 406

Development of the drama through the various literary movements of the period, including consideration of the underlying social and ideological forces.

GER 556 THE GERMAN NOVELLE

(Class 3, Cr. 3)

Prerequisite: GER 406

A survey of the development of the Novelle, a literary genre which presents Germany's unique contribution to the European literature of the nineteenth century.

GER 581 GERMAN CULTURE

(Class 3, Cr. 3)

The development of the cultural life in German-speaking lands as reflected in architecture, art, history, literature, music, and philosophy. Lectures in German.

GER 590 DIRECTED READING IN GERMAN

(Class 0 to 4, Cr. 1 to 4)

(May be repeated for credit)

General Studies

GNS 103 INTRODUCTION TO HIGHER EDUCATION

(Class 3, Cr. 3)

Designed to assist and guide students in maximizing their potential for success at the university by promoting academic growth. This course will emphasize utilization of campus resources, goal setting, values exploration, the relationship of academic planning to life goals, career exploration, the relationship of academic planning to life goals, career exploration, and critical thinking strategies. This course is required of all students in the Developmental Studies Program, except those with credit in GNS 290 or EDPS 103.

GNS 160 INTRODUCTION TO CHEMISTRY

(Class 2, Lab. 3, Cr. 3 or Class 3, Lab. 3, Cr. 3)

A survey of modern chemistry using everyday examples and contemporary experiments to illustrate the general theories and unifying concepts. The subject matter is so widely diversified that those desiring to continue will be prepared to successfully complete chemistry courses required for careers in health, agriculture, industry, energy, transportation, conservation, or other fields.

GNS 290 TOPICS FOR STUDY

(Class 0 to 3, Cr. 1 to 3)

A variable credit, variable title course for either group or individual study.

GNS 290B COLLEGE STUDY SKILLS

(Class 3, Cr. 3)

The course is designed to guide students through the transition into the learning systems required for college success. This course will emphasize the development and improvement of study techniques and learning strategies through a variety of topics including: transition to college, time management, motivation, relationship of academic goal-setting to life goals, exam preparation, learning style identification, test-taking, note-taking, reading comprehension, successful academic attitudes, information and research literacy and implementing a personalized, realistic plan for academic success.

Graduate Studies

GRAD 590 SPECIAL TOPICS

(Class 1 to 3, Cr. 1 to 3)

Hours and credit to be arranged.

Greek

GREK 101 MODERN GREEK LEVEL I

(Class 3, Lab. 1, Cr. 3)

Introduction to Modern Greek.

GREK 102 MODERN GREEK LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: GREK 101

Continuation of GREK 101 - Modern Greek Level I

Hebrew

HEBR 101 HEBREW LEVEL I

(Class 3, Lab. 1, Cr. 3)

Introduction to Hebrew.

HEBR 102 MODERN HEBREW LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: HEBR 101

Continuation and extension of the first semester. The course aims to develop fluency in reading, comprehension, and spoken language. Knowledge of grammar and vocabulary is expanded.

History

HIST 104 INTRODUCTION TO MODERN WORLD

(Class 3, Cr. 3)

Traces the historical, political, and geographical expansion of European society and culture into the Americas, Africa, and Asia. Such topics as the major political revolutions, nationalism, the development of the European states, and the environmental impact from the era of the Reformation to the present are studied.

HIST 106 INTRODUCTION TO HISTORY AND SOCIAL STUDIES

(Class 3, Cr. 3)

This course is designed as both the introductory course for History Majors and Social Studies Education Majors and fulfills the general education requirement for the freshman experience class. It is designed to provide the basic tools of college-level reading and writing needed to become effective historians and Social Studies teachers.

HIST 110 THE PRE-MODERN WORLD

(Class 3, Cr. 3)

A survey of the ancient and medieval periods from late prehistoric times to the 17th century. Major emphasis is placed on ancient civilizations, the development and flowering of medieval, political, religious, economic and cultural institutions in Western and non-Western societies; the impact of geographic and environmental factors in the historic, social and cultural changes, and the dawn of modern times.

HIST 151 AMERICAN HISTORY TO 1877

(Class 3, Cr. 3) TRANSFER IN

A study of development of American political, economic, and social institutions in their geographical and environmental context from the early explorations and Colonial settlements through Reconstruction.

HIST 152 UNITED STATES SINCE 1877

(Class 3, Cr. 3) TRANSFER IN

A study of the growth of the United States from 1877 to the present. The new industrialism, agrarian problems, geographical and environmental consequences, depression, the New Deal, the two world wars, the Cold War and similar topics are analyzed.

HIST 215 SUB SAHARA AFRICA

(Class 3, Cr. 3)

A survey of Sub Sahara African history which traces the development of this part of Africa from prehistoric times to the present. Major emphasis is directed toward recognizing the importance of Africa and Africans in history and pre-history. A brief survey of the early history of Africa, the Middle Age of African history with Africa's rich cultural and artistic heritage, the nature of African political systems, the rise and decline of the powerful kingdoms and empires, the era of the Atlantic Slave Trade, the colonial period, nationalist movements, and the diverse economic and political systems that have developed in post-independence Africa.

HIST 228 ENGLISH HISTORY TO 1688

(Class 3, Cr. 3)

This course is designed to survey the growth and development of English society from its beginning through the 17th century. Emphasis is put upon those institutions and events that influenced the establishments of the English legal system.

HIST 229 ENGLISH HISTORY SINCE 1688

(Class 3, Cr. 3)

A continuation of HIST 228. Emphasis is placed upon Great Britain as a world and imperial power. Attention is given particularly to the industrial revolution,

the growth and achievements of democratic institutions, and the role Britain has played in western civilization in recent times.

HIST 231 INTRODUCTION TO UNITED STATES FOREIGN POLICY

(Class 3, Cr. 3)

This course is designed to introduce students to the major themes and issues in the contemporary history of United States foreign policy. Lectures, discussion and readings will examine such area as United States relationships with the major powers, the Third World and international organizations. Students with credit in POL 231 – Introduction to United States Foreign Policy may not receive credit for this class.

HIST 271 LATIN AMERICAN TO 1824

(Class 3, Cr. 3)

A survey of Latin American History from its origins to the end of the major movements toward independence with emphasis on discover, colonization, expansion and the transfer of intuitions from Spain to Portugal.

HIST 272 LATIN AMERICAN FROM 1824

(Class 3, Cr. 3)

A survey of Latin American history from independence to the present with particular attention on political, economic, and social problems connected with modernization.

HIST 295 RESEARCH AND WRITING IN HISTORY

(Class 3, Cr. 3)

This course is designed to train history majors in the fundamentals of historical research and writing. It or HIST 582 –The Art of History– is required of all History majors.

HIST 301 EPISODES IN AMERICAN RELIGIOUS HISTORY

(Class 3, Cr. 3)

Introduces students to the study of religion in the United States by focusing on particular groups or movements. Each religious episode is placed in the appropriate historical context and in relation to other religious experiences and expressions. Subjects vary but could include Puritanism, Mormonism, and twentieth-century popular religion.

HIST 306 THE UNITED STATES IN 1960'S

(Class 3, Cr. 3)

Prerequisite: HIST 151 or HIST 152

A description and analysis of major domestic and foreign, social, political, military, and diplomatic issues confronting the United States in the 1960's and approaches and efforts to resolve these issues. The class will utilize the 1960's as a laboratory to provide students with both historical and political science skills and approaches to the issues and themes of a particular period. May be taken for history or political science credit.

HIST 308 BRITAIN AND THE EMPIRE

(Class 3, Cr. 3)

Prerequisite: HIST 104

This course will examine Britain and her empire from the reign of Queen Victoria through the career of Margaret Thatcher. It will investigate the political, economic and social role of the imperial power and explore how various subject peoples reacted.

HIST 309 THE MIDDLE EAST

(Class 3, Cr. 3)

Prerequisite: HIST 104

A survey beginning with the period of European involvement in the Ottoman Empire up to the present. The course includes the study of political Zionism and Arab nationalism, the role of the major powers between the two World Wars and that of the United States and the Soviet Union during the Cold War, and the developments in the Middle East in the post-Cold War era.

HIST 313 MODERN GERMANY

(Class 3, Cr. 3)

Prerequisite: HIST 104

Defines the nature of medieval Holy Roman Empire in the early modern era. Examines after 1806 the development of German nationalism and the unification movements; the position of the Germans of Austria; the period of German unity under the Hohenzollerns, Wimar Republic, and Hitler; and the post-World War II division and reunification of Germany.

HIST 314 MODERN RUSSIA

(Class 3, Cr. 3)

Prerequisite: HIST 104

Analyzes the development of the modern Russian territorial state and its civilization from the pre-Petrine Era through the rise and eclipse of the Communist regime.

HIST 315 MODERN NATIONALISM

(Class 3, Cr. 3)

Prerequisite: HIST 104

Analyzes the nature and development of modern nationalism as a force of integration and disintegration in various major European and non-European states.

HIST 316 HISTORY OF ARCHITECTURE II

(Class 3, Cr. 3)

Prerequisite: HIST 151 or HIST 152

The study of Western architecture of the eighteenth, nineteenth and twentieth centuries with an emphasis on the related structural, technological, socioeconomic and cultural influences that contributed to the architectural expressions of these periods. (Not open to students with credit in ARET 310)

HIST 319 THE HISTORY OF MODERN ISRAEL

(Class 3, Cr. 3)

Prerequisite: HIST 104

This course will cover the history of political Zionism, the establishment of the state of Israel, and the economic, social, and political development of the country from 1948 until the present. It also will examine the Arab-Israeli conflict and the peace process, and the relationship between the United States and Israel.

HIST 321 EUROPE IN 19TH CENTURY

(Class 3, Cr. 3)

Prerequisite: HIST 104

Analyzes major developments from the downfall of Napoleon to the out-break of World War I. Emphasis is placed on main currents in international relations, domestic affairs of major European States, the Revolution of 1848, and ideological, cultural, intellectual trends of the period.

HIST 325 HISTORY OF CRIME IN AMERICA

(Class 3, Cr. 3)

Prerequisite: HIST 151 or HIST 152

A study of the history of crime in America from the 19th century to the present. Emphasis will be placed on violent crime, the public's response to it, and the cultural expressions of crime through literature and the popular media.

HIST 331 GREAT FIGURES IN HISTORY

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 152

A series of autobiographical and biographical sketches of figures, distinguished as well as lesser-known, in all fields of activity.

HIST 334 SCIENCE AND TECHNOLOGY IN WESTERN CIVILIZATION II

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 152

A survey of some of the main features of the historical development of science and technology in the western world from Newton to the present. Emphasis is placed upon the relation between the achievements of individual investigators and the major aspects of the society and culture in which they lived.

HIST 336 HISTORY OF ORGANIZED CRIME IN AMERICA

(Class 3, Cr. 3)

Prerequisite: HIST 151 or HIST 152

An examination of the evolutionary process leading to the complex social phenomenon of organized crime. Emphasis will be placed upon the rise of gangs, the Mafia mystique, the immigrant and crime, and the cultural expressions of organized crime through literature and the popular media.

HIST 338 ASIA IN THE MODERN ERA

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 110 or HIST 151 or HIST 152

The history of Modern China, Japan, India, and Indo-China. In addition to politics and government, emphasis is placed on institutional and cultural developments, religion and philosophy, social structure, and art. The interaction of Western and Oriental civilizations is stressed.

HIST 346 THE ERA OF WORLD WARS I AND II, 1914-1945

(Class 3, Cr. 3)

Prerequisite: HIST 104

Analyzes the causes, major campaigns, and legacy of the two major conflicts of the twentieth century. Examines the rise of totalitarian dictatorships, in particular Nazi Germany and Communist Russia. Emphasis is placed on the biographical study of the great historic personalities who helped shape the era, including Adolf Hitler, Benito Mussolini, Josef Stalin, Winston Churchill, and others.

HIST 347 THE ROARING TWENTIES

(Class 3, Cr. 3)

Prerequisite: HIST 152

An assessment and analysis of the nature of political, social, religious, economic, cultural, intellectual, and diplomatic change and the response to that change in the United States of the 1920's.

HIST 348 DEPRESSION DECADE

(Class 3, Cr. 3)

Prerequisite: HIST 152

The Great Depression of the 1930's had a profound and often tragic impact on American life and society. This course will attempt to analyze that impact and its social, political, economic, cultural, diplomatic, and institutional consequences.

HIST 349 INTRO. TO JEWISH STUDIES

(Class 3, Cr. 3)

Prerequisite: HIST 104 or POL 101

Also cross-listed as IDIS 330 and POL 349. An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present.

The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts of Judaism, such as God, Torah, People, Land and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture.

HIST 363 EUROPE SINCE 1945

(Class 3, Cr. 3)

Must be Sophomore standing. This course will cover the restoration of western Europe after World War II and the division of Europe into two mutually hostile camps, one communist, the other capitalist. The course will review the history of the Cold War and explore the political, social and economic factors that led to the end of the Soviet Empire. The course will, also, attempt to discuss the aftermath of the demise of the Soviet Union, ethnic violence, social disintegration, and economic decline. It will, also, look at the beginning of democratic institutions.

HIST 364 ENGLAND IN THE 20TH CENTURY

(Class 3, Cr. 3)

Prerequisite: HIST 104

Emphasizing political and social history this course will investigate the British role in both World Wars. The course will also explore how the British adapted to their changing circumstances. Readings and lectures will cover a variety of issues, including the role of British women, establishment of the welfare state and Britain's reluctance fully to embrace the European community.

HIST 365 WOMEN IN AMERICA

(Class 3, Cr. 3)

Prerequisite: HIST 151 or HIST 152

Not open to students with credit in WOST 365 A survey of the history of women in America from colonial times to the present. Emphasis is on changing status of women, social and cultural influences, movements for women's contributions to American society.

HIST 369 RESEARCH IN HISTORY

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 110 or HIST 152 or HIST 151

A research writing, and oral presentation course organized around semester-long topics or themes, selected by the instructor to reflect his/her area of knowledge and interest. Readings and course bibliographical materials will change with each offering. The class will focus primarily on undergraduate research and writing. This course will be mandated for all majors.

HIST 370 THE HOLOCAUST

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 152

A survey of the Holocaust from 1933 to 1945. The course includes analysis and historical descriptions of such topics as the background and nature of Nazi racism, Nazi persecution from 1933 to 1941, the Final Solution from 1941 to 1945, the concentration camp experience, resistance, the apathy and indifference of bystanders, rescue efforts, assessment of the significance of the Holocaust, and historical interpretation of the Holocaust.

HIST 373 THE CARIBBEAN

(Class 3, Cr. 3)

Will explore various topics and issues unique to the Caribbean. Emphasis will be placed on European and African influence on the complex nature of Caribbean history languages and literature, societies and cultures.

HIST 374 UNITED STATES ECONOMIC HISTORY

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 110 or HIST 151 or HIST 152 Also ECON 375.

Not open to student with credit in ECON 375.

A study of the growth of the American economy from colonial times to the late 19th century. Emphasis is placed on the application of the tools of economic analysis to historical questions concerning the sources and rate of growth, the relationships between growth and structural and institutional change, and the impact of industrialization on the quality of life in the American economy.

HIST 376 HISTORY OF INDIANA

(Class 3, Cr. 3) *Experiential Learning*

Economic, political, and social history of Indiana from the state's earliest beginnings as a part of the old Northwest Territory to the present.

HIST 380 AMERICAN ENVIRONMENTAL HISTORY

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 110 or HIST 151 or HIST 152

This class will focus on who and why Americans living at particular times and places used and transformed their environment. Examining such familiar topics as colonization, the frontier, the industrial revolution, slavery, the Civil War, and the emergence of modern-day consumer culture, the class will show how to interaction of Americans with the natural world has influenced the development of a distinctive society.

HIST 388 THE WORLD OF IDEAS I

(Class 3, Cr. 3)

Prerequisite: HIST 110 or HIST 104

Not open to students with credit in POL 388 or PHIL 388

The first half of a two-semester chronological sequence based on reading and discussing source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization.

HIST 389 THE WORLD OF IDEAS II

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 151 or HIST 152

Not open to students with credit in POL 389 or PHIL 389 The second half of a two-semester chronological sequence based on reading and discussing primary source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society.

HIST 390 TOPICS IN HISTORY

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 110 or HIST 151 or HIST 152

May be repeated for credit. Variable title.

HIST 390D U.S. IMMIGRATION

(Class 3, Cr. 3)

This course will examine immigration trends, issues and events through the history of the United States. Topics addressed will include causes of migration, U.S. incentives, demographics shifts, assimilation, xenophobia and restrictive legislation. Students will explore immigrant groups from Europe, Asia, Africa, and Latin America, and related topics of race, class, gender and religion.

HIST 393 HISTORICAL GEOGRAPHY

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 110 or HIST 151 or HIST 152 or EAS 110 or EAS 220

This class addresses general topics in the discipline of Geography. It seeks to educate students so that they can consider the spatial dimensions of historical, political, economic, and social themes and problems. In addition, the course seeks to develop the general skills of the discipline, especially those related to cartography. Students receiving credit for this as GEOG class may not also receive credit as a HIST class and vice versa.

HIST 397 THE AFRO-AMERICAN

(Class 3, Cr. 3)

A survey of the history of the Afro-Americans in the United States from their African background to the present. Emphasis is placed upon the changing economic, social, and political status of Afro-Americans in the United States, and upon their contributions to American society.

HIST 461 THE REVOLUTIONARY ERA, 1763 TO 1800

(Class 3, Cr. 3)

An analysis of the origins, nature, and consequences of the American Revolution; of the achievements and difficulties of the new nation under the Articles of Confederation; of the drafting and adoption of the Constitution; and of the initial political, economic, and social progress of the United States under the Federalists.

HIST 472 HISTORY OF MEXICO

(Class 3, Cr. 3)

A history of the Mexican people from the pre-Columbian period to the present. Special emphasis is placed on the successful social revolutions that led to the development of today's dynamic nation.

HIST 490 TOPICS IN HISTORY

(Class 3, Cr. 3)

Prerequisite: HIST 104 or HIST 110 or HIST 151 or HIST 152

Topics will vary

HIST 510 THE AGE OF ABSOLUTE MONARCHY, 1600-1789

(Class 3, Cr. 3)

The Age of Absolute Monarchy will study the Reformation and the great revolutionary upheavals of the late 18th century.

HIST 513 MODERN EUROPE

(Class 3, Cr. 3)

This course will focus on the major themes of the era 1789-1859: The French Revolution, the ascendancy of France in Europe, and the reaction to that hegemony.

HIST 525 PROBLEMS IN TWENTIETH CENTURY GERMAN HISTORY

(Class 3, Cr. 3)

Prerequisite: HIST 104

A study in depth of three major periods of German history in the century: pre-1914, the Weimar Republic, and the Third Reich. Emphasis is placed on the transformation which occurred in German society as a result of the upheavals of this century.

HIST 535 MODERN EUROPE

(Class 3, Cr. 3)

The period to be covered in this course are those years which are regarded as the zenith of European civilization: 1850-1914. The structure is both chronological and topical.

HIST 538 SOCIAL AND CULTURAL HISTORY OF MODERN RUSSIA

(Class 3, Cr. 3)

A survey of family policies, education, the relationship of ethnic minorities to the state, the role and status of artists, and questions of social stratification in the Soviet Union since 1917.

HIST 552 EUROPE SINCE 1914

(Class 3, Cr. 3)

This course will concentrate on political, social, economic, and intellectual legacies of the two world wars. Special emphasis will be placed upon the structure of peace and security from 1919 through the Cold War. The present status of East-West relations will be considered.

HIST 553 COLONIAL AMERICA, 1600-1776*(Class 3, Cr. 3)*

A study of the expansion of Europe, the age of exploration and discovery, and the establishment of colonies in the New World. Particular attention will be paid to the emergence of an American culture during the 17th and 18th centuries, the nature of the British Empire, and the emergence of dissent and revolution.

HIST 554 THE ERA OF SECTIONALISM, 1820-1865*(Class 3, Cr. 3)*

This course will concentrate on the rise to domination of those forces and factors that led to a disastrous Civil War; slavery and anti-slavery, economic jostling among the sections, expansionism, the creation of false sectional stereotypes, and the rise of hostile sectional parties. The Civil War will be analyzed in military and political terms.

HIST 555 THE EMERGENCE OF MODERN AMERICA, 1865-1916*(Class 3, Cr. 3)*

An examination of the nation that emerged emotionally exhausted from a civil war. The interaction of a flourishing industrial establishment, floods of immigrants, rapid urbanization, and smoldering racism combined to transform ante bellum America into a complex and relatively sophisticated society during those years. Emphasis will be placed upon an analysis of these forces and the men who tried to control them.

HIST 562 ENVIRONMENTALISM IN UNITED STATES HISTORY*(Class 3, Cr. 3)*

A survey of the differing perspectives, attitudes, and values with which Americans have perceived and acted toward, upon, and within their physical environment from the late 18th century to the present.

HIST 564 MODERN AMERICA, 1917-PRESENT*(Class 3, Cr. 3)*

A history of the United States from the first World War to the present; the political, social, economic, diplomatic, and intellectual developments in America during those years will be examined in their world context.

HIST 569 HISTORY OF THE AMERICAN SOUTH*(Class 3, Cr. 3)*

This course will stress those political and social traits that make the region between the Potomac and Rio Grande rivers a cultural province conscious of its identity. This regional course will focus on those differences which made the South a unique region and the interrelations between the South and the nation of which it was a part. Half of the course will deal with the major events in the South's history after the Civil War, especially dealing with industry, agriculture, and the rise and fall of Jim Crow.

HIST 575 THE AMERICAN FRONTIER*(Class 3, Cr. 3)*

This course will involve study of the nature and importance of the westward movement in American history from the Revolution to the 20th century. The westward movement will be treated in its varied aspects. Emphasis will be placed upon social and economic aspects as well as upon the spread of government. Although the Turner thesis will be discussed, no attempt will be made to pursue a thesis.

HIST 582 THE ART OF HISTORY*(Class 3, Cr. 3)*

A balanced presentation of the art of studying, understanding, researching, and writing history. It will present a balanced view of problems in American and European historiography; causality and methodology will be emphasized. Careful attention will be paid to research methods, the mechanics of the university library, and writing style.

HIST 584 SOCIAL HISTORY OF THE UNITED STATES*(Class 3, Cr. 3)*

Social and cultural development of the American people since the late 18th century.

HIST 586 UNITED STATES FOREIGN AFFAIRS TO WORLD WAR I*(Class 3, Cr. 3)*

An examination of the economic, political and ideological factors which shaped American foreign policy from the colonial era until WWI. Course emphasizes the drive for territorial and commercial expansion which propelled the United States to a position of world power.

HIST 587 UNITED STATES FOREIGN AFFAIRS, WORLD WAR I TO PRESENT*(Class 3, Cr. 3)*

An examination of the economic, political, and ideological factors which shaped American foreign policy from WW I until present. Course emphasizes the intimate relation between domestic conditions and the growing involvement of the United States in world affairs.

HIST 589 HISTORY OF RELIGION IN AMERICA*(Class 3, Cr. 3)*

A historical examination, from colonial beginnings to the present, of American religions and their role in the social, political, and economic life of the nation.

HIST 590 DIRECTED READING IN HISTORY*(Class 0 to 3, Cr. 1 to 3)*

May be repeated for credit. A reading course directed by the instructor in whose particular field of specialization the content of the reading falls. Approval of each reading project must be secured from the department.

HIST 601 READING SEMINAR IN EUROPEAN HISTORY*(Class 0 to 3, Cr. 1 to 3)*

Must be at Graduate standing to take this course. May be repeated for credit.--- Bibliography and historiography of selected fields of topics in European history; may vary in subject matter from semester to semester.

HIST 651 READING SEMINAR IN AMERICAN HISTORY*(Class 0 to 99, Cr. 1 to 3)*

Student must be at Graduate standing. May be repeated for credit.---- Bibliography and historiography of selected fields or topics in American history; may vary in subject matter from semester to semester.

Honors

HONR 100 FRESHMAN HONORS SEMINARS*(Class 3, Cr. 3)**Admission to the Honor Program.*

A freshman experience course directed to honors students. This course provides an orientation to the honors program, the university environment and an introduction to research methods, covering library research, experimental design, survey design, statistical analysis, critical thinking, logic and ethics. Students will critically examine research topics by evaluating evidence and the conclusions that may be drawn.

HONR 290 SPECIAL TOPICS*(Class 1 to 4, Cr. 1 to 4)**Admission to the Honors Program.*

Restricted to honors program students, this course will involve an investigation of a specific problem or topic.

HONR 390 JUNIOR LEVEL TOPICS*(Class 1 to 4, Cr. 1 to 4)**Admission to the Honor Program.*

Restricted to honors program students, this course will involve an investigation of a specific problem or topic.

HONR 390B HONR 390B POST-COL LIT & HIST*(Class 3, Cr. 3)*

This course explores the twin subjects of history and literature as having dual importance to understanding the imperatives that drive the interrelationships of different types of power. Students will read, explore and discuss the historical contexts for works by writers from different cultures that have struggled with the processes of colonization and its aftermath.

HONR 400 HONOR CAPSTONE PROJECT*(Class 1 to 3, Cr. 1 to 3)**Admission to Honors Program.*

Restricted to students in the honors program with at least Junior standing. This is an upper level honors course mandating a major supervised research effort or practicum resulting in a written report and public, oral dissemination.

HONR 490 SENIOR LEVEL TOPICS*(Class 1 to 4, Cr. 1 to 4)**Admission to Honors Program.*

Restricted to honors program students, this course will involve an investigation of a specific problem or topic.

Horticulture

HORT 102 FUNDAMENTALS OF HORTICULTURE

(Class 3, Cr. 3)

Study of the biology and technology involved in the production, storage, processing and marketing of ornamentals, fruits, vegetables, and other horticultural plants.

Health Sciences

HSCI 105 FACTS OF LIFE

(Class 3, Cr. 3)

The study of the human body in health and disease. Topics include basic structure and function of the human body and an overview of human biology and an human biology related to genetics, evolution, impact on the environment, and human wellness issues. Career opportunities will be discussed.

HSCI 200 PRECEPTORSHIP IN THE MEDICAL SCIENCES

(Lab. 1)

Sophomore or higher standing; consent of the preceptorship committee.

The course is designed to provide a pre-professional school experience for students seeking careers in fields such as medicine, dentistry and physical therapy. Individual programs will be designed by the health professional advisor, the student and a practicing health professional. The student will spend one week in a clinical study under the direction of health professionals. Such units as hospital rotations, dental office experience, government health office experience, etc., will be included. A written report of the experience will be made to the advisor and cooperating health professionals.

HSCI 230 INTRODUCTION TO PARAMEDICINE

(Class 4, Cr. 4)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

This course includes instruction in the roles and responsibility of the paramedic, orientation to the hospital and field settings, medical legal aspects of care, patient assessment, trauma management, management of stress and behavioral emergencies, pastoral care orientation, pre-hospital scene management, universal precautions, hazardous materials identification and response.

HSCI 231 PATHOPHYSIOLOGY OF DISEASE STATES

(Class 4, Cr. 4)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

The pathophysiology, assessment and treatment of shock as well as review of fluid and electrolyte abnormalities in medical emergencies will be examined.

HSCI 232 INTRODUCTUIN TO ANATOMY & PHYSIOLOGY

(Cr. 4)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Review of topographical anatomy, cellular anatomy and physiology and human organ systems.

HSCI 233 EMERGENCY PHARMACOLOGY

(Class 4, Cr. 4)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Emphasis of this course is therapeutic effects, indications, route of administration, dosages, and side effects of medications used in the pre-hospital setting. Techniques of venipuncture, intravenous, cannulation, precutaneous injection, arterial blood gas analysis, nasogastric intubation and urinary catheterization are taught.

HSCI 234 CARDIOPULMONARY EMERGENCIES

(Class 4, Cr. 4)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Pathophysiology, assessment and treatment of cardiopulmonary emergencies are discussed. Fundamentals of airway management electrocardiology, and interpretation of normal and abnormal ECG patterns are studied. Effects of medications on the cardiopulmonary system is emphasized.

HSCI 235 MEDICAL AND ENVIRONMENTAL EMERGENCIES

(Class 4, Cr. 4)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Topics discussed include neurological environmental, pediatric, obstetric, gynecological, endocrine and toxicological emergencies. Special emphasis on the needs of the geriatric, psychiatric and communicable diseases patient will be stressed.

HSCI 236 ADVANCED LIFE SUPPORT

(Class 4, Cr. 4)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

American Heart Association cardiopulmonary resuscitation standards, advanced cardiac life support lectures and practical skills stations will be taught. Advanced Cardiac Life Support certification will be achieved.

HSCI 237 PREHOSPITAL SEARCH AND RESCUE

(Lab. 2, Cr. 1)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

This course provides classroom and field experiences designed to expose the student to effective search and rescue operations. Concepts explored include incident command, disaster triage techniques, principles of extrication, water high rise and confined space rescue.

HSCI 238 CLINICAL EXPERIENCES I

(Lab. 2, Cr. 1)

Prerequisite: HSCI 230 and HSCI 231

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

This course provides the clinical setting to correlate the knowledge objectives from HSCI 230 and HSCI 231. Included are rotations in the Emergency Department, Social Services, Behavioral Treatment Center, Pastoral Care and Pathology.

HSCI 239 CLINICAL EXPERIENCES II

(Cr. 1)

Prerequisite: HSCI 238

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

A continuum of HSCI 238 with an emphasis on invasive techniques in critical care units. Rotation in the Emergency Department, Clinical Laboratory (including morgue), Surgery, Anesthesiology, Cardiovascular, and Medical Intensive Care Units are provided. Exposure to Cardiac Catheterization and Telemetry is included.

HSCI 240 CLINICAL EXPERIENCES III

(Cr. 2)

Prerequisite: HSCI 238 and HSCI 239

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Students will be rotated through pediatrics, nursery, obstetrics, neuro surgical intensive care unit, physical medicine and rehabilitation. Geriatric extended care facility a continuation of Emergency Department, Critical Care Units, and sampling of other hospital-based specialty care areas will be included.

HSCI 241 FIELD INTERSHIP I

(Cr. 1)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

In this course students are assigned to paramedics in the pre-hospital setting, performing assessment, treatments, documentation and pre-hospital field communications under direct supervision.

HSCI 242 FIELD INTERNSHIP II

(Cr. 2)

Prerequisite: HSCI 241

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

A continuum of HSCI 241 with an emphasis on invasive techniques in the pre-hospital setting. Advanced cardiac and respiratory assessment and management including endotracheal intubation, intravenous cannulation and medication administration will be performed with the guidance of the paramedic preceptor.

HSCI 243 FIELD INTERNSHIP III

(Cr. 2)

Prerequisite: HSCI 241 and HSCI 242

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

A continuum of HSCI 241 and HSCI 242. The emphasis of this course is to provide the student an opportunity to refine the proficiency of previously learned skills and to synthesize all knowledge as it relates to the patient with an emergent pre-hospital need. The student at this point should be able to assess and perform appropriate interventions and therapy for all patients and situations to which they are exposed. The student will be placed in the position of team leader and primary care paramedic with the direct supervision on the paramedic preceptor.

HSCI 244 PATIENT ASSESSMENT

(Cr. 4)

Prerequisite: HSCI 232

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Techniques of the physical exam will be demonstrated and practiced in this course

with special emphasis on organ systems as they are being studied. Relating the physical exam to the clinical impression will also be emphasized. Students will be assigned to physician preceptors.

HSCI 245 PHYSICAL EXAM II

(Cr. 1)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

A continuum of HSCI 244 with emphasis on relating the physical exam to the clinical impression. Students will be assigned to physician preceptors.

HSCI 451 CLINICAL BIOCHEMISTRY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

This course is designed to provide principles of biochemistry for clinical application for medical technologists. The course encompasses an introduction to carbohydrate, amino acid and lipid metabolism. Also included are lectures on basic endocrinology, enzymes, and biosynthesis of steroid hormones. Physiological principles are stressed with respect to liver, lung and kidney function. Special emphasis is placed on correlation of the theoretical and clinical areas.

HSCI 452 CLINICAL CHEMISTRY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

This course is designed to provide the medical technologist with the principles and application of clinical chemistry. Methods of instrumental analysis include a variety of automated procedures, electrophoresis, immunoelectrophoresis, immunodiffusion, radioisotopes, steroids, hormone assay, and toxicology. Quality control for clinical chemistry is included. Supervised clinical laboratory experience is offered, with students rotating through the various areas of clinical chemistry on a sequential rotational basis.

HSCI 453 CLINICAL HEMATOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Study of the functions, maturation and morphology of blood cells. Blood cells, platelets and reticulocyte counting procedure. Experiences in the study of cellular content of other body fluids are offered. Lectures and laboratory are designed to teach techniques of sedimentation rates, hematocrits, corpuscular indices, hemoglobin red cell fragility and special staining procedures. Also routine and special coagulation studies are taught. Supervised experience in clinical hematology offers opportunities for study in routine and special hematology and coagulation procedures.

HSCI 454 CLINICAL IMMUNOHEMATOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

A review of serologic principles and technical fundamentals of transfusion practice; a comprehensive consideration of all blood groups, with emphasis on ABO and Rh-Hr blood group systems. Extensive practice is gained in pre-transfusion techniques and antibody identification in the laboratory. Other blood types are antigen-antibody relationships are taught in laboratory and lectures. Also included are blood donor room procedures; preparation of blood components; correlation of blood component therapy with disease states; quality control of all reagents, procedures, and equipment used; and laboratory safety measures, all of which offer the best patient care and protection of laboratory personnel.

HSCI 455 CLINICAL MICROBIOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Lectures and clinical laboratory experience in diagnostic procedures as aids to the diagnosis of human disease. Proper selection of techniques for the isolation and identification of medically important bacteria. Special emphasis is placed on newer methods of anaerobic bacteria identification. Also includes lectures and laboratory identification in the fields of mycology and microbacteriology, with emphasis on isolation and identification. Practical applications of fluorescent antibody tests are performed.

HSCI 456 CLINICAL NUCLEAR MEDICINE

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Lectures and clinical rotation designed to familiarize the medical technology student with the terminology, instrumentation, dosages and in vitro and in vitro rationale and procedures pertinent to a nuclear medicine department.

HSCI 457 CLINICAL PARASITOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Techniques of specimen examination, identification of cysts and ova, life cycles of parasites.

HSCI 458 CLINICAL SEROLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Lectures and a laboratory experience in serology, including the preparation of antigen, flocculation tests for syphilis, heterophile antibody tests, creative proteins, RA test, FTA, rubella testing. Also included are lectures in immunology that include classifications of immunoglobulins, mechanism of antibody formation; immune response, types of antigen-antibody reactions; and theories of radioimmunoassay.

HSCI 459 CLINICAL TOXICOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

A basic orientation in the use of instrumentation, such as mass spectrophotometry, and liquid and gas chromatography that is used in the specialized toxicology laboratory.

HSCI 460 CLINICAL URINALYSIS

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Routine analysis, chemical tests, sediment identification, renal function tests and pregnancy tests.

HSCI 461 CLINICAL VIROLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Techniques involved in the performance of virologic studies for rubella, influenza, mumps, Newcastle disease, herpes, polio, hepatitis. Tissues cultures are maintained for primary virus isolation.

HSCI 462 CLINICAL CYTOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Lectures and laboratory experience in examination of body fluids: e.g., spinal fluid, synovial fluid, and seminal fluid. Lectures on the use and application of various types of microscopy.

HSCI 463 CLINICAL HISTOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Histologic technique (principles of dehydration, embedding, sectioning, routine staining, frozen sections, decalcification, exfoliative cytology)

HSCI 464 CLINICAL ANATOMY AND PHYSIOLOGY

(Class 1 to 10, Lab. 0 to 10, Cr. 1 to 10)

NOTE: This course is offered at affiliated clinical sites, it is not taught on campus.

Review of the structure and function of the systems most concerned with laboratory tests; heart, kidney, liver, hematopoietic system, etc.

Hospitality and Tourism Management

HTM 100 INTRODUCTION TO THE HOSPITALITY & TOURISM INDUSTRY

(Class 1 to 3, Cr. 1 to 3)

Co-requisite: HTM 101

An overview of supervisory careers, opportunities, and responsibilities in the food service and lodging industry.

HTM 101 HOSPITALITY AND TOURISM STUDENT SEMINAR

(Class 1, Cr. 1)

Co-requisite: HTM 100

This course assists the student new to Purdue to become acquainted with the Purdue system and with the HTM department and program. Information presented to assist students with developing strategies for academic and career-related success at Purdue.

HTM 141 FINANCIAL ACCOUNTING FOR THE SERVICE INDUSTRIES

(Class 3, Cr. 3)

Fundamental accounting principles and procedures applied to the hospitality and service industries. Includes study of uniform system of accounts, financial state-

ments, special purpose journals and subsidiary ledgers unique to the hospitality and service industries.

HTM 181 LODGING MANAGEMENT

(Class 3, Cr. 3)

Concepts of organization, communication, ethics, and policy formulation in the front office. Introducing the basic techniques and trends in systems and equipment available to meet the needs of management and the guest.

HTM 191 SANITATION AND HEALTH IN FOODSERVICE, LODGING AND TOURISM

(Class 3, Cr. 3)

Food safety and other health related issues in the hospitality and travel industries. Application of sanitation principles in restaurants, hospitals, schools, hotels, cruise ships, airlines, and international travel are covered. Students must pass a National Sanitation Certification Examination to receive credit.

HTM 212 ORGANIZATION & MGMT IN THE HOSPITALITY & TOURISM INDUSTRY

(Class 3, Cr. 3)

Prerequisite: Classification 3 or higher.

Basic principles of planning, organizing, directing and controlling human and physical resources will be addressed. Students will learn how these principles can be applied to maximize the organizational effectiveness of hospitality and tourism business.

HTM 231 HOSPITALITY AND TOURISM MARKETING

(Class 3, Cr. 3)

Provides students with a customer-oriented approach to marketing in hospitality and tourism. Techniques available to hotels, restaurants, tourism, and travel businesses are discussed and evaluated including packaging, the travel trade, advertising, sales promotion, merchandising, and personal selling.

HTM 241 MANAGERIAL ACCT AND FINANCIAL MGMT HOSPITALITY OPERATIONS

(Class 3, Cr. 3)

Prerequisite: MGMT 200 or HTM 141

Managerial and financial analyses of numerical data used for decision-making. Consideration of systems, techniques, information types, and presentational forms used by the hospitality industry.

HTM 251 COMPUTERS IN THE HOSPITALITY INDUSTRIES

(Class 3, Cr. 3)

Prerequisite: CIS 204 Consent of Coordinator or CIS 204.

Explore the applications of computers in the hospitality industry. Special emphasis is placed on those impacting the management of the organization.

HTM 261 DIETETIC TECHNOLOGY FIELD EXPERIENCE

(Class 1 to 6, Lab. 0 to 6, Cr. 1 to 6)

Repeatable to a maximum of 5 credits. Clinical 6-12 hours.

Prerequisite: Limited to enrollment in Dietetic Technician Program. Clinical experience of at least 450 hours in an approved health care facility in the areas of nutritional principles, patient/client education and counseling, management and supervision of human resources, and food preparation/sanitation/safety at the technician level, under the direction of a Registered Dietitian.

Last semester credit shall include full staff responsibility as a Dietetic Technician.

HTM 291 QUANTITY FOOD PRODUCTION AND SERVICE

(Class 2, Lab. 6, Cr. 4)

Prerequisite: F&N 203 or F&N 205 and HTM 191

An introduction to food preparation methods and service techniques in quantity food settings. Students become familiar with ingredients and culinary terminology, and learn to read and evaluate menus. Recipe conversion and costing skills are developed. Different production schemes and product flow are examined, and the relationship between back-of-the-house and front-of-the-house activities is discussed.

HTM 301 HOSPITALITY AND TOURISM INDUSTRY PRACTICUM

(Cr. 1) Experiential Learning

Prerequisite: This course requires six (6) credit hours in HTM or the consent of coordinator.

Training and practical experience at the entry-level, totaling at least 300 hours, in an approved hospitality or tourism operation. Pass/Not Pass.

HTM 302 HOSPITALITY AND TOURISM INDUSTRY PRACTICUM

(Cr. 1 to 2)

Prerequisite: HTM 301

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum

of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

HTM 309 HOSPITALITY AND TOURISM MANAGEMENT PUBLICITY AND PROMOTION

(Class 3, Cr. 3)

Prerequisite: HTM Major and Classification 5 (Junior Standing)

Written and oral skills activities focusing on the promotion of the academic major. Newsletter writing and production, public speaking events, preparation and design of academic recruitment materials and other portfolio building public relations types of activities required. Good independent study habits and research skills are developed. Repeatable to a maximum of 6 credits.

HTM 311 PROCUREMENT MANAGEMENT FOR FOODSERVICE

(Class 3, Cr. 3)

Prerequisite: HTM 291 or Co-requisite: HTM 291

Identifies and describes foods, supplies, and related merchandise used in the food-service industry. Provides methods and criteria for recognizing quality, evaluating, specifying, purchasing, and inspecting these products. Discusses the use of technology in the purchasing component of the foodservice industry.

HTM 312 HUMAN RESOURCES MANAGEMENT FOR THE SERVICE INDUSTRIES

(Class 3, Cr. 3)

Prerequisite: HTM 291 Prerequisites or Co-requisites Classification 3 or higher.

The concepts of management of people for effective operations in foodservice, lodging and tourism involving supervisory development and communications; the pre-testing, training and evaluating of employees and the development of attitudes and morale of people working together.

HTM 314 FRANCHISING.

(Class 3, Cr. 3)

Prerequisite: Classification 5 (Junior) or better.

The study of franchise administration, operations, and marketing, with a special emphasis on hospitality related franchises. Includes a study of the legal regulation of franchises, the franchisee-franchiser relationship and unique problems in operating a franchise.

HTM 315 PRIVATE CLUB MANAGEMENT AND OPERATION

(Class 3, Cr. 3)

Prerequisite: HTM 231 and HTM 312 and HTM 341

A study of the organization, administration, operation, and opportunities within the private club industry with emphasis on the manager's duties.

HTM 316 CASINO MANAGEMENT

(Class 3, Cr. 3)

All students must be 21 years of age. An overview of the development, operations and management of casino enterprises. Includes the evolution of gaming, regulatory statutes and agencies, operational concerns, marketing strategies, financial controls, security/surveillance requirements, ethical considerations, and the economic/social impact on the community. Field trip required.

HTM 321 EQUIPMENT FOR RESTAURANTS, HOTELS, AND INSTITUTIONS

(Class 3, Cr. 3)

Prerequisite: HTM 291

Principles of selection, operation, and maintenance of food service equipment, including materials, structural details, design, cost, performance, and specification standards.

HTM 322 HOSPITALITY FACILITIES MANAGEMENT.

(Class 3, Cr. 3)

Technical and managerial issues related to the operation and maintenance of the physical plant and equipment in hospitality industry facilities.

HTM 323 FOOD SERVICE LAYOUT AND DESIGN

(Class 3, Cr. 3)

Prerequisite: HTM 291 and HTM 322

Arrangement of foodservice equipment for efficient use of space. An introduction to computer aided design for equipment placement within constraints. Development of workflow patterns and other engineering considerations.

HTM 331 HOSPITALITY AND TOURISM SALES AND SERVICE

(Class 3, Cr. 3)

Prerequisite: HTM 181 and HTM 231

Analysis of methods used by sales and service departments in hospitality and tourism. Emphasis on selling, planning for and servicing all aspects of meeting and convention business

HTM 341 COST CONTROLS IN FOODSERVICE AND LODGING

(Class 3, Cr. 3)

Prerequisite: MGMT 200 or HTM 141 and HTM 312

Application of cost controls; development of cost reduction methods through management policy and decisions; examination of cost control techniques for food, labor, and supplies in addition to the emphasis on beverage management control.

HTM 361 MANAGED SERVICES FOR THE FOODSERVICE INDUSTRY

(Class 3, Cr. 3)

Prerequisite: HTM 212 Or Consent of Coordinator.

Focuses on the unique aspects of contract and institutional foodservice management as it compares to commercial foodservices; including operations in airline, business dining, school and campus, healthcare, conference and convention center, vending, correctional, and leisure foodservices.

HTM 371 INTRODUCTION TO TOURISM.

(Class 3, Cr. 3)

Principles, practices, and philosophies which affect the economic, social, cultural, psychological, and marketing aspects of human travel and the tourism industry.

HTM 372 GLOBAL TOURISM GEOGRAPHY

(Class 3, Cr. 3)

Analysis of U.S. and world travel destinations, including the exploration of principal geographic features, population centers and attractions, customs and traditions, habits, festivals, and events, as these relate to the hospitality and travel industry.

HTM 375 SPORT-RELATED TOURISM AND LEISURE MANAGEMENT

(Class 3, Cr. 3)

NOT OPEN TO STUDENTS WITH CREDIT IN FM 375

Integration of Sport and Tourism disciplines. Sport participation and spectator travel, hard and soft adventure tourism and management of leisure time are emphasized. Focus on the dynamics behind the explosion in Sport and Adventure Tourism.

HTM 381 EXECUTIVE HOUSEKEEPING MANAGEMENT

(Class 1, Lab. 4, Cr. 3)

Prerequisite: HTM 181 and HTM 231

Management principles and practice relative to the internal maintenance of public lodging facilities. Experience in room preparation, cleanliness, tools, record, keeping and departmental organization.

HTM 385 EDUCATIONAL CRUISE STUDY

(Class 3, Cr. 3) Experiential Learning

Prerequisites: 21 years of age and valid passport

Exploration of the Cruise Line Industry with a focus on hospitality and leisure management, as well as the Cruise industry history and marketing operations. Includes experiential learning multi-day cruise component with land and sea lectures, tours, and exposure to many languages/cultures. Repeatable to a maximum of 6 credits.

HTM 390 UNDERGRADUATE SPECIAL PROBLEMS

(Cr. 0 to 6)

Repeatable to a maximum of six (6) credits. Credits and hours arranged. Open to HTM majors only or by consent of Instructor. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas of the hospitality or tourism field.

HTM 391 SPECIALTY FOODSERVICE AND CATERING.

(Class 1, Lab. 1 to 6, Cr. 3)

Prerequisite: HTM 291

Exploration and creative use of specialty foods and unusual cuisine for the hospitality field. Concepts of management for the effective operation of quantity specialty food service organizations within a financial framework involving menu-planning, customer-relations, and production service logistics.

HTM 411 HOSPITALITY AND TOURISM LAW

(Class 3, Cr. 3)

Prerequisite: HTM 212 and HTM 301

Rights and duties of innkeepers, food operators and tourism organizations. Topics include civil rights, contracts, negotiable instruments.

HTM 419 SENIOR SEMINAR IN HOSPITALITY AND TOURISM MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: Classification 7 or higher or consent of Instructor.

The exploration, discussion and presentation of current research concerned with or related to the hospitality and tourism management industry.

HTM 491 BEVERAGE MANAGEMENT

(Class 2, Cr. 2)

Student must be minimum 21 years of age and HTM major. Principles and practices regarding the production, selection, purchasing, storage, and service of alcohol beverage in the hospitality industry. Certification in a Responsible Beverage Service Course is required to earn credit.

HTM 492 ADVANCED FOODSERVICE MANAGEMENT

(Class 1, Lab. 7, Cr. 4) Experiential Learning

Prerequisite: HTM 212 and HTM 291 and HTM 311 and HTM 341 and a classification 7 or higher.

Utilize managerial skills and techniques with planning, organizing, directing and controlling a full service restaurant operation. Management teams of two to three students develop, market, and operate an international theme restaurant that is open to the public. Emphasis is placed on utilizing effective management skills to create a high quality, profitable operation with well planned systems and highly motivated, organized employees.

HTM 499 FEASIBILITY STUDIES AND BUSINESS DEVELOPMENT HOSPITALITY

(Class 3, Cr. 3)

Prerequisite: HTM 212 and HTM 231 and HTM 241 and a classification 7 or higher.

The study of business development. The course will cover all stages of feasibility and development activities with emphasis on strategic planning, design of systems and models and problem analysis.

Interdisciplinary Studies

IDIS 270 AFRICAN AMERICAN EXPERIENCE

(Class 3, Cr. 3)

Dimensions of the African American experience, including history, education, politics, psychology, economics, religion, social organization and art will be covered.

IDIS 270A CONTACT UNIVERSITY DIVISION FOR INFORMATION RELATING TO THIS COURSE

(Class 3, Cr. 3)

219-989-2339 contact the specific department for additional information.

IDIS 330 INTRODUCTION TO JEWISH STUDIES

(Class 3, Cr. 3)

Also cross-listed as HIST 349 and POL 349.

An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present. The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts from Judaism, such as God, Torah, People, Land, and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture.

IDIS 490 DIRECTED READING IN INTERDISCIPLINARY STUDIES

(Cr. 1 to 3)

Reading under the direction of the instructor in a particular field of study.

IDIS 491 SPECIAL TOPICS IN INTERDISCIPLINARY STUDIES

(Class 1 to 3, Cr. 1 to 3)

Topics may vary.

Industrial Engineering

IE 530 QUALITY CONTROL

(Class 3, Cr. 3)

Prerequisite: IE 330 or STAT 516

Principles and practices of statistical quality control in industry. Control charts for measurements and for attributes. Acceptance sampling by attributes and by measurements. Standard sampling plans. Sequential analysis. Sampling inspection of continuous production.

IE 536 STOCHASTIC MODELS IN OPERATIONS RESEARCH I

(Class 3, Cr. 3)

Prerequisite: IE 336

An introduction to techniques for modeling random processes used in operations research. Markov chains, continuous time Markov processes, Markovian queues, reliability and inventory models.

IE 590 TOPICS IN INDUSTRIAL ENGINEERING

(Cr. 1 to 6)

Credit and hours to be arranged. Selected topics in industrial engineering for seniors and graduate students. May be repeated with permission of advisor.

Industrial Engineering Technology

IET 104 INDUSTRIAL ORGANIZATION

(Class 3, Cr. 3)

A detailed survey of organizational structures; operational, financial, marketing, and accounting activities; duties of management, planning, control, personnel, safety, wages, policy, and human factors necessary for effective management.

IET 106 PRINCIPLES OF ERGONOMICS

(Class 3, Cr. 3)

This course is designed for students interested in the areas of engineering technology, industrial/operations management, and occupational health. An understanding of how to prevent musculoskeletal disorders and improve manual working conditions will be gained through the use of applicable real life exercises and exploration of research in various industries. This course will cover a general study of the musculoskeletal system as well as guidelines for lifting, reaching, seated work, machine work, hand tools and vibration.

IET 204 TECHNIQUES OF MAINTAINING QUALITY

(Class 2, Lab. 2, Cr. 3 or Class 2, Lab. 3, Cr. 3)

Prerequisite: MA 111 and MA 112 or MA 148

An analysis of the basic principles of quality control. Includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air and light devices for checking and measuring to determine quality levels of acceptance.

IET 224 PRODUCTION PLANNING AND CONTROL

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

Prerequisite: STAT 301

Applications include the integration of concepts in operations and quantitative methods to analyze production/service situations and highlight ways of improving quality, productivity and efficiency, while meeting customer requirements. Topics include product/service design, capacity planning, process capabilities, forecasting, scheduling, and inventory management.

IET 224 THIS COURSE FOCUSES ON PRODUCTION PLANNING, CONTROL, AND SERVICE ENVIRONMENTS

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

Prerequisite: STAT 301

Applications include the integration of concepts in operations and quantitative methods to analyze production/service situations and highlight ways of improving quality, productivity and efficiency, while meeting customer requirements. Topics include product/service design, capacity planning, process capabilities, forecasting, scheduling, and inventory management.

IET 264 FUNDAMENTALS OF LEAN WORK DESIGN

(Class 2, Lab. 2, Cr. 3)

Fundamentals of problem solving applied to methods design. Application of methods tools and work measurement. Includes time study, predetermined time systems, work sampling and computer based standard time data. This course focuses on methods design. Fundamental problem solving techniques and Lean methodology are applied to solve work methods issues and design proper work systems. Work methods tools are used to conduct macro and micro system analysis and various work measurement techniques are learned including time study, predetermined time sampling and computer based standard time data.

IET 272 JOB EVALUATION

(Class 2, Cr. 2 or Class 3, Cr. 3)

A survey of the basic principles and significance of job evaluation. An analysis of current practices and techniques used in job analysis, job descriptions, and job evaluation.

IET 299 INDUSTRIAL ENGINEERING TECHNOLOGY

(Class 0 to 4, Lab. 0 to 9, Cr. 0 to 9)

(Course may be repeated for credit up to nine hours.)

Hours and subject matter to be arranged by staff.

IET 308 ENGINEERING PROJECT MANAGEMENT AND ECONOMIC ANALYSIS

(Class 3, Cr. 3)

Introduction to principles of engineering project management and techniques.

Topics include technical feasibility studies, project specifications, scheduling, validation, lifecycle costing, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control.

IET 310 PLANT LAYOUT AND MATERIAL HANDLING

(Class 3, Cr. 3)

Prerequisite: MET 100 and IET 264

Plant layout involves the design of a production system. The layout must provide for machines, work places, material handling systems, and storage in the capacities necessary so feasible schedules can be met for parts and products; auxiliary services such as offices, shipping and handling, security, maintenance, etc., must support the firm's requirements for safe and efficient production. The design of this system must possess an appropriate degree of flexibility to cope with future design change, new products, volume variations and advancing technology.

IET 311 INTERNATIONAL QUALITY STANDARDS

(Class 3, Cr. 3)

This course addresses what compliance with ISO and other international standards means to an organization and how an organization may attain certification. Students will gain a working understanding of standards, requirements, and methodologies of compliance. Emphasis will be on how implementation of the standards can serve as one of the building blocks of an organization's quality system.

IET 325 ESSENTIAL LOGISTICS

(Class 3, Cr. 3)

Prerequisite: IET 224

Students shall learn the elements of business objective logistics, increase of greater asset productivity, building customer loyalty and market share. Integration of real-time information technology to make production and distribution more efficient, global competition and global technology and elimination of lengthy distribution channels.

IET 355 STATISTICAL PROCESS CONTROL I

(Class 3, Cr. 3)

Prerequisite: STAT 301

Evaluation, analysis and installation of various procedures that comprise total quality control. Market research, product design, manufacturing planning, purchasing, production, and delivery are covered. Data analysis, quality improvement, quality design and vendor relations are included.

IET 365 STATISTICAL PROCESS CONTROL II

(Class 3, Cr. 3)

Prerequisite: IET 355

A continuation of IET 355. Product control and acceptance techniques, customer relations, and quality assurance are covered.

IET 378 PRINCIPLES OF TOTAL QUALITY MANGEMENT

(Class 3, Cr. 3)

Prerequisite: BHS 201 or STAT 301

Not open to students with credit in MGMT 333 A survey of the principles used by successful organizations in implementing Total Quality Management. Included are methods used to demonstrate the need for TQM and to involve top management. Principles of participative management and of continuous improvement will be included. Examples of specific programs in several successful organizations will be examined.

IET 411 APPLICATIONS OF LEAN AND SIX SIGMA METHODOLOGIES

(Class 3, Cr. 3)

Prerequisite: IET 378 and IET 355

This hands-on course focuses on emerging business practices that are geared toward making an organization more effective and efficient. Highlighted topics will include use of lean and six sigma methodologies in today's business environments. These methods are used for achieving long term profits through customer satisfaction, waste elimination and elevation of employee skills to eliminate waste and

defects at the source. Application of these methods in various environments such as service, health care and manufacturing organizations will be explored. Students are expected to work in teams to apply systematic problem solving processes to solve case studies and/or real-world issues. Supporting concepts such as implementation of new business practices and culture changes will also be explored.

IET 450 PRODUCTION COST ANALYSIS

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

An introduction to financial statements and to the study of the costs of production in terms of breakeven and least cost alternatives, including present and future costs when related to time value of money, budgeting, labor and overhead, production cost control and the role of the supervisor and the engineering technologist to cost control computer applications for determining rate of return for complex problems are introduced.

IET 495 SENIOR PROJECT SURVEY

(Class 1, Cr. 1) Experiential Learning

Students will consider several projects and develop a topic for the following IET 497 course. They will develop project scope, establish time schedules, and give a written and oral report on their proposal.

IET 497 SENIOR PROJECT

(Class 2, Lab. 2, Cr. 3) Experiential Learning

Hours to be arranged. Directed work on individual projects for senior industrial engineering technology students.

IET 499 INDUSTRIAL ENGINEERING TECHNOLOGY

(Class 1 to 4, Lab. 1 to 9, Cr. 1 to 9)

Hours and subject matter to be arranged by staff. Course may be repeated for credit.

Industrial Technology

IT 507 MEASUREMENT AND EVALUATION IN INDUSTRY AND TECHNOLOGY

(Class 3, Cr. 3)

An introduction to measurement strategies in industrial, technical, and human resource development environments. The evaluation of measurement outcomes will be the primary focus of the course.

IT 508 QUALITY AND PRODUCTIVITY IN INDUSTRY AND TECHNOLOGY

(Class 3, Cr. 3)

Examines the contemporary issues of continuous improvements in quality and productivity in manufacturing and service industries. Includes a close examination of the evolving philosophies bearing on the scope, improvement, and cost of quality assurance programs in industry and technology.

Italian

ITAL 101 ITALIAN LEVEL I

(Class 3, Lab. 1, Cr. 3)

Introduction to Italian.

ITAL 102 ITALIAN LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: ITAL 101

Continuation of ITAL 101 (Italian Level I)

ITAL 201 ITALIAN 201 - LEVEL III

(Class 3, Cr. 3)

Prerequisite: ITAL 102

This course is an elective for students in the University schools and departments who wish to choose Italian in order to meet the mandated two years language requirements. It forms the basis of a four semester sequence to deepen the mastery of another language as well as the foundation for additional knowledge of the business, cultural and literary practices of Italy.

ITAL 202 ITALIAN LEVEL IV

(Class 3, Cr. 3)

Prerequisite: ITAL 201

This course offers another choice in order to fulfill the foreign language requirements as well as providing the community with additional educational options.

Information Technology Systems

ITS 100 INFORMATION TECHNOLOGY FUNDAMENTALS

(Class 3, Cr. 3)

This is the freshman experience course that also covers pervasive themes in IT, organization issues and history of IT, IT and its related informing disciplines, application domains, computer math and other IT topics.

ITS 110 WEB SYSTEMS TECHNOLOGY

(Class 2, Lab. 2, Cr. 3)

This course covers web technologies, information architecture, digital media, web development, vulnerabilities, social software and other topics.

ITS 120 INFORMATION TECHNOLOGY INTERACTION

(Class 2, Lab. 2, Cr. 3)

This course covers human factors, HCI aspects of application domains, human-centered evaluation, developing effective interfaces, accessibility, emerging technologies, human-centered software and other topics.

ITS 130 PLATFORM TECHNOLOGIES

(Class 2, Lab. 2, Cr. 3)

This course covers architecture and organization, computer infrastructure, enterprise deployment software, firmware, hardware and other topics.

ITS 135 OPERATING SYSTEMS TECHNOLOGIES

(Class 2, Lab. 2, Cr. 3)

This course covers operating systems concepts, applications, administrative activities, installation, customization, maintenance, security and other topics.

ITS 170 NETWORK TECHNOLOGIES

(Class 2, Lab. 2, Cr. 3)

This course covers routing and switching, physical layer, foundation of networking, security, application considerations, network management and other topics.

ITS 199 TOPICS IN INFORMATION TECHNOLOGY I

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

This course covers topics in information technology or security topics.

ITS 200 ETHICAL AND LEGAL ISSUES IT

(Class 3, Cr. 3)

This course covers professional communications, social context of computing, teamwork concepts and issues, intellectual properties, legal issues in computing, organization context, professional and ethical issues, responsibilities, privacy and civil liberties and other topics.

ITS 240 PROGRAMMING FUNDAMENTALS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MA 205

This course covers fundamental data structures, fundamental programming constructs, object-oriented programming, algorithms and problem solving, event-driven programming, recursion and other topics.

ITS 245 INTEGRATIVE PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 240

This course covers scripting techniques, integrative coding, overview of program languages, software security practices, data mapping and exchange, emerging technologies, intersystem communication, and other topics.

ITS 250 FUNDAMENTALS OF INFORMATION ASSURANCE

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 135 and ITS 170

This course covers security mechanisms, fundamental aspects, operational issues, policy, attacks, security domains, forensics, information states, security, threat analysis, vulnerabilities, and other topics.

ITS 260 APPLIED DATABASE TECHNOLOGIES

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 240

This course covers database query languages, information management concepts and fundamentals, data organization, data modeling, managing the database environment, special purpose databases, and other topics.

ITS 270 INTERNETWORKING TECHNOLOGIES

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 170

This course covers requirements, acquisition/sourcing, integration, project management, testing and quality assurance, organizational context, architecture and other topics.

ITS 299 TOPICS IN INFORMATION TECHNOLOGY II

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

This course covers topics in information technology or security topics.

ITS 300 SIMULATION AND GAME DEVELOPMENT I

(Class 2, Lab. 1, Cr. 3)

Prerequisite: ITS 245

This course covers the concepts, methods and techniques of simulation and game development programming. This course focuses on the mathematics, related to game development, game and simulation programming techniques, algorithm design, data structures, game-specific software development, as well as the technical aspects of game testing. Extensive laboratory exercises are assigned.

ITS 330 ADVANCED OPERATING SYSTEMS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 130 and ITS 135

This course covers the comparison and contrast of operating systems, the detailed examination of architecture, customization and implementation of the features of specific operating systems. Extensive laboratory exercises are assigned.

ITS 340 ADVANCED PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 245

This course covers advanced topics in programming languages, GUI development, threaded applications, components, testing and debugging, methods and advanced topics in event-driven and object oriented programming techniques. Extensive laboratory exercises are assigned.

ITS 350 SYSTEMS ASSURANCE

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 250

This course covers the implementation of systems assurance with computing systems. Topics include confidentiality, integrity, authentication, non-repudiation intrusion detection, physical security, and encryption. Extensive laboratory exercises are assigned.

ITS 352 DISASTER RECOVERY AND PLANNING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 350

This course covers risk management and business continuity. Topics include disaster recovery strategies, mitigation strategies, risk analysis, and development of contingency plans for unexpected outages and component failures. Extensive laboratory exercises are assigned.

ITS 354 INFORMATION ASSURANCE RISK ASSESSMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 350

This course covers industry and government requirements and guidelines for information assurance and auditing of computing systems. Topics include risk assessment and implementation of standardized requirements and guidelines.

ITS 356 SECURING WIRELESS SYSTEMS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 250

This course covers the implementation of secure wireless systems and computing systems. Topics, intrusion detection, physical security, communications security, and encryption with wireless systems. Extensive laboratory exercises are assigned.

ITS 360 DISTRIBUTED APPLICATION ARCHITECTURE AND DESIGN

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 260

This course covers the application development life cycle, modeling techniques, software architecture, design patterns, best practices, and development strategies. Extensive laboratory exercises are assigned.

ITS 362 DISTRIBUTED APPLICATION DEVELOPMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 360

This course is a project oriented course in multi-tier application development, interface design and implementation, component based application development, and configuration of multi-tier applications. Extensive laboratory exercises are assigned.

ITS 364 DATABASE MODELING AND IMPLEMENTATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 360

This is an advanced course that covers the design of distributed databases, data modeling, normalization rules, query languages, layout and design of forms, transaction management, and implementation of the database design. Extensive laboratory exercises are assigned.

ITS 370 DATACOMMUNICATIONS AND NETWORKING

(Class 3, Cr. 3)

Prerequisite: ITS 270

This course covers the configuration of networks and communication conduits, error detection and correction, media, and the open system model.

ITS 372 SYSTEM ADMINISTRATION AND MANAGEMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 270

This course covers system performance analysis, benchmarking, acceptance testing, security strategies, file systems analysis, auditing, server roles, and best practices. Extensive laboratory exercises are assigned.

ITS 399 TOPICS IN INFORMATION TECHNOLOGY III

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

This course covers topics in Information Technology or Security topics.

ITS 400 SIMULATION & GAME DEVELOPMENT II

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 300

This course is a continuation on ITS 300 covering advanced technical aspects of simulation and game development including technology synthesis, system architectures for real-time game and simulation, network, data driven systems, and artificial intelligence. Extensive laboratory exercises are assigned.

ITS 404 SYSTEM MODELING AND SIMULATION

(Class 2, Lab. 1, Cr. 3)

Prerequisite: ITS 400

This course details topics on modeling and simulation, real-time systems, rendering engines, gaming engines, gaming logic, and interactivity. It addresses a detailed study of how games function to create experiences, including rule design, play mechanics, game balancing, social game interaction, and the intergration of visual, audio, tactile textural elements into total game experience.

ITS 409 TOPICS IN SIMULATION AND GAME DEVELOPMENT

(Class 3, Cr. 3)

Prerequisite: ITS 404

This course covers special topics and emerging technologies in Simulation and Game development.

ITS 430 SYSTEMS PROGRAMMING

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 340

This course covers multiple platform scripting tools and script development for customization of systems features, batch operations, and automated system management. Extensive laboratory exercises are assigned.

ITS 450 SOFTWARE ASSURANCE

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 352

This course covers defensive programming techniques, bounds analysis, error handling, advanced testing techniques, detailed code auditing, software specification in a trusted assured environment. Extensive laboratory exercises are assigned.

ITS 452 COMPUTER FORENSICS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 354

This course covers the techniques used in the forensic analysis of computerized systems for gathering evidence to detail how a system has been exploited or used. Extensive laboratory exercises are assigned.

ITS 454 ASSURED SYSTEMS DESIGN AND IMPLEMENTATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 450 and ITS 452

This course covers the design and implementation of assured systems in an enterprise environment. Topics include hardening of operating systems, choice of platforms, design criteria within the assured system domain. Extensive laboratory exercises are assigned.

ITS 459 TOPICS IN INFORMATION ASSURANCE AND SECURITY

(Class 3, Cr. 3)

Prerequisite: ITS 450 and ITS 452

This course covers special topics and emerging technologies in information assurance and security.

ITS 460 DISTRIBUTION APPLICATION CONFIGURATION AND MANAGEMENT

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 362 and ITS 364

This course covers application deployment techniques, life cycle management, performance testing and tuning, maintenance, and quality assurance. Extensive laboratory exercises are assigned.

ITS 462 APPLICATION INTEGRATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 460

This course covers service oriented computing, integration of disparate enterprise applications, and implementing interfaces between platforms and applications. Extensive laboratory exercises are assigned.

ITS 469 TOPICS IN DISTRIBUTED ENTERPRISE APPLICATION

(Class 3, Cr. 3)

Prerequisite: ITS 460

This course covers special topics and emerging technologies in distributed enterprise applications

ITS 470 LARGE SCALE HIGH PERFORMANCE SYSTEMS

(Class 3, Cr. 3)

Prerequisite: ITS 370 and ITS 372

This course covers the configuration of networks and communication conduits, error detection and correction, media, and the open system model. Extensive laboratory exercises are assigned.

ITS 472 NETWORK DESIGN AND IMPLEMENTATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ITS 470

This course covers the design and implementation of enterprise level networks. Topics include network topologies, protocols, technologies, services, design and architecture and implementation of the network design. Extensive laboratory exercises are assigned.

ITS 479 TOPICS IN NETWORKING

(Class 3, Cr. 3)

Prerequisite: ITS 470

This course covers special topics and emerging technologies in networking.

ITS 480 IT PROJECT DEVELOPMENT AND MANAGEMENT

(Class 4, Cr. 4)

Prerequisite: ITS 350 or ITS 360 or ITS 370 or ITS 372

This course covers the planning, design, selection, and project management of information technology systems. This course contains the development of requirements, configuration of hardware and software, management of the procurement and implementation process, performance requirements, contract negotiation, and legal issues within a comprehensive project.

ITS 490 SENIOR PROJECT/UNDERGRADUATE RESEARCH

(Class 3, Cr. 3)

Prerequisite: ITS 459 or ITS 469 or ITS 479

This capstone course brings together the different domains of Information Technology. This course contains topics of distributed application development,

networking, information assurance and security that integrate around and an unconstrained problem of substantial complexity with an undefined solution and the implementation of the design solution.

ITS 499 TOPICS IN INFORMATION TECHNOLOGY IV

(Class 0 to 4, Lab. 0 to 4, Cr. 1 to 4)

This course covers topics in information technology or security topics.

Japanese

JPNS 101 JAPANESE LEVEL I

(Class 3, Lab. 1, Cr. 3 or Class 3, Lab. 2, Cr. 4)

A basic study of standard Japanese. Students will be introduced to spoken and written forms of the language from the beginning. Language form and use are emphasized, along with relevant cultural aspects. Hiragana and Katakana.

JPNS 102 JAPANESE LEVEL II

(Class 3, Lab. 1, Cr. 3 or Class 3, Lab. 2, Cr. 4)

Prerequisite: JPNS 101

A continuation of the study of elementary Japanese. Task-oriented activities will be incorporated to encourage language use as well as pattern practice for linguistic accuracy. Relevant cultural aspects will be included. 50 Kanji.

JPNS 201 JAPANESE LEVEL III

(Class 3, Lab. 1, Cr. 3 or Class 3, Lab. 2, Cr. 4)

Prerequisite: JPNS 102

A study of intermediate Japanese. Occasional use of authentic materials for listening and reading practice. Task-oriented exercises, communicative activities, and pattern practice are used to facilitate learning of the spoken and written language. 60 Kanji.

JPNS 202 JAPANESE LEVEL IV

(Class 3, Lab. 1, Cr. 3 or Class 3, Lab. 2, Cr. 4)

Prerequisite: JPNS 201

A continuation of intermediate Japanese. Active use of authentic materials for listening and reading practice. Task-oriented activities, communicative activities, and pattern practice are used to facilitate learning of the spoken and written language. 60 Kanji.

Latin American Studies

LAS 201 THE HISPANIC AMERICAN EXPERIENCE

(Class 3, Cr. 3)

Dimensions of the Hispanic American, including history, education, politics, psychology, economics, religion social organization and art are topics covered in this course.

LAS 271 LATIN AMERICA TO 1824

(Class 3, Cr. 3)

A survey of Latin American history from its origins to the end of the major movements toward independence, with emphasis on discovery, colonization, expansion, and the transfer of institutions from Spain and Portugal.

LAS 272 LATIN AMERICAN SINCE 1824

(Class 3, Cr. 3)

A survey of Latin American History from independence to the present with particular attention on political, economic, social problems connected with modernization.

LAS 330 US AND LATIN AMERICA

(Class 3, Cr. 3)

This course will explore political, economic and social aspects of relations between the United States and various Latin American Nations from independence to the present.

LAS 340 LATIN AMERICAN POPULATION ISSUES

(Class 3, Cr. 3)

Explores demographic changes and migration trends relating to Latin America. Topics addressed will include internal and external migration, birth rates and international population policy.

LAS 373 THE CARIBBEAN

(Class 3, Cr. 3)

Will explore various topics and issues unique to the Caribbean. Emphasis will be placed on European and African influence on the complex nature of Caribbean history, languages, literature, societies and cultures. Students may take the course for credit in either Latin American Studies or History, but not both.

LAS 376 LATIN AMERICAN CINEMA

(Class 2, Lab. 2, Cr. 3)

A study of films produced in Latin America or addressing Latin American topics/issues. Students will engage in critical analysis of the films, and expect to develop greater understanding of the social context of subjects introduced. May include documentaries or feature films. Approximately 2 hours each week will be devoted to viewing films and 2 hours to class lecture/discussion.

LAS 377 LATINO/HISPANIC CINEMA

(Class 2, Lab. 2, Cr. 3)

A study of films produced by Hispanic-Americans and/or depicting the Hispanic American experience. Students will engage in critical analysis of the films and expect to develop greater understanding of the social context of subjects introduced. May include documentaries or feature films. Approximately two hours each week will be devoted to viewing films, and two hours to class lecture/discussion.

LAS 390 LATIN AMERICAN THEMES OF CULTURE, POLITICS AND ECONOMY

(Class 3, Cr. 3)

Topics addressed will include general themes of culture and political economy in Latin America.

LAS 450 HISPANIC HERITAGE OF THE CALUMET REGION

(Class 3, Cr. 3)

An exploration of the history of Hispanic immigration into the Calumet Region. The course will include an examination of cultural diversity, politics, community organizations, and contributions of local Hispanic-Americans.

LAS 472 HISTORY OF MEXICO

(Class 3, Cr. 3)

A history of the Mexican people from the pre-Columbian period to the present. Special emphasis is placed on the successful social revolutions that led to the development of today's dynamic nation.

LAS 480 PRACTICUM IN LATIN AMERICAN STUDIES

(Class 1 to 3, Cr. 1 to 3)

This course is designed to offer students credit for field experience in Latin American Studies. Work may include study abroad, community service or research. May be repeated for additional credit.

LAS 490 TOPICS IN LATIN AMERICAN STUDIES

(Class 3, Cr. 3)

Special topics course designed to address various subjects. This course may be repeated for credit. Variable title.

LAS 490A STUDENTS WILL EXPLORE THE HISTORY OF MEDIA IN LATIN AMERICA AND ITS RELATION TO POLITICAL DEVELOPMENTS IN THAT REGION

(Class 3, Cr. 3)

Political and media issues in Mexico, Nicaragua, and Venezuela will be addressed. Specific attention will be paid to political relations between United States and Latin America and their influence on the generation of information. By the end of the course, students should be able to identify many of the political and social relations connected to media structures and communication and cultural content in several Latin American nations. May 15–June 1 MTWR 12:30–3:30 on Purdue Calumet June 3–11 Experiential tour in Venezuela Cost: \$2500 includes tuition, airfare, lodging, educational tours, translation, two meals per day, transportation in Venezuela and travelers insurance. \$1000 deposit due May 1st

LAS 490B LATIN AMERICAN STUDIES

(Class 3, Cr. 3)

In this course, students will explore aspects of Latino culture in the United States, using neighborhoods, and develop context through readings and discussions on topics of art, literature, religion, politics, lifestyle, economics, education, language and history. Field trips will be made to the following areas: Hammond (art, politics), East Chicago (religion, education), Pilsen Little Village (history, art), Humbolt Park–Logan Square (diversity, food), South Lake County (lifestyle, economics)

Lithuanian

LTHN 101 LITHUANIAN LEVEL I

(Class 3, Lab. 1, Cr. 3)

This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

LTHN 102 LITHUANIAN LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: LTHN 101

This course stands as an elective for students in other University departments. The course is a contributions to intellectual growth and development as well as a service to the community.

Mathematics

NOTE: Must receive a C or better in all Math prerequisite courses.

MA 021 BEGINNING ALGEBRA

(Class 4)

Prerequisite: 113 Arithmetic CPT or 031 Elementary Algebra CPT or 360 SAT Mathematics or 360 ACT Math/converted SAT

Beginning level course in Algebra. CREDIT: One unit for admission.

MA 031 GEOMETRY

(Class 4)

Beginning level course in geometry. Credit: One unit for admissions.

MA 041 INTERMEDIATE ALGEBRA

(Class 3)

The purposes of this course are to strengthen and expand the students basic algebraic skills and problem-solving capabilities and to prepare them for higher level mathematics courses.

MA 100 AN INTRODUCTION TO MATHEMATICAL SCIENCES

(Class 1, Cr. 1)

This course is intended to: integrate freshman mathematics majors into the department, help them adjust to university life, assist them in developing their academic and intellectual capabilities; introduces them to contemporary issues in mathematics, provide an overview of the careers open to those with degrees in mathematics. This course must be taken Pass/No Pass only. Credit by exam is not available for this course.

MA 115 INTERMEDIATE ALGEBRA

(Class 3, Cr. 3)

Prerequisite: MA 021 or 016 College Level Mathematics CPT or 400 SAT Mathematics or 400 ACT Math/converted SAT

The purpose of this course is to strengthen and expand students' basic algebraic skills and problem-solving capabilities and to prepare them for higher mathematics courses. For the purposes of general education requirements MA 115 is not a collegiate level mathematics course, and therefore cannot be used to satisfy the general education requirement for mathematics at Purdue University Calumet.

MA 137 MATHEMATICS FOR ELEMENTARY TEACHERS I

(Class 3, Cr. 3)

Prerequisite: 83 Elementary Algebra or CPT 400 SAT Mathematics or 400 ACT Math/converted SAT

Designed for prospective elementary school teachers. Problem solving. Numerical reasoning including self-generated and conventional algorithms. Whole and fractional number systems, elementary number theory. (At Purdue University West Lafayette, not available for credit in the School of Science.)

MA 138 MATHEMATICS FOR ELEMENTARY TEACHERS II

(Class 3, Cr. 3)

Prerequisite: MA 137 with a C or better

Continues the study of number systems through integers, rational numbers and real numbers. Quantitative and proportional reasoning is a foundation for algebraic reasoning. Elementary statistical and probabilistic reasoning. (Not available for credit in the School of Science.)

MA 139 MATHEMATICS FOR ELEMENTARY TEACHERS III

(Class 3, Cr. 3)

Prerequisite: MA 137 with a C or better

Geometric, measurement and spatial reasoning in one, two and three dimensions

as the basis for elementary school geometry. Metric and non-metric geometry, transformation geometry. (At Purdue University West Lafayette, not available for credit in the School of Science.)

MA 147 ALGEBRA AND TRIGONOMETRY FOR TECHNOLOGY

(Class 3, Cr. 3)

Prerequisite: MA 041 and MA 031 or MA 115 with a C or better or College Level Math CPT 51
NOT OPEN TO STUDENTS WITH CREDIT IN MA 151 OR 153

MA 147 and 148 is a two semester sequence in algebra and trigonometry for students in technology. The emphasis is on technique and problem solving. MA 147 concentrates on topics in algebra.

MA 148 ALGEBRA AND TRIGONOMETRY FOR TECHNOLOGY II

(Class 3, Cr. 3)

Prerequisite: MA 147 with a C or better or College Level Math CPT 76

Not open to students with credit in MA 151 or MA 154.

Continuation of MA 147. MA 148 concentrates on trigonometry.

MA 153 ALGEBRA AND TRIGONOMETRY I

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: MA 031 and MA 041 or MA 115 with a C or better or College Level Math CPT 51 - NOT open to students with credit in MA 147, 148, or 151.

The content of MA 153, 154 is similar to that of MA 151 but the pace and emphasis is directed to students who do not intend to take MA 163. MA 153 is College Algebra.

MA 154 ALGEBRA AND TRIGONOMETRY II

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: MA 153 with a C or better or College Level Math CPT 76 - NOT open to students with credit in MA 148 or 151.

Continuation of MA 153. MA 154 is Trigonometry.

MA 159 PRECALCULUS

(Class 5, Cr. 5)

Prerequisite: MA 031 and MA 041 or College Level Math CPT 76

Algebra and Trigonometry topics designed to prepare students for calculus.

MA 163 INTEGRATED CALCULUS AND ANALYTIC GEOMETRY I

(Class 5, Cr. 5) TRANSFER IN

Prerequisite: MA 151 or MA 159 with a C or better or College Level Math CPT 101

Topics from plane analytic geometry. Introduction to differentiation and integration. Applications.

MA 164 INTEGRATED CALCULUS AND ANALYTIC GEOMETRY II

(Class 5, Cr. 5) TRANSFER IN

Prerequisite: MA 163 with a C or better

Continuation of MA 163. Completion of introductory study of topics in plane analytic geometry and the calculus of one variable, infinite series.

MA 205 DISCRETE MATHEMATICS FOR COMPUTER TECHNOLOGY

(Class 3, Cr. 3)

Prerequisite: MA 147 or MA 153 with a C or better or College Level Math CPT 76

The course covers topics in discrete mathematics which are essential to the discipline of computer technology. These include: logic, sequences, mathematical induction, basic set theory, functions, recursion, relations, graphs, and trees.

MA 214 LINEAR ALGEBRA AND LINEAR PROGRAMMING

(Class 3, Cr. 3)

Prerequisite: MA 153 with a C or better

Matrix algebra, systems of equations, topics from discrete mathematics.

MA 219 CALCULUS FOR TECHNOLOGY I

(Class 4, Cr. 4)

Prerequisite: MA 148 with a C or better or College Level Math CPT 101 - Not open to students with credit in MA 163, MA 223 or MA 225.

MA 219 and 222 is a two semester sequence in the techniques of calculus for student enrolled in certain technical curricula. MA 219 develops topics from analytic geometry and introduces differentiation and integration differentiation. The offering pattern depends on the term offered.

MA 222 CALCULUS FOR TECHNOLOGY II

(Class 3, Cr. 3)

Prerequisite: MA 221 with a C or better - NOT open to students with credit in MA 224 or 164.

Covers differentiation and integration of trigonometric, exponential, and logarithmic functions, infinite series, and first-order differential equations.

MA 223 INTRODUCTORY ANALYSIS I

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: MA 154 with a C or better or College Level Math CPT 101

MA 223 and 224 form a two-course sequence and provide an introduction to the differential and integral calculus of one and several variables, and elementary differential equation, with applications to business, behavioral and biological sciences. Students may not have credit in more than one of the following: MA 163, MA 221, MA 223 or MA 225.

MA 224 INTRODUCTORY ANALYSIS II

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: MA 223 with a C or better

NOT open to students with credit in MA 164 or 222.

Continuation of MA 223.

MA 225 CALCULUS FOR BUSINESS AND ECONOMICS

(Class 3, Cr. 3)

Prerequisite: MA 153 with a C or better or College Level Math CPT 76

Functions and Limits. Differentiation and integration of algebraic functions of one variable. Applications of differentiation and integration. Not open to students with credit in MA 163, MA 221 or MA 223.

MA 261 MULTIVARIATE CALCULUS

(Class 4, Cr. 4)

Prerequisite: MA 164 with a C or better

Solid analytic geometry, partial differentiation, multiple integrals.

MA 264 DIFFERENTIAL EQUATIONS

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

Not open to students with credit in MA 262 A first course in ordinary differential equations. First order differential equations, linear and nonlinear systems of differential equations, and second order differential equations.

MA 265 LINEAR ALGEBRA

(Class 3, Cr. 3)

Prerequisite: MA 164 with a C or better

Not open to students with credit in MA 262 An introduction to linear algebra. Systems of linear equations, matrix algebra, vector spaces, determinants, eigenvalues, eigenvectors, diagonalization of matrices, applications.

MA 312 PROBABILITY

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

A calculus-based introduction to probability theory and stochastic processes. Topics include probability spaces, random variables, distributions, expectation conditional probability, and discrete-state-space Markov chains.

MA 315 INTRODUCTION TO ABSTRACT MATHEMATICS

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

This course is a bridge from the mainly computational mathematics courses to the upper-level abstract courses. It focuses on the development of students' abilities to construct proofs, examples and counterexamples.

MA 330 CONCEPTS IN GEOMETRY

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

Fundamental concepts in geometry. Euclidean, non-Euclidean (including spherical and hyperbolic geometry), and fractal geometry.

MA 345 CODING AND INFORMATION THEORY

(Class 3, Cr. 3)

Prerequisite: MA 265 with a C or better

An introduction to topics in coding and information theory: error-detecting and error-correcting codes, variable-length codes, decoding, entropy, information, channel capacity, Shannon's theorems, basics of algebraic coding theory.

MA 348 DISCRETE MATHEMATICS

(Class 3, Cr. 3)

Prerequisite: MA 265 with C or better required.

A problem-centered introduction to topics in discrete mathematics including induction, permutations, combinations graphs, recurrence relations and generating functions.

MA 351 ELEMENTARY LINEAR ALGEBRA

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

Not open to students with credit in MA 265 or 350

Systems of linear equations, finite dimensional vector spaces, matrices, determinants, applications to analytical geometry.

MA 446 INTRODUCTION TO REAL ANALYSIS

(Class 3, Cr. 3)

Prerequisite: MA 265 and MA 264 and MA 315 with a C or better

An introduction to basic concepts of real analysis. Topology of the real line, sequences, series, and various forms of convergence. Applications to derivatives and integrals.

MA 453 ELEMENTS OF ALGEBRA

(Class 3, Cr. 3)

Prerequisite: MA 265 and MA 315 with a C or better

Some basic properties of integers, polynomials, and fields (subfields) of the complex numbers, finite fields with emphasis on concrete examples and applications.

MA 454 GALOIS THEORY

(Class 3, Cr. 3)

Prerequisite: MA 453

Field extensions and automorphisms. Galois Theory.

MA 472 INTRODUCTION TO APPLIED MATHEMATICS

(Class 3, Cr. 3)

Prerequisite: MA 265, MA 264 and CS 206 with a C or better.

An introduction to the basic ideas and methods of applied mathematics. Topics taken from elementary partial differential equations, separation of variables and Fourier series, Fourier transforms, calculus of variations, applied linear algebra, numerical methods, modeling.

MA 480 THE PRACTICUM IN APPLIED MATHEMATICS

(Class 3, Cr. 3)

The practicum course consists of a small team (a faculty advisor and 1–4 students) working on a real problem obtained in conjunction with a local business or industry. Not more than two terms of MA 480 and/or CS 480 may be taken for credit. (This course is the same as CS 480.)

MA 490 TOPICS IN MATHEMATICS FOR UNDERGRADUATES

(Class 0 to 5, Cr. 1 to 5)

Supervised reading and reports in various fields. Open only to students with the consent of the department.

MA 510 VECTOR CALCULUS

(Class 3, Cr. 3)

Prerequisite: MA 264 and MA 265 with a C or better – Not open to students with credit in MA 362.

Functions of several variables; partial derivative, differential; quadratic approximation, extrema; vector calculus, gradient; line, surface and volume integrals; divergence, curl, Laplacian, integral theorems; mappings, continuity, differentiability, inverse mapping; implicit functions; orthogonal coordinates.

MA 520 BOUNDARY VALUE PROBLEMS OF DIFFERENTIAL EQUATIONS

(Class 3, Cr. 3)

Prerequisite: MA 264 with a C or better

Fourier series. Sturm–Liouville Theory; Orthogonal expansions, separation of variable in partial differential equations, spherical harmonics.

MA 525 INTRODUCTION TO COMPLEX ANALYSIS

(Class 3, Cr. 3)

Prerequisite: MA 264 and MA 265 with a C or better

Complex numbers and complex-valued functions; differentiation of complex functions; power series, uniform convergence; integration, contour integrals; elementary conformal mapping.

MA 534 ADVANCED ANALYSIS FOR ENGINEERS AND SCIENTISTS

(Class 3, Cr. 3)

Prerequisite: MA 264 and MA 265 with a C or better

An introduction to normed linear spaces; Hilbert spaces; linear operations; spectral theory; selected applications.

MA 540 ANALYSIS I

(Class 3, Cr. 3)

Prerequisite: MA 446 with a C or better

Real number system, basic topology, infinite series, continuity, differentiation, integration.

MA 541 ANALYSIS II

(Class 3, Cr. 3)

Prerequisite: MA 540 with a C or better

Sequences and series of functions, uniform convergence, equicontinuous families, the Stone–Weierstrass Theorem, Fourier series, introduction to Lebesgue measure and integration.

MA 553 INTRODUCTION TO ABSTRACT ALGEBRA

(Class 3, Cr. 3)

Prerequisite: MA 453 with a C or better

Basic properties of groups, rings, integral domains, fields, polynomials Solvable groups. Finitely generated abelian groups. Algebraic and transcendental field extensions. Separable extensions. Normal extension, Galois theory.

MA 554 LINEAR ALGEBRA

(Class 3, Cr. 3)

Prerequisite: MA 265 with a C or better

Vector spaces, linear transformations, matrices. Solution of systems of linear equations. Determinant. Inner product spaces; orthogonal reduction of symmetric matrices. Direct sum decompositions, characteristic values, diagonalizable and nilpotent transformations, Jordan normal form.

MA 555 ALGEBRAIC CODING THEORY

(Class 3, Cr. 3)

Prerequisite: MA 345 or MA 453 with a C or better

This course studies error-correcting codes in depth, with an emphasis on their mathematical properties. Included will be discussions of: Hamming codes, Golay codes, BCH codes, cyclic codes, quadratic residue codes, as well as polynomials over finite fields and weight distributions.

MA 556 INTRODUCTION TO THE THEORY OF NUMBERS

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

Divisibility, congruences, quadratic residues, diophantine equations, the sequence of primes.

MA 560 FUNDAMENTAL CONCEPTS OF GEOMETRY

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

Foundations of Euclidean geometry, including Euclid's elements and detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

MA 561 PROJECTIVE GEOMETRY

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

Ideal elements, duality, harmonic sets, projective metric; theory of conics, involution, imaginary elements.

MA 571 ELEMENTARY TOPOLOGY

(Class 3, Cr. 3)

Prerequisite: MA 446

General topological spaces and continuity. Connectedness. Separation. Compactness. Metric spaces. Function spaces.

MA 581 INTRODUCTION TO LOGIC FOR TEACHERS

(Class 3, Cr. 3)

Prerequisite: MA 261 with a C or better

Sentential and general theory of inference and nature of proof; elementary axiom systems.

MA 583 HISTORY OF ELEMENTARY MATHEMATICS

(Class 3, Cr. 3)

A survey of elementary mathematics before calculus will be made to link the history of mathematics to that of other sciences and to the social history of the relevant periods. Some acquaintance with ancient history of Europe is desirable.

MA 587 GENERAL SET THEORY

(Class 3, Cr. 3)

Prerequisite: MA 453 with a C or better

Set algebra. Functions and relations. Ordering relations. Transfinite induction. Cardinal and ordinal numbers. The axiom of choice. Maximal principles. The continuum hypothesis. Application to algebra, analysis and topology.

MA 598 TOPICS IN MATHEMATICS

(Class 0 to 5, Cr. 1 to 5)

Sem 1 and 2 SS. Cr.1-5 (When offered at Indianapolis, cr.0-6. May be repeated for credit.) Supervised reading courses as well as dual-level special topics courses are given under this number.

Mechanical Engineering

ME 114 ENGINEERING DRAWING

(Class 1, Lab. 3, Cr. 2)

A technical drawing course covering geometric constructions pictorial and multiview drawing, sections, graphical vector solutions, dimensioning, detail and assembly drawings. Development of free hand sketching techniques as well as use of drafting instruments.

ME 115 ENGINEERING DRAWING I

(Lab. 3, Cr. 1)

A technical drawing course covering engineering geometry, orthographic projection, auxiliary views, dimensioning, and tolerance using sketching techniques, and 2-D CAD.

ME 116 ENGINEERING DRAWING II

(Lab. 3, Cr. 1)

Prerequisite: ME 115 with a C or better

A continuation of the technical drawing course covering 3-D parametric modeling, part assembly modeling, and detail and assembly drawings.

ME 271 BASIC MECHANICS I (STATICS)

(Class 3, Cr. 3)

Prerequisite: MA 163 and MA 164 and PHYS 152 all with a C or better Pre/Co-requisite: MA 261

Review of vector algebra and equilibrium. Hydrostatics, virtual work, static stability, friction. First and second moments of areas, volumes, and masses, center of gravity. A minimum grade of C is required for the course prerequisites.

ME 275 BASIC MECHANICS II (DYNAMICS)

(Class 3, Cr. 3)

Prerequisite: MA 261 and ME 271 all with a C or better

Fundamental concepts, kinematics, translation and rotation. Kinetics impulse, momentum, work, energy. Rectilinear and curvilinear translation of point masses. Plane motion of rigid bodies and vibration.

ME 291 INDUSTRIAL PRACTICE I

For co-operative engineering students only Practice in industry and comprehensive written report of this practice.

ME 292 INDUSTRIAL PRACTICE II

For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 305 GENERAL THERMODYNAMICS I

(Class 3, Cr. 3)

Prerequisite: MA 261 and PHYS 261 all with a C or better

Properties of pure substances, work and heat, first and second laws of thermodynamics, entropy, irreversibility and availability, power and refrigeration cycles, thermodynamic relations.

ME 306 GENERAL THERMODYNAMICS II

(Class 3, Cr. 3)

Prerequisite: ME 305

Thermodynamic relations. Power and refrigeration cycles, methods of thermodynamic analysis, technical thermodynamics and design, energy conversion. Thermodynamics of combustion processes and equilibrium.

ME 311 ENGINEERING PROJECT MANAGEMENT

(Class 3, Cr. 3)

Introduction of principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling,

validation, lifecycle costing, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control.

ME 312 FLUID MECHANICS

(Class 3, Cr. 3)

Prerequisite: MA 264 and ME 271 all with a C or better Co-requisite: ME 305 and ME 313

Continuum, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis, Euler and Bernoulli equations, viscous flows, boundary layer flow in channels and around submerged bodies, one-dimensional gas dynamics.

ME 313 FLUID MECHANICS LABORATORY

(Lab. 3, Cr. 1)

Pre/Co-requisite: ME 312

Introduction to fluid mechanics laboratory, experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, boundary layer studies, falling ball experiments, and viscosity measurements.

ME 320 KINEMATIC ANALYSIS AND DESIGN

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ME 275 with a C or better

Graphical, analytical, and computer techniques for analyzing displacements, velocities, and accelerations in mechanisms. Analysis and design of linkages, cams and gears. Laboratory projects include analysis, design, construction, and evaluation of mechanisms.

ME 325 DYNAMICS OF PHYSICAL SYSTEMS

(Class 3, Cr. 3)

Prerequisite: ECE 201 and ME 275 all with a C or better

Development and solution of linear models; translational and rotational mechanical systems, electrical systems, electromechanical systems, thermal systems, hydraulic systems. The Laplace transform, transfer functions, and Bode plots, state variable representation and solutions. Computer analysis and simulation.

ME 345 MECHANICAL ENGINEERING EXPERIMENTATION

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CE 273 with a C or better and ME 325

Mechanical measurements and methods of experimentation. Calibration standards, statistical replication and error minimization, transducers and instrumentation, dimensional analysis and the design of an experiment. Laboratory experiments will require formal reports and will deal with displacements, velocities, pressures, and elastic strains.

ME 393 INDUSTRIAL PRACTICE III

For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 394 INDUSTRIAL PRACTICE IV

For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 395 INDUSTRIAL PRACTICE V

For co-operative engineering students only. Practice in industry and comprehensive written report of this practice.

ME 416 HEAT TRANSFER

(Class 3, Cr. 3)

Prerequisite: ME 305 and ME 312 and ME 313 Pre/Co-requisite: ME 417

Steady state and transient heat transfer by conduction, laminar and turbulent convection, film condensation and boiling, and by radiation. Combined heat and mass transfer by diffusion and convection. The analysis and design of heat exchangers for process heat transfer.

ME 417 HEAT TRANSFER LAB

(Lab. 3, Cr. 1)

Pre/Co-requisite: ME 416

Heat transmission laboratory with measurements of temperature and flows. Experiments include temperature profiles in solids, thermal conductivity, radiation, and the determination of various heat and mass transfer coefficients.

ME 426 HEATING AND AIR CONDITIONING ANALYSIS

(Class 3, Cr. 3)

Prerequisite: ME 416

Psychometrics, air conditioning systems, equipment selection, duct design and piping design. Heating and cooling loads, solar radiation and heat transmission in buildings. Heat pumps. Application of air conditioning to residences, computer rooms, light commercial and high-rise buildings.

ME 429 SENIOR ENGINEERING DESIGN I

(Class 1, Lab. 3, Cr. 2) Experiential Learning

Prerequisite: COM/ENGL 307 and ME 305 and ME 311 and ME 312 and MSE 200, Penultimate semester.
Pre/Co-requisite: ME 345

The senior engineering design courses I and II constitute a two semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue a idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presentation before faculty and students.

ME 439 SENIOR ENGINEERING DESIGN II

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ME 429 Experiential Learning

The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presentation before faculty and students.

ME 461 MACHINE DESIGN I

(Class 3, Lab. 3, Cr. 4)

Prerequisite: CE 273 Pre/Co-requisite: ME 345

Application of mechanics and mechanics of materials to the analysis and design of machine elements. Stress and deflection analysis, statistical considerations under steady and variable loading, stress principles applied to fasteners, springs, welded joints, and general mechanical elements. Fits and tolerances. Antifriction Gearing. Spur gears. Laboratory includes projects, solutions of design problems, and experiments.

ME 466 MACHINE DESIGN II

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ME 320 and ME 461

Comprehensive study in the design and analysis of gearing, rolling and journal bearings, clutches and brakes, and flexible mechanical elements. Introduction to reliability engineering. Laboratory includes projects and solution of design problems.

ME 485 LINEAR CONTROL SYSTEMS

(Class 2, Lab. 3, Cr. 3)

Prerequisite: ME 325

Introduction to classical control theory. Transfer functions, block diagram manipulation, and signal flow graphs. Transient and steady state responses; characteristics, and design. Sensitivity analysis and disturbance rejection. System stability. Root locus analysis and design. Frequency response analysis using Bode and polar plots. Nyquist criterion and Nichols chart. Controller design using Bode plots. Laboratory will include design, simulation of topics covered, and a number of practical experiments. Credit is not allowed for both ECE 384 and ME 485.

ME 486 INTRODUCTION TO MANUFACTURING ENGINEERING

(Class 2, Lab. 3, Cr. 3)

Prerequisite: CE 273 and MSE 200 all with a C or better

Modern manufacturing processes and methods including forming, shaping, machining, and joining. Productivity, quality improvement, material and energy conservation, automatic processing and inspection, process planning, manufacturing control, robotics, CAD, CAM, and computer integrated manufacturing.

ME 497 MECHANICAL ENGINEERING PROJECTS

(Class 0 to 6 Lab. 0 to 14, Cr. 1 to 6)

May be repeated for credit Junior standing or higher required Projects or special topics of contemporary importance or of special interest that are outside the scope

of the standard undergraduate curriculum can be studied under the Mechanical Engineering Projects course. Interested students should seek a faculty advisor by meeting with individual faculty members who work in their area of special interest and prepare a brief description of the work to be undertaken in cooperation with their advisor.

ME 500 ADVANCED THERMODYNAMICS

(Class 3, Cr. 3)

Prerequisite: ME 306

The empirical, physical basis of the laws of thermodynamics. Availability concepts and applications. Properties and relations between properties in homogeneous and heterogeneous systems. The criteria of equilibrium. Application to variety of systems and problems including phase and reaction equilibrium.

ME 505 INTERMEDIATE HEAT TRANSFER

(Class 3, Cr. 3)

Prerequisite: ME 416

Heat and mass transfer by diffusion in one-dimensional, two-dimensional, transient, periodic, and phase change systems. Convective heat transfer for external and internal flows. Similarity and integral solution methods. Heat, mass, and momentum analogies. Turbulence. Buoyancy driven flows. Convection with phase change. Radiation exchange between surfaces and radiation transfer in absorbing-emitting media. Multimode heat transfer problems.

ME 509 FLUID PROPERTIES. BASIC LAWS FOR A CONTROL VOLUME.

(Class 3, Cr. 3)

Prerequisite: ME 312

Kinematics of fluid flow. Dynamics of frictionless incompressible flow and basic hydrodynamics. Equations of motion for viscous flow, viscous flow applications, boundary layer theory. Wall turbulence, lift and drag of immersed bodies.

ME 513 ENGINEERING ACOUSTICS

(Class 3, Cr. 3)

Senior standing or consent of instructor required

The simple oscillator. Lumped acoustical elements. Electro-mechanical-acoustical analogies. Wave motion in strings and membranes. Introduction to linear acoustics through derivation of the wave equation and simple solutions. Plane and spherical waves. Acoustic intensity. Plane wave transmission through fluid layers and simple barriers. Sound absorption. Modeling of acoustical sources: monopoles, dipoles, quadrupoles. Mechanisms of sound generations and directionality. Sound propagation in one-dimensional systems. Introduction to room acoustics. Professors Bolton and Mongeau.

ME 560 KINEMATICS

(Class 3, Cr. 3)

Prerequisite: ME 320

Geometry of constrained plane motion with applications to linkage design. Type and number synthesis. Path curvature, inflection circle, cubic of stationary curvature. Finite displacements, three and four separated positions. Graphical, analytical, and computer techniques.

ME 563 MECHANICAL VIBRATIONS

(Class 3, Cr. 3)

Prerequisite: CE 273 and ME 325

Review of system with one degree of freedom. LaGrange's equations of motion for multiple degree of freedom systems. Introduction to matrix methods. Transfer functions for harmonic response, impulse response, and step response. Convolution integrals for response to arbitrary inputs. Principle frequencies and modes. Applications to critical speeds, measuring instruments, isolation, torsional systems. Introduction to nonlinear problems.

ME 575 THEORY AND DESIGN OF CONTROL SYSTEMS

(Class 3, Cr. 3)

Covers the analysis and design of control systems from both a classical and modern viewpoint. with emphasis on design of controllers. Classical control design is reviewed, including both root locus and Bode domain design methodologies. The state space representation is introduced, along with notions of stability, controlling, and observability. State feedback controllers for pole placement and state observers are discussed with emphasis on their frequency domain implications

ME 597 ADVANCED MECHANICAL ENGINEERING PROJECTS I

(Class 0 to 6, Lab. 0 to 14, Cr. 1 to 6)

Must be masters standing. May be repeated for credit. Projects or special topics of

contemporary importance or of special interest that are outside the scope of the standard graduate curriculum can be studied under the Mechanical Engineering Projects course. Interested students should seek a faculty advisor by meeting with individual faculty members who work in their area of special interest and prepare a brief description of the work to be undertaken in cooperation with their advisor.

ME 698 M.S. THESIS

(Class 1 to 18, Lab. 0 to 54, Cr. 1 to 18)

Mechanical Engineering Technology

MET 100 PRODUCT DRAWING AND COMPUTER-AIDED DESIGN

(Class 2, Lab. 2, Cr. 3)

This course is an introduction to technical graphics and computer-aided design. The course includes sketching, production drawing, and a significant amount of hands-on experience on a CAD system. The production drawing portion covers topics like multi-view drawings, section views, auxiliary views and dimensioning.

MET 102 PRODUCTION DESIGN AND SPECIFICATIONS

(Class 1, Lab. 5, Cr. 3)

Prerequisite: MET 100 and MET 162

The design, evaluation and documentation of engineering specifications required of manufacturability and assembly are introduced. Emphasis is on CAD based details, assemblies, design layouts, equipment installations and related industrial practices.

MET 103 PRODUCTION DRAWING AND COMPUTER AIDED DESIGN I

(Class 1, Lab. 3, Cr. 2)

A basic mechanical-electrical drawing course with hands-on experience in Computer Aided Drafting (CAD). Topics covered are: the design process; using CAD to draw orthographic views; sectional views; dimensioning; and sketching.

MET 111 APPLIED STATISTICS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MET 162 Co-requisite: MA 159

Force systems, resultants and equilibrium, trusses, frames, beams, and shear and moments in beams are studied.

MET 118 APPLIED MECHANICS: STATICS

(Class 3, Cr. 3)

Co-requisite: MA 148

A study of force systems, resultants and equilibrium, centroids of areas and centers of gravity of bodies, trusses, frames, beams, friction and moments of inertia of areas and bodies.

MET 120 BLUEPRINT READING AND SKETCHING

(Lab. 2, Cr. 1)

This introductory course will incorporate blueprint reading, freehand sketching, understanding orthographic projections, dimensioning and tolerancing, and the use of symbols in industrial drawings.

MET 141 MATERIALS I

(Class 2, Lab. 2, Cr. 3)

An overview of structures, properties, and applications of metals, polymers, ceramics, and composites commonly used in industry is presented. Problem-solving skills are developed in the areas of materials selection, evaluation, measurement and testing.

MET 142 MANUFACTURING PROCESSES I

(Class 2, Lab. 1, Cr. 3)

Prerequisite: MET 141

Basic casting, forming, and joining processes are surveyed. The course emphasizes the selection and application of various processes.

MET 161 INTRODUCTION TO ENGINEERING TECHNOLOGY

(Class 2, Lab. 2, Cr. 3)

This course will introduce engineering technology students to resources and skills that will help them to be successful in their careers. This course will help students explore engineering technology by introducing campus, regional and national resources such as professional societies in their chosen fields. It will also help students improve in areas important to becoming better students. These areas may include topics such as planning academic careers, mentoring, improving study skills, goal setting and utilization of library resources. In addition the course

will focus on specific introductory concepts important to engineering technology students such as using campus computer resources.

MET 162 COMPUTATIONAL ANALYSIS TOOLS IN MET

(Lab. 3, Cr. 1)

Credit will not be granted for both MET 162 & MET 160.

Instructions is given in analytical and computational problem-solving techniques. The electronic calculator the factor-label method of unit conversions, and engineering graphs are used to solve technical problems in Mechanical Engineering Technology.

MET 205 PRODUCT DRAWING AND CAD II

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MET 100

Application of principles of engineering drawing to layout, assembly, and detail drawing. Other topics include: 3-D, solid, modeling, rendering, customizing CAD, and CAD programming language.

MET 211 APPLIED STRENGTH OF MATERIALS

(Class 3, Lab. 2, Cr. 4)

Prerequisite: MET 118 or MET 111 and MA 219

The principles of strength, stiffness, and stability are introduced and applied primarily to mechanical components. Not open to students with credit in CET 260.

MET 213 DYNAMICS

(Class 3, Cr. 3)

Prerequisite: MET 118 and MA 219 or consent of instructor

Kinematics and kinetics principles of rigid-body dynamics are introduced. Emphasis is on the analysis of bodies in plane motion.

MET 214 MACHINE ELEMENTS

(Class 3, Cr. 3)

Prerequisite: MET 211 and MET 213

The methods developed in statics, dynamics, and strength of materials are applied to the selection of basic machine components. The fundamental principles required for the selection of individual elements that compose a machine are developed. Selected course topics are included as computer exercises.

MET 230 FLUID POWER

(Class 2, Lab. 2, Cr. 3)

Prerequisite: PHYS 220

This course consists of the study of compressible and incompressible fluid statics and dynamic as applied to hydraulic and pneumatic pumps, motors, transmissions and controls.

MET 242 MANUFACTURING PROCESSES II

(Class 2, Lab. 2, Cr. 3)

Co-requisite: MET 100

This course surveys the manufacturing processes and tools commonly used to convert cast, forged, molded, and wrought materials into finished products. It includes the basic mechanisms of material removal, measurement, quality control assembly processes, safety, process planning, and automated manufacturing.

MET 266 STRENGTH OF MATERIALS/TESTING LABORATORY

(Class 2, Lab. 3, Cr. 3)

Prerequisite: MET 141 and MET 211 or permission of instructor.

Extensive testing of mechanical engineering materials to determine physical and mechanical properties. Preparation of reports from data secured from laboratory testing will be required.

MET 285 COMPUTER NUMERICAL CONTROL APPLICATIONS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MET 242

A study of the principles, techniques and applications of computer numerically controlled machine tools. G and M code programming of industrial machines, tooling systems and an introduction to Computer Aided Manufacturing (CAM) systems will be covered.

MET 299 MECHANICAL ENGINEERING TECHNOLOGY

(Class 0 to 3, Lab. 0 to 12, Cr. 1 to 3)

Hours and subject matter to be arranged by staff. Primarily for third or fourth semester students with special aptitudes.

MET 305 COMPUTER-AIDED DESIGN WITH APPLICATIONS

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MET 100

This course provides an advanced study of computer-aided drafting and design utilizing current industrial computer-aided design systems. The course covers the use of these systems in three dimensional and parametric modeling applications.

MET 313 APPLIED FLUID MECHANICS

(Class 3, Cr. 3)

Prerequisite: MET 230 and 325, and MA 219 or consent of instructor.

The fundamental principles of fluid mechanics are developed, including properties of fluid, pressure hydrostatics, dynamics of fluid flow, friction losses, and sizing of pipes. Emphasis is on problem solving.

MET 315 APPLIED MECHANISM KINEMATICS

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

Prerequisite: MET 213 and MET 214 and MA 219

Application of the principles of kinematics to mechanisms. Graphical and semi-graphical methods are used to determine displacements, velocities and accelerations in common mechanisms. Practical coverage of slider-crank mechanism, scotch yoke, four bar linkage, Witworth mechanism, universal joints, Geneva wheel, and cams. Will include the use of computers and software to perform simulation of some generation, and four bar analysis.

MET 325 APPLIED THERMODYNAMICS I

(Class 3, Cr. 3)

Prerequisite: MA 219 and PHYS 220

Applications of perfect gas laws, steam tables, principles of conservation of mass and energy, and heat transfer as they apply to power plants, engines, pumps, fans and refrigeration systems.

MET 329 APPLIED HEAT TRANSFER

(Class 3, Cr. 3)

Prerequisite: PHYS 220 and MA 221

An applied approach to the introduction of basic vocabulary and concepts related to the steady state transfer (i.e. conduction, convection, radiation) will be covered. Additional topics will include heat exchangers, boilers and solar energy.

MET 355 AUTOMATION I

(Class 2, Lab. 2, Cr. 3)

Prerequisite: ECET 214

An introduction to the design and application of programmable controller systems. Topics include programming techniques, input/output devices, personal computer interface, system design, safety and applications for automation.

MET 384 INSTRUMENTATION

(Class 2, Lab. 3, Cr. 3)

Prerequisite: MA 148 and ECET 214

Study of measurement theory and principles, including temperature, pressure, level, flow and similar measurement used to control manufacturing processes.

MET 420 MACHINE DESIGN

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MET 214 and ECET 262 or MET 355

Design of moving machinery in complex electro-mechanical systems. Several projects will be completed that include mechanical design and control design to obtain the desired specifications.

MET 421 AIR CONDITIONING AND REFRIGERATION

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

Prerequisite: MET 329

Consent of instructor for non-MET majors. Heat gain and losses, heat-producing equipment, cooling, and refrigeration equipment are studied. System design is presented, including controls and instrumentation for commercial, industrial and residential systems.

MET 426 INTERNAL COMBUSTION ENGINES

(Class 2, Lab. 2, Cr. 3)

Co-requisite: MET 325

A study of the spark ignition, compression ignition, and continuous burning internal combustion engines.

MET 460 DESIGN FOR X

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

Prerequisite: MET 214 and MET 305 or CGT 116

Application of methods and techniques used in engineering, combined with statistical methods to develop quality, customer driven product development. The course will include topics in Design for Six Sigma for Manufacture-ability. Design for Serviceability and product life cycles. The course will require students to work in teams. 3D solid modeling will be used to generate ideas and complete product development. Course project will be taken from industry recognized students design competitions.

MET 461 COMPUTER INTEGRATED DESIGN AND MANUFACTURING

(Class 2, Lab. 2, Cr. 3) Experiential Learning

Prerequisite: MET 205 or MET 102 and MET 211 and MET 242

A combination of lecture and laboratory projects demonstrating the integration of all phases of a product's life cycle from conception through recycling. Laboratory projects include designing parts, graphical finite element analysis, rapid prototyping, computer controlled manufacturing, and testing all using a common, three dimensional graphical database.

MET 465 ADVANCED TOPICS IN COMPUTER-AIDED DESIGN

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MET 100 and MET 205 or MET 102

This covers solid modeling and animation. These topics are built upon a foundation in computer modeling or CAD to produce photo realistic images as used in technical presentations, video, or film.

MET 495 SENIOR PROJECT SURVEY

(Class 1, Cr. 1) Experiential Learning

Students will select several design projects and give written or oral reports on their proposed solutions. They will be encouraged to select and finalize one project proposal in preparation for MET 497.

MET 497 SENIOR PROJECT

(Class 2 to 3, Lab. 0 to 2, Cr. 3) Experiential Learning

Prerequisite: MET 495

Directed work on individual projects for senior mechanical engineering technology students.

MET 499 MECHANICAL ENGINEERING TECHNOLOGY

(Cr. 1 to 6)

Hours and subject matter to be arranged by staff. Course may be repeated for credit.

Management

MGMT 100 MANAGEMENT LECTURES I

(Class 1, Cr. 1)

A survey of management professions with a focus on the academic development of the student, planning for educational success, and planning for future professional employment.

MGMT 101 INTRODUCTION TO BUSINESS

(Class 3, Cr. 3)

An introduction to the internal operations and external environment of contemporary business. Consideration is also given to the social economic role of business in our society. The basic business functions and role of management are also discussed.

MGMT 102 COMPUTER UTILIZATION FOR MANAGEMENT

(Class 2, Lab. 2, Cr. 3)

An introduction to computer application software with an emphasis on use within the management area. Topics include word processing, spreadsheets, presentations and databases with applications targeted specifically for marketing, finance, human resources, accounting and economics.

MGMT 190 FRESHMAN LEVEL PROBLEMS IN MANAGEMENT

(Class 1 to 4, Cr. 1 to 4)

Investigation into specific topic areas of Management arranged with the instructor before enrolling.

MGMT 200 INTRODUCTORY ACCOUNTING

(Class 2, Cr. 3 or Class 3, Lab. 2, Cr. 3) TRANSFER IN

Prerequisite: MA 153

An examination of the system by which accounting data is gathered from economic events. Construction and uses of financial statements.

MGMT 201 MANAGERIAL ACCOUNTING

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: MGMT 200

An introduction to management's internal use of accounting information -- for decision making, production management, product costing, motivating and evaluating performance, and budgeting.

MGMT 211 PRINCIPLES OF INFORMATION SYSTEMS

(Class 3, Cr. 3)

Prerequisite: MGMT 102

An introduction to information systems from the perspective of a manager. This course provides an overview of information systems, system theory, human information processing, and current legal and ethical issues relating to computer usage.

MGMT 221 PRINCIPLES OF ADVERTISING

(Class 3, Cr. 3)

An analysis of commercial persuasion from colonial times to the era of mass communication. The course examines the structure of advertising messages, how they are adapted to specific audiences, and the social settings in which they occur.

MGMT 224 PRINCIPLES OF MARKETING

(Class 3, Cr. 3)

Not open to Management majors. An introduction to the principles and concepts underlying marketing decisions. The topics covered include distribution channels, pricing, promotion, product, consumer behavior, and environmental influences on marketing.

MGMT 225 FUNDAMENTAL MANAGERIAL STATISTICS

(Class 3, Cr. 3)

Prerequisite: MA 225

The foundation for statistical decision making. Topics include: probability theory, descriptive statistics, estimation, and hypothesis testing with managerial applications.

MGMT 240 PERSONAL FINANCIAL MANAGEMENT

(Class 3, Cr. 3) TRANSFER IN

Credit will only be given for one of the following: ECON 240, MGMT 240 OR MGMT 442.

Lectures and case analysis of managing one's personal finances; includes budgeting, credit analysis, insurance, taxation, housing, estate planning, private and business investment. Not available for credit in Management concentrations.

MGMT 290 PROBLEMS IN MANAGEMENT

(Class 1 to 4, Cr. 1 to 4)

Investigation in a specific management field arranged with the instructor before enrolling.

MGMT 301 MANAGEMENT CAREER LECTURES

(Class 1, Cr. 1)

Class rank of 5 or higher or consent of instructor. Workshops and lectures involving students in the decision making process for career planning. Students will explore career paths, develop a job search plan, and prepare and practice interviewing techniques. Skills in writing cover letters, constructing a resume, and interviewing will be a major focus of this course. Visiting professionals in Career Placement and Recruiting will share information, experiences, and career opportunities in their fields.

MGMT 305 BUSINESS STATISTICS

(Class 3, Cr. 3)

Prerequisite: MGMT 225

An introduction to quantitative decision procedures under uncertainty and the foundations of probability theory and statistical decision theory.

MGMT 306 MANAGEMENT SCIENCE

(Class 3, Cr. 3)

Prerequisite: MGMT 225

An introduction to quantitative decision procedures under uncertainty and mathematical model building. Linear programming and other topics in operations research.

MGMT 307 SYSTEM ANALYSIS & DESIGN

(Class 3, Cr. 3)

Introduces the information systems student to the procedural requirements of the systems development life cycle (SDLC) > A case study approach is used to introduce the student to the techniques of systems planning, analysis, form and file design, documentation, implementation, and evaluation.

MGMT 308 DATABASE MANAGEMENT ANALYSIS & DESIGN

(Class 3, Cr. 3)

This course discusses the functions and components of database management systems and the role of databases in the Systems Development Life Cycle. Both relational and object oriented database techniques are discussed. Data modeling tools presented include enterprise models, entity relationship diagrams, the data dictionary, object diagrams, and normalization techniques. Also, the role and function of the Database Administrator are addressed.

MGMT 309 ACCOUNTING INFORMATION SYSTEMS

(Class 3, Cr. 3)

Prerequisite: MGMT 201

The course emphasizes accounting information systems, transaction cycles, and communication of financial information for management decisions within the context of business. Topics may include ERP systems, e-business and electronic commerce, systems documentation, database management, internal control, management reporting, and projects using business software.

MGMT 310 FINANCIAL MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 200

Management of the financial affairs of the industrial enterprise. Treats short-term cast budgeting, asset management, capital budgeting, capital structure decisions, and dividend policy.

MGMT 311 MANAGEMENT INFORMATION SYSTEMS

(Class 3, Cr. 3)

Prerequisite: MGMT 102

An introduction to management information systems as a resource for managerial decision-making. Includes an overview of systems theory, human information processing and current legal and ethical issues relating to computer usage in organizations. Focuses on the nature of computer applications in business and their use as tools for problem solving in the various business functional areas.

MGMT 318 E-BUSINESS STRATEGY

(Class 3, Cr. 3)

Prerequisite: MGMT 311

An overview of e-business from design to operations of organizations engaging in the fast-paced highly competitive, global environment of e-commerce. Topics include the impact of e-business, strategic use of IT for competitive advantage, e-business impact on organization, globalization, and the impact on options created through applied IT. It is designed for students pursuing leadership roles in defining IT policy and strategy.

MGMT 324 MARKETING MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 200 or ECON 251

A managerial approach to the job of learning to make a decision on product policy, distribution channels, pricing, personal selling, advertising, and marketing research.

MGMT 325 LOGISTICS

(Class 3, Cr. 3)

This course analyzes the elements of business logistics. The course will focus on the integration of real-time information technology to increase the effectiveness of production and distribution. Global competition and technology and channels of distribution will also be discussed.

MGMT 333 TOTAL QUALITY MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: OBHR 330 or SPV 252 or OLS 252 or BA 230 or BA 230

This course focuses on the management culture, philosophy, practices, and processes necessary to develop a total quality orientation. The course bridges quantitative, behavioral, and strategic concepts for designing organizations to be dynamic, integrated systems whose outputs are monitored for quality and continuously improved. Not open to students with credit in IET 378.

MGMT 340 CORPORATE FINANCIAL PROBLEMS

(Class 3, Cr. 3)

Prerequisite: MGMT 225 and MGMT 310

Advanced topics in financial management of corporations, from the viewpoint of an internal financial officer. A continuation of MGMT 310 with additional depth and topic coverage emphasizing applications.

MGMT 350 INTERMEDIATE ACCOUNTING I

(Class 3, Cr. 3)

Prerequisite: MGMT 201

Financial reporting for interested external parties. Emphasis on asset valuation, income measurement, and preparation of financial statements.

MGMT 351 INTERMEDIATE ACCOUNTING II

(Class 3, Cr. 3)

Prerequisite: MGMT 350

Continuation of Intermediate Accounting I, MGMT 350. Introduction of more advanced problems in financial reporting in the areas of revenue recognition, inter-period tax allocation, postretirement benefits, leases, and preparation of the statements of cash flows.

MGMT 354 LEGAL FOUNDATIONS OF BUSINESS I

(Class 3, Cr. 3)

Nature and place of law in our society, social and moral bases of law enactment, regulation of business, legal liability, and enforcement procedures. Special emphasis on torts, contracts, and agency.

MGMT 360 PRODUCTION/OPERATIONS MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 225

An introductory course concerning the management of production, distribution and service system operations. Topics covered include design of products, processes and facilities, planning, scheduling, and controlling inventory and quality.

MGMT 363 TOTAL QUALITY TECHNIQUES

(Class 3, Cr. 3)

Prerequisite: MGMT 225

Not open to students with credit in IET 355. Building upon basic statistical principles, this course covers the topics of acceptance sampling, control charts, capability, experimental design and regression analysis.

MGMT 364 EMERGING ISSUES IN TOTAL QUALITY MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 363 or IET 355

Topical coverage will change as the field of quality management evolves. Issues such as Just in Time, Taguchi methods, Ishikawa, Ohno, Shingo and Toyota systems will be studied.

MGMT 365 LOGISTICS

(Class 3, Cr. 3)

This course analyzes the elements of business logistics. The course will focus on the integration of real-time information technology to increase the effectiveness of production and distribution. Global competition and technology and channels of distribution will also be discussed.

MGMT 383 PRACTICUM IN QUALITY MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 363 and MGMT 333

This course is run in conjunction with the Small Business Institute of the Department of Management. Students will design and help implement quality management systems and concepts in an actual business.

MGMT 390 JUNIOR LEVEL PROBLEMS IN MANAGEMENT

(Class 1 to 4, Cr. 1 to 4)

Investigation in a specific management field arranged with the instructor before enrolling.

MGMT 404 TAX ACCOUNTING

(Class 3, Cr. 3)

Prerequisite: MGMT 350

A foundation course in the law governing taxation of individuals, partnerships, corporations, and property transactions. Tax planning and professional responsibility are also emphasized.

MGMT 406 AUDITING

(Class 3, Cr. 3)

Prerequisite: MGMT 351

An introduction to the concepts and procedures of auditing, which is the systematic process of objectively obtaining and evaluating evidence about economic actions and events with regard to audit risk, materiality, and decision-making. Independent, governmental, internal, and international audit topics may also be addressed.

MGMT 407 ADVANCED MANAGEMENT ACCOUNTING

(Class 3, Cr. 3)

Prerequisite: MGMT 201

This course emphasizes the application of statistical tools and decision models to accounting data for the purpose of facilitating managerial control. Topics include asset acquisitions, inventory control, profit maximization, budgeting, performance evaluation, and financial planning.

MGMT 408 GOVERNMENT ACCOUNTING

(Class 3, Cr. 3)

Prerequisite: MGMT 350

This course examines the accounting requirements of the three major activities of state and local governments; governmental activities; business activities; and fiduciary activities. Fund accounting and treatment of capital assets and long-term liabilities in governmental systems will be examined as well as the contents of a comprehensive annual financial report (CAFR).

MGMT 409 INTERNATIONAL BUSINESS

(Class 3, Cr. 3)

Prerequisite: MGMT 101 and ECON 252 or ECON 211

An introduction to the nature of international business. The course addresses the international business environment, including economic, political, legal, and social aspects. The assessment of international opportunities and risk is also addressed.

MGMT 410 ADVANCED FINANCIAL ACCOUNTING

(Class 3, Cr. 3)

Prerequisite: MGMT 351

This is an advanced course in financial accounting. A range of contemporary topics in financial reporting such as business combinations and consolidations, foreign transactions, partnerships, governmental and not-for-profit accounting are covered.

MGMT 412 MONEY AND CAPITAL MARKETS

(Class 3, Cr. 3)

Prerequisite: MGMT 310 and ECON 252

General subject matter in the financial behavior of households, corporations, the federal government, and financial institutions such as commercial banks, savings and loan associations, life insurance companies, and finance companies. Emphasis is on interaction of these sectors in the determination of various interest rates in recent years.

MGMT 416 INFORMATION SYSTEMS CONTROL AND AUDIT

(Class 3, Cr. 3)

Prerequisite: MGMT 311

The study of information systems (IS) control and audit. IS auditing assesses whether computer systems safeguard assets, maintain data integrity and facilitate the implementation of the goals of the organization. The reason why companies control and audit computer systems, the nature and purposes of the information systems audit function and the overall approach to a systems audit will be studied.

MGMT 421 PROMOTION MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 324 or MGMT 224

Promotions Management integrates Advertising, Public Relations and Publicity, Personal Selling and Sales Promotion as the overall promotional mix. Various communication methods and tools are treated as variables for use alone or in combination to communicate attributes of products and services to the customer.

MGMT 422 INTERNATIONAL MARKETING

(Class 3, Cr. 3)

Prerequisite: MGMT 324

This course explores the opportunities in global markets and examines the challenges of global marketing. Emphasis is placed on the strategic implications of competition in various country markets.

MGMT 424 CONSUMER BEHAVIOR*(Class 3, Cr. 3)**Prerequisite: MGMT 324 or MGMT 224*

An analysis of the environmental, social and psychological factors which influence an individual's buying decisions. The course covers how individual consumers are identified, motivated, and evaluated for use in various marketing activities. Emphasis is placed on the business approach for identifying the consumer's decision-making process.

MGMT 425 MARKETING PLANNING AND RESEARCH*(Class 3, Cr. 3)**Prerequisite: MGMT 324 or MGMT 225*

The management of the marketing research function in industrial firms. Emphasis on market research and information systems for planning and control.

MGMT 426 RETAILING*(Class 3, Cr. 3)**Prerequisite: MGMT 324 or MGMT 224*

Functions of a retail establishment are examined. The topics covered include retail operations planning; buyer behavior, store design, location, and layout; organizing and staffing the retail firm; merchandise management; pricing concepts and strategies; promotion; credit; financial management; and a discussion of the future of retailing. Emphasis is given to significant developments taking place in the major environments of retailing to include social, economic, technological, and legal aspects.

MGMT 427 SALES MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: MGMT 324 or MGMT 224*

Organization, management, and operation of the sales force. Examines the recruitment, selection, and processing of the sales force; motivation; forecasting; sales department budgeting; and performance evaluation. Emphasis is given to the management of an outside sales force and its activities.

MGMT 428 ADVERTISING MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: MGMT 421*

Provides an understanding and evaluation of the advertising function within the modern business environment. Covers history; advertising and the promotional mix; the advertising as a vital communication tool.

MGMT 429 ADVERTISING CAMPAIGNS*(Class 3, Cr. 3)**Prerequisite: MGMT 428*

Emphasizes the preparation of a complete advertising campaign for a business or non-profit organization. The student will be able to integrate marketing research and segmentation, media, and promotion plans, strategy, creative, and presentation in a unified campaign to serve a local or national organization.

MGMT 433 PERSONAL SELLING*(Class 3, Cr. 3)**Prerequisite: MGMT 324 or MGMT 224*

A detailed exposure to personal selling strategies and tactics. It examines effective selling in the consumer and industrial markets, including an analysis of consumers, motivation and communications, handling objections and closing techniques. The entire sales process is examined, with particular emphasis on relationship selling, planning and delivery of sales presentations, and trust-building techniques. The roles of professional salespeople within their organizations and economic systems are investigated, as are important dimensions of sales career.

MGMT 434 ELECTRONIC MARKETING*(Class 3, Cr. 3)**Prerequisite: MGMT 324 or MGMT 224*

An introduction to electronic marketing and the dynamics of Internet marketing.

MGMT 440 MANAGEMENT OF FINANCIAL INSTITUTIONS*(Class 3, Cr. 3)**Prerequisite: MGMT 310*

Management and policy topics providing insight on the internal operating procedures, and problems of financial institutions. Principles of loan analysis and the role of financial institutions in the capital markets are studied with an emphasis on commercial bank management.

MGMT 441 FUTURES AND OPTIONS*(Class 3, Cr. 3)**Prerequisite: MGMT 310*

Characteristics of futures and options and their relationship to stocks, bonds, and other financial assets. The determination of futures and options prices and how they are used for hedging and immunization purposes.

MGMT 442 PERSONAL FINANCE*(Class 3, Cr. 3)**Credit only for ONE of the following: ECON 240, MGMT 240, OR MGMT 442.*

Lectures and discussion on problems of managing one's personal finances. Covers budgeting; use of and cost of credit; life and property insurance; income and estate taxation; housing; wills, trusts and estate planning; saving and investments. Not available for credit towards economics and business economics concentrations.

MGMT 443 FUNDAMENTALS OF INVESTMENTS*(Class 3, Cr. 3)**Prerequisite: MGMT 310*

Operations of the markets in which securities are traded, and investment alternatives are studied. Theory and application of security valuation and portfolio selection techniques are examined with emphasis upon evaluation of investment performance.

MGMT 447 DERIVATIVES*(Class 3, Cr. 3)*

Overview of derivative contracts and their relationship to stocks, bonds and other tradeable assets. Also, a description of risk and risk management. Special topics include forward, futures, options, swaps and related contingent claims contracts. The determination of their theoretical prices as well as their application in hedging and portfolio immunization.

MGMT 448 REAL ESTATE PRINCIPLES*(Class 3, Cr. 3)**Prerequisite: MGMT 310*

The course focuses on the key aspects of negotiation, acquisition, and financing of real estate. Other topics include amortization, renovation, restoration management and depreciation of real estate assets.

MGMT 449 INTERNATIONAL FINANCIAL MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: MGMT 310 and ECON 252*

A study of the financial management of the international operations of the business. The course develops the international financial environment within which the multinational firm operates. Instruments such as currency forward, futures, and options contracts available for the firm to manage additional risk associated with international operations.

MGMT 450 BUSINESS POLICY*(Class 2, Lab. 2, Cr. 3)**Prerequisite: MGMT 310 and MGMT 324 and MGMT 360 and OBHR 330*

Should be taken only in last semester of senior year. An extensive study of management problems in business at policy-making levels; primarily for students majoring in management.

MGMT 465 FORECASTING FOR MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: MGMT 225**NOT open to students with credit in ECON 465.*

A course examining the statistical techniques of forecasting. Emphasis is placed on time-series data and computer based methods of estimation and testing of marketing and financial data will be studied.

MGMT 486 PROJECT MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: MGMT 311*

The application of the knowledge, skills, and techniques that project managers use to manage projects. Emphasis is placed on learning and applying concepts of Project Management Body of Knowledge (PMBOK), which includes integration, scope, time, cost, quality, human resource, communication, and procurement aspects.

MGMT 487 KNOWLEDGE AND DECISION MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 311

This course explores the application of Decision Support Systems (DSS), Expert Systems (ES) and Knowledge Management Systems (KMS) to a company's strategic decision-making process. Topics include the decision-making process, decision context and types, expert systems opportunities, knowledge management, and the roles of decision-making tools.

MGMT 490 PROBLEMS IN INDUSTRIAL MANAGEMENT

(Class 0 to 4, Cr. 1 to 4)

Arrange with instructor before enrolling. Investigation in a specific management field.

MGMT 495 INTERNSHIP IN MANAGEMENT

(Class 1 to 4, Cr. 1 to 4)

Junior standing and consent of the instructor. A special course in selected areas of management, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization.

MGMT 503 ADVANCED ACCOUNTING

(Class 3, Cr. 3)

Prerequisite: MGMT 351

Advanced course in financial accounting. A range of contemporary issues in financial reporting such as business combinations, consolidations, price-level adjustments, multi-nationals, and partnership accounting are covered. Both technical proficiency and user applications are emphasized.

MGMT 504 TAX ACCOUNTING

(Class 3, Cr. 3)

Prerequisite: MGMT 350

Basic tax course designed to provide an understanding of the various federal insurance contribution, self-employment and unemployment taxes.

MGMT 505 MANAGEMENT ACCOUNTING II

(Class 3, Cr. 3)

Prerequisite: MGMT 310 and MGMT 351

The focus of the course is managerial decision making and the economic role of information. Topics covered include decentralized financial performance evaluation, cost analysis, and financial planning and control systems.

MGMT 506 AUDITING

(Class 3, Cr. 3)

Prerequisite: MGMT 406

A study of the concepts and procedures of auditing, which is the systematic process of objectively obtaining and evaluating evidence regarding assertions and economic actions and events. Primary emphasis is on audits conducted by independent certified public accountants, but topics covered apply to internal auditing as well.

MGMT 507 ADVANCED FEDERAL INCOME TAXES

(Class 3, Cr. 3)

Prerequisite: MGMT 504

Advanced course in federal income taxes, with a brief study of gift and estate taxes. Some issues covered in MGMT 504 are studied in more depth, particularly taxation of corporations and partnerships. The course, which is taught in seminar format, gives the student considerable practice in doing tax research and reporting conclusions. It is especially appropriate for the student entering a career in a tax environment.

MGMT 508 ACCOUNTING FOR NONPROFIT ORGANIZATIONS

(Class 3, Cr. 3)

Prerequisite: MGMT 351

A fund accounting course for non-profit organizations. Accounting for government entities, colleges and universities, hospitals and other non-profit organizations are included. In addition, analysis and interpretation of not-for-profit organization statements are covered.

MGMT 509 INTERNATIONAL ACCOUNTING

(Class 3, Cr. 3)

Prerequisite: MGMT 351

Provides insight into and understanding of the many accounting problems and issues faced in an international business environment. The material is approached from two compatible and overlapping perspectives: the perspective of accounting

or financial management in a US multinational corporation and the perspective of an investor interested in understanding the international business environment.

MGMT 512 FINANCIAL INSTITUTIONS AND MARKETS

(Class 3, Cr. 3)

Prerequisite: MGMT 310 or MGMT 610 or MGMT 611

NOT open to students with credit in MGMT 412.

Analysis of management policy of financial institutions, including liquidity management, liability management, asset management, and capital management; description of the legal, economic, and regulatory environments and their implications for management. Emphasis on commercial bank management.

MGMT 516 INVESTMENT MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: MGMT 310 or MGMT 610 or MGMT 611

NOT open to students with credit in MGMT 445.

Treatment of problems of portfolio analysis, capital markets, and securities investment selection. Theoretical development and practical applications, at the level of the individual decision-maker.

MGMT 534 ACCOUNTING PRACTICE

(Class 4, Cr. 4)

Prerequisite: MGMT 351 and MGMT 404 and MGMT 406 and MGMT 407

Presents a view of the various accounting, legal, and regulatory subjects expected to be tested on the uniform CPA exam. Topics covered include financial accounting and reporting, auditing, business environment and concepts and business regulation.

MGMT 544 DATABASE MANAGEMENT SYSTEMS

(Class 3, Cr. 3)

Prerequisite: CS 235

Covers the theory and practice of database design and usage. Students will learn the importance of data modeling concepts and how to use these effectively and how to plan and design a database, including issues such as a data security and control.

MGMT 546 DECISION SUPPORT AND EXPERT SYSTEMS

(Class 3, Cr. 3)

Since a large percentage of societal and management problems can be characterized as relatively unstructured, this course explores how computers can be used to aid decision makers in dealing with unstructured, as well as structured, problems. Appropriate materials from knowledge representation, artificial intelligence and language theory is considered. Applications selected from environmental management and strategic planning in large organizations are used to illustrate theoretical ideas. Since the key computer software tool is database management, a development of the CODASYL approach to database management is presented.

MGMT 553 LABOR LAW

(Class 3, Cr. 3)

A study of the common law and statutory law affecting union-management relations, with emphasis on current labor legislation including such areas as the National Labor Relations Act and amendments, the Railway Labor Act, wage and hour legislation, workmen's compensation, unemployment compensation, Occupational Health and Safety Acts and social security laws.

MGMT 583 SMALL BUSINESS MANAGEMENT

(Class 3, Cr. 3)

Open only to seniors and graduate students. Fundamentals of profit analysis, financial planning, and management control for small business. Topics covered include evaluation of product policies, marketing and pricing strategies, organization structure and control mechanisms. Included also are investment requirements of operating a business and alternative ways of financing, including bank loans, mortgage financing, venture capital and public stock offering. Sensitivity tests, simulation studies, and microcomputer applications also are included. Independent term paper included.

MGMT 590 DIRECTED READINGS IN MANAGEMENT

(Class 0 to 4, Cr. 2 to 4)

Supervised reading and reports in various subjects. Open only to a limited number of seniors and graduate students.

MGMT 600 FINANCIAL ACCOUNTING I*(Class 3, Cr. 3)*

For students in the management graduate program or by consent of school. Two-semester accounting sequence employs a user's perspective on the firm's database. First, the standard accounting model is developed into a working tool, as no prior study of accounting is assumed. Then illustrative business cases are discussed to show how external reports conform to financial contracts and public regulation. Public reports primarily directed to investors and creditors are analyzed to reconstruct the economic events and managerial decisions underlying generally accepted accounting standards.

MGMT 601 MANAGERIAL ACCOUNTING*(Class 2 to 4, Cr. 2 to 4)**Prerequisite: MGMT 600*

Oriented to managers. Examines the firm's internal systems for costing products or services and their interpretation. A variety of manufacturing and service industries are studied to demonstrate design of flexible cost systems to match the firm's technological, competitive and /or multi national environments. Applications to budgeting, variance analysis, pricing models, performance evaluation and incentives are demonstrated. Case discussion and analytical what if modes of instruction are used to enhance managerial skills of students. Design and use of accounting data are linked to other subjects in the program core and to ethical aspects of accounting policy issues.

MGMT 611 FINANCIAL MANAGEMENT II*(Class 2 to 4, Cr. 2 to 4)*

For students in the management graduate program or by consent of school. Long-term capital structure planning, capital budgeting, treatment of uncertainty in investment decisions, security underwriting, dividend policies, and mergers.

MGMT 612 FINANCIAL MANAGEMENT III*(Class 3, Cr. 3)**Prerequisite: MGMT 611*

Further treatment of topics in the financial management of non-financial corporations, from the viewpoint of the internal financial officer. Emphasis on applications. Continuation of MGMT 611, with additional depth and topic coverage.

MGMT 615 MANAGING THE MULTINATIONAL FIRM*(Class 3, Cr. 3)*

For students in the management graduate program or by consent of school. Integrative course dealing with the management of firms doing business internationally. Emphasis on decision making. Will draw upon, and adapt, managerial decision models developed for domestic operations, as well as cover appropriate international institutional material. Particular focus on finance and strategic management.

MGMT 620 MARKETING MANAGEMENT I*(Class 2 to 4, Cr. 2 to 4)*

For students in the management graduate program or by consent of the school. An integrated analysis of major marketing decisions, including product, pricing, advertising, distribution, and sales force policies.

MGMT 622 MARKETING STRATEGY*(Class 3, Cr. 3 or Class 4, Cr. 4)**Prerequisite: MGMT 620*

A managerial orientation to decision making in organizations dealing directly with mass consumer markets is provided. Important insights from the behavioral sciences are considered in light of decision objectives to develop capability in creation and management of consumer-oriented marketing campaigns.

MGMT 630 LEGAL AND SOCIAL FOUNDATIONS OF MANAGEMENT*(Class 3, Cr. 3)*

For students in the management graduate program or by consent of school. An examination of the nature of the legal environment from the viewpoint of the social and moral bases of law. Emphasis is given to the operation of our legal system and its significance in decision functions of management.

MGMT 650 STRATEGIC MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: MGMT 612 and MGMT 622*

Concepts and methods that integrate previous training in functional areas of management. The perspective is that of the general manager charged with direct-

ing the total enterprise. Emphasis is given to formulation and implementation of strategy.

MGMT 655 COMPETITIVE STRATEGY*(Class 3, Cr. 3)*

Exposes students to emerging trends in competitive strategy including intra-industry structure, competitive niches, interfirm, interdependence, and competitive dynamics.

MGMT 660 OPERATIONS MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: MGMT 611 and MGMT 620 and MGMT 670*

The course exposes students to the spectrum of operations management planning and decision-making activities, provides insights into the basic tradeoffs associated with operations managers reach and/or implement their decisions. Topics include manufacturing strategy, production planning, master scheduling, inventory control, forecasting, material requirements planning, just-in-time systems, quality management, and manufacturing technologies.

MGMT 670 QUANTITATIVE METHODS I*(Class 3, Cr. 3)*

For students in the management graduate program or by consent of school. Introduction to quantitative decision procedures under uncertainty. Application of probability models. Bayesian inference, queuing models, hypothesis testing, and regression analysis to management problems.

MGMT 671 QUANTITATIVE METHODS II*(Class 3, Cr. 3)**Prerequisite: MGMT 670*

A continuation of Quantitative Methods I. Introduction to quantitative decision procedures under certainty. Applications of linear algebra, linear programming, network models, and convex programming to management problems.

MGMT 680 INTRODUCTION TO INFORMATION TECHNOLOGY*(Class 3, Cr. 3)*

For students in the management graduate program or by consent of school. An introduction to the capabilities, limitations and applications of computers to the business environment. Addresses issues relating to computer hardware and software data management, problem analysis, and other management information systems (MIS) topics. Students use the computer as programmers, as users of existing software systems, and in the role of managers within business decision-making contexts.

MGMT 681 MANAGEMENT WITH ENTERPRISE INFORMATION SYSTEMS*(Class 3, Cr. 3)*

Basic computer skills and exposure to core business functions, such as account and finance, marketing and human resources. This case-oriented course focuses on the managerial issues associated with human resource issues related to information systems, and a number of other topics important to an understanding of information systems in business.

MGMT 683 PRINCIPLES OF INFORMATION SYSTEMS*(Class 2 to 4, Cr. 2 to 4)**Prerequisite: MGMT 680*

The important technological issues of computing are presented. The emphasis is on the impact of technology on the organization. Topics include problem organization and complexity, database management, operating systems, data communications, and privacy. Research projects on an assigned topic provide greater depth of coverage of certain topics.

MGMT 685 ENTERPRISE INTEGRATION*(Class 2, Cr. 2 or Class 3, Cr. 3)**Prerequisite: MGMT 680 or MGMT 683*

Investigates the issues and requirements of enterprise integration; specifically, the issues related to information delivery services to enable cross functional integration within a distributed computing environment.

MGMT 690 ADVANCED PROBLEMS IN MANAGEMENT*(Class 0 to 4, Cr. 1 to 4)*

Admission requires consent of the department. Advanced investigation in a specific management field at the graduate level.

Materials Engineering

MSE 200 MATERIALS SCIENCE

(Class 3, Cr. 3)
Prerequisite: CHM 115

An introductory course designed to provide a basic background in the broad field of materials science. Emphasis placed on the chemical and physical principles underlying the utilization and behavior of metals, alloys ceramics, composites, and aggregates in engineering.

MSE 344 MATERIALS IN ENGINEERING

(Class 2, Lab. 3, Cr. 3)
Prerequisite: MSE 200 with a C or better

Introduction to the structure and mechanical and physical properties of engineering materials. Selection of metals, alloys, plastics, ceramics, and composites for engineering applications. Strengthening methods and environmental effects. Analysis of the failure of materials under load. Laboratory experiments include mechanical testing, metallography, thermal treatment, and failure analysis.

MSE 385 NONDESTRUCTIVE TESTING

(Class 3, Cr. 3)
Prerequisite: MSE 200 and PHYS 261

Basic principles and common application of nondestructive testing methods. The laws of physics are used to evaluate mechanical and physical properties of materials. The NDT methods cover magnetic, penetrants, eddy current, ultrasonic, radiography, and specialized methods.

MSE 597 SELECTED TOPICS IN MATERIAL ENGINEERING

Hours and credits to be arranged.

Military Science and Leadership

MSL 101 FOUNDATIONS OF OFFICERSHIP

(Class 1, Lab. 2, Cr. 2)
Examines the unique duties and responsibilities of officers. Discuss organization and role of the Army. Review basic life skills pertaining to fitness and communication. Analyze Army values and expected ethical behavior.

MSL 102 BASIC LEADERSHIP

(Class 2, Lab. 1, Cr. 2)
Presents fundamental leadership concepts and doctrine. Practice basic skills that underlie effective problem solving. Apply active listening and feedback skills. Examine factors that influence leader and group effectiveness. Examine the officer experience.

MSL 120 READ MILITARY MAP SURVIVAL

(Class 1, Cr. 1)
Fundamentals of reading and interpreting maps and aerial photographs, including marginal information, symbols, map orientation, military grid reference system, terrain analysis. Application by planning movement of small groups, emphasizing problem solving and control.

MSL 202 LEADERSHIP AND TEAMWORK

(Class 2, Lab. 2, Cr. 3)
Focuses on self-development guided by knowledge of self and group processes. Challenges current beliefs, knowledge, and skills. Provides equivalent preparation for the ROTC Advanced Course and the Leader's Training Course.

MSL 231 LEADERSHIP AND MANAGEMENT OF THE COMBAT TEAM

(Class 2, Lab. 2, Cr. 2)
Course includes organizing for effective control, management tools and procedures for the leader, techniques of managing limited resources, and small unit leadership. Uses practical exercises, small groups, and role-playing to develop an understanding of concepts and procedures. Leadership lab consists of applied professional development courses.

MSL 301 LEADERSHIP AND PROBLEM SOLVING

(Class 3, Lab. 0 to 2, Cr. 4)
Examines basic skills that underlie effective problem solving. Review the features and execution of the Leadership Development Program. Analyze military missions and plan military operations. Execute squad battle drills.

MSL 302 LEADERSHIP & ETHICS

(Class 3, Lab. 0 to 2, Cr. 4)
Probes leader responsibilities that foster an ethical command climate. Develop cadet leadership competencies. Prepare for success at National Advanced Leadership Camp. Recognize leader responsibility to accommodate subordinate spiritual needs. Apply principles and techniques of effective written and oral communication.

MSL 401 LEADERSHIP AND MANAGEMENT

(Class 3, Lab. 0 to 2, Cr. 4)
Builds on National Advanced Leadership Camp experience to solve organizational and staff problems. Discuss staff organization, functions and processes. Examine principles of subordinate motivation and organizational change. Apply leadership and problem solving principles to a complex case study/simulation.

MSL 402 OFFICERSHIP

(Class 3, Lab. 0 to 2, Cr. 4)
Designed to explore topics relevant to second lieutenants entering the Army. Describe legal aspects of decision making and leadership. Analyze Army organization for operations from the tactical to strategic level. Assess administrative and logistics management functions.

MSL UND MILITARY CREDIT

(Class 1 to 15, Cr. 1 to 15)
Credit by ROTC or DD 214.

Military Service

MILT UND MILITARY CREDIT

(Class 1 to 15, Cr. 1 to 15)
Credit by ROTC or DD 214.

Music History and Theory

MUS 203 MUSIC FOR ELEMENTARY TEACHERS

(Class 1, Lab. 2, Cr. 2)
Junior standing required.
An undergraduate methods course to provide future teachers in the elementary school with the knowledge, skills, and resources necessary to enhance the regular classroom situation with meaningful and varied musical experiences, and to execute the same with confidence, creativity, and enthusiasm.

MUS 250 MUSIC APPRECIATION

(Class 3, Cr. 3) TRANSFER IN
An introduction to the understanding of music. How to listen to its materials. A study of the media, forms, styles, and composers through recorded, live, and film media. Methods used in the structure of music as well as the aesthetic values present in music are also emphasized.

MUS 290 SPECIAL TOPICS IN MUSIC

(Class 1 to 3, Cr. 1 to 3)
Topics will vary.

MUS 361 MUSIC THEORY I

(Class 3, Cr. 3)
This course in music fundamentals is an investigation of the organization of musical sounds into the structure found in musical compositions. Activities are designed to help students acquire skills in music reading, in music listening, and in beginning piano techniques.

MUS 362 MUSIC THEORY II

(Class 3, Cr. 3)
Prerequisite: MUS 361 A
variety of styles and forms of music serve to exemplify melodic and harmonic processes and voice-leading practices in diatonic tonal music. Activities include analytic reading of musical scores, developing musical listening skills, and acquiring functional piano techniques.

MUS 363 MUSIC THEORY III

(Class 3, Cr. 3)
Prerequisite: MUS 362
Analytic study of art music and popular music representative of diatonic and chromatic tonal processes. Activities include analytic reading of musical scores,

developing musical listening skills, and acquiring functional piano techniques. Creative applications are encouraged.

MUS 378 JAZZ MUSIC

(Class 3, Cr. 3)

This course is a historical and stylistic study of jazz.

MUS 390 SPECIAL TOPICS IN MUSIC

(Class 1 to 3, Cr. 1 to 3)

Topics will vary.

MUS 490 GUIDED READING IN MUSIC

(Class 0 to 6, Cr. 1 to 6)

The course is offered for students with specialized needs and interests in the field.

Natural Resources and Environmental Sciences

NRES 202 CONCEPTS OF ENVIRONMENTAL SCIENCE

(Class 2, Lab. 2, Cr. 3)

This course covers basic issues in environmental sciences including life and environment of the earth, management of renewable and non-renewable resources (air, water, soil, food, minerals, energy, etc.) problems and prevention of pollution, and strategies for sustainable economic development. A multidisciplinary approach, based on teamwork, is emphasized. The course will possibly be team-taught by PUC faculty members.

NRES 491 ENVIRONMENTAL INTERNSHIP

(Class 1 to 3, Cr. 1 to 3) *Experiential Learning*

Prerequisite: NRES 202

Directed in-service training in government agencies or programs, industry, community organizations, or private-public joint organizations on environment subjects. Can be repeated to a total of 3 credits hours under the direction of the Environmental Science Program Coordinator.

Nursing

NUR 181 INTRODUCTION TO PROFESSIONAL NURSING

(Class 1, Cr. 1)

Pre: admission to the School of Nursing

This is the first in a series of seminars designed to examine nursing within its professional context. The heritage and tradition of professional nursing is explored as foundational to an understanding of contemporary nursing. Scholarly writing and research is introduced using APA format. Strategies are given to help students achieve academic success.

NUR 182 CONCEPTUAL AND THEORETICAL THINKING IN NURSING

(Class 2, Cr. 2)

Co-requisite: NUR 181

This course examines the concepts that forms the philosophical and theoretical basis of nursing science and patient centered care. The content is leveled to provide undergraduate students a foundational understanding of nursing as a discipline and profession. The conceptual framework and philosophy of the school of nursing will be studied. Special emphasis will be placed on the relationship between nursing philosophy, knowledge, research, and practice.

NUR 188 FOUNDATIONS OF PHYSICAL ASSESSMENT

(Class 2, Lab. 3, Cr. 3)

Prerequisite/Corequisite: BIOL 214 and NUR 192 and NUR 196

Foundational principles of physical assessment are examined in the context of patient centered care. A systematic approach to physical assessment of individuals across the life span is introduced. Health promotion, evidence based practice and critical thinking are presented as foundational to physical assessment.

NUR 192 FOUNDATIONS OF NURSING

(Class 2, Cr. 2)

Prerequisite/Corequisite: CHM 119 and NUR 181 and BIOL 214

The nursing process is introduced as a systematic approach to patient centered care. The concept of basic human needs and evidence based nursing practice are presented as foundational to the curriculum.

NUR 196 FOUNDATIONS OF PSYCHOSOCIAL NURSING

(Class 3, Cr. 3)

Prerequisite: PSY 120

Foundational principles of psychosocial nursing are taught in the context of patient centered care. Emphasis is placed on concepts of life span development, basic human needs, therapeutic relationships and therapeutic communication. The elemental components of evidence based nursing practice are introduced.

NUR 197 PRACTICUM I

(Lab. 6, Cr. 2)

Prerequisite/Corequisite: NUR 192 and NUR 196 and NUR 188

This course is the foundational clinical practicum incorporating principles of assessment, psychosocial nursing and nursing fundamentals to the clinical setting. Critical thinking skills are developed as students learn to apply the nursing process to provide patient centered care in order to meet the basic human needs of adult individuals. Clinically appropriate psychomotor skills are learned and reinforced.

NUR 265 HEALTH ISSUES IN THE CLASSROOM

(Class 3, Cr. 3)

Prerequisite: EDPS 220

This course is designed for prospective elementary education teachers. Students will examine current health problems of school children, which they may encounter in the classroom. Concepts of first aid and emergency care will be taught. Interdisciplinary approaches to classroom health problems will be incorporated. Students will be expected to apply course concepts in field experiences.

NUR 274 ESSENTIALS PHARMACOKINETICS FOR NURSING

(Class 2, Cr. 2)

Prerequisite/Corequisite: NUR 192

The nursing process is utilized as a systematic approach to the safe and accurate administration of medications: Dosage calculations, basic pharmacokinetics, safety implications, and use of critical thinking are emphasized.

NUR 275 ALTERNATIVE THERAPIES FOR NURSING PRACTICE

(Class 2, Cr. 2)

This course focuses on a range of options that complement Western biomedical health care. Ancient and contemporary practices throughout the world are explored in the context of culture, understanding that other cultures and countries have valid ways of preventing and curing diseases. Emphasis is placed on the integration and balance of body, mind and spirit. The evidence basis of complementary and alternative therapies is incorporated into the course.

NUR 282 ADULT NURSING I

(Class 4, Cr. 4)

Prerequisite: NUR 197 and BIOL 214 and NUR 274 *Co-requisite:* NUR 283, NUR 294

This course builds on the foundational nursing courses. Concepts of health promotion, maintenance, restoration and palliation will be utilized to focus on patient centered care in the adult population. Evidence based practice will guide the nursing process to address basic human needs.

NUR 283 PRACTICUM II

(Lab. 6, Cr. 2) *Experiential Learning*

Prerequisite: NUR 197

Co-requisite: NUR 282

Practicum II is the second clinical course in a series of three practica. Clinical lab experience emphasize application of the nursing process in the direct care of adult individuals with an emphasis on health promotion, health maintenance, and palliation. Patient centered care related to basic human needs is implemented utilizing critical thinking and evidence based nursing practice.

NUR 286 MENTAL HEALTH NURSING

(Class 3, Cr. 3)

Prerequisite: NUR 196 and NUR 197

Building on the foundations of psychosocial nursing, this course advocates for autonomy of clients in the least restrictive environment. A commitment to social justice for those who experience discrimination on the basis of their mental illness is emphasized. Evidence based nursing practice provides the structure for supporting clients' and their families' strengths and adaptation when faced with pathology and dysfunction. The focus is on interpersonal and communication skills critical to every area of nursing practice.

NUR 287 MENTAL HEALTH PRACTICUM*(Lab. 3, Cr. 1)**Prerequisite: NUR 197 and NUR 286*

Building on the theoretical knowledge of Mental Health Nursing. This course provides both structured and unstructured clinical experiences with individuals and families, experiencing mental disorders. The focus is on mental health promotion, mental health restoration, and mental health maintenance. Using current evidence, patient centered care is based on the analysis of individual clients' psychodynamic and psychoeducational needs. Interpersonal and communication skills are utilized to help clients attain their personality defined quality of life.

NUR 294 ESSENTIAL PHARMACOTHERAPEUTICS FOR NURSING*(Class 3, Cr. 3)**Prerequisite/Corequisite: NUR 274 and NUR 192*

A systematic approach is used to examine the pharmacotherapeutics and the administration of common prescription and non-prescription medications across the lifespan. Emphasis is placed on nursing responsibilities related to ongoing assessment of drug effects, analysis of corresponding diagnostic data and evidence based interventions with individuals receiving drug therapy.

NUR 299 SPECIAL TOPICS*(Class 0 to 6, Cr. 1 to 6)*

Hours, credit, and subject matter to be arranged by staff. Course may be repeated for credit up to six hours.

NUR 317 NURSING CARE OF WOMEN THROUGH THE LIFESPAN*(Class 3, Cr. 3)**Prerequisite/Corequisite: NUR 294 and NUR 282 and NUR 283*

Building on previous curricular concepts this course focuses on principles of health promotion, health maintenance, health restoration and palliation, specifically applied to the female patients. Students further develop critical thinking skills by planning developmentally appropriate patient and family centered care. Students utilize best available evidence when implementing the nursing process with female patients and their families.

NUR 318 MATERNITY PRACTICUM*(Cr. 1) Experiential Learning**Prerequisite: NUR 317*

Building on the theoretical knowledge of Nursing Care of Women Throughout the Lifespan this provides structured clinical experiences with women and their families during the childbearing experience. Evidence based nursing practice is utilized to assist families as they progress through the childbearing experience. The teaching learning process is used to assist childbearing families meet basic needs of the developing family.

NUR 352 NURSING CARE OF OLDER ADULTS*(Class 1, Cr. 1)**Co-requisite: NUR 393*

This course examines concepts related to basic human needs specific to older adults. Evidence based health care practices that exhibit patient centered care related to health promotion, maintenance, restoration and palliation are examined. Ethical and legal dilemmas impacting the lifestyle of older adults are presented. Emphasis is placed on promoting positive attitudes of the professional nurse in caring for older adults.

NUR 361 PEDIATRIC NURSING*(Class 2, Cr. 2)**Prerequisite: NUR 282 and NUR 283 and Pre/Corequisite NUR 294*

Building on previous curricular concepts this course focuses on principles of health maintenance, health restoration and palliation specifically applied to the pediatric patient. Students further develop critical thinking skills by planning developmentally appropriate patient and family centered care. Students utilize best available evidence when implementing the nursing process with pediatric patients and their families.

NUR 372 PEDIATRIC NURSING PRACTICUM*(Cr. 1)**Prerequisite: NUR 361 and Pre/Corequisite: NUR 294*

This clinical provides patient care experience that support the application of the nursing process in the provision of patient centered care to children and families. These experiences are provided in acute and chronic settings. Developmentally appropriate, evidence based nursing care is practiced.

NUR 384 CONCEPTS OF ROLE DEVELOPMENT IN PROFESSIONAL NURSING*(Class 3, Cr. 3)**Prerequisite: NUR 197*

This course examines professional nursing roles and professional nursing standards of practice within the context of structured and unstructured settings. Concepts and issues pertinent to the current environment of professional nursing practice are discussed. Personal and professional values that provide a focus for evolving professional socialization are explored.

NUR 385 APPLICATION OF PRINCIPLES OF ECG MONITORING*(Class 2, Cr. 2 or Class 3, Cr. 3)**Prerequisite: NUR 282*

This course is designed to enable the nursing student to utilize electrocardiographic tracings in the management of adult patients with cardiac conduction abnormalities. Emphasis is placed on practical application of principles of cardiac monitoring, identification and interpretation of dysrhythmias, and related medical management and nursing intervention.

NUR 388 NURSING OF FAMILIES AND GROUPS*(Class 3, Cr. 3)**Prerequisite/Corequisite NUR 286 and NUR 182*

Theoretical frameworks and the nursing process are utilized to support the basic needs, promote the health of families and groups, and facilitate the development of group leadership skills.

NUR 390 NURSING RESEARCH*(Class 3, Cr. 3)**Prerequisite/Corequisite: BHS 201*

This course examines the research process and use of research based evidence as a foundation for nursing. A review of both quantitative and qualitative methodologies will be incorporated. Distinguishing among non-research based primary and meta-sources of evidence will be emphasized. Critical thinking skills will be used to read and evaluate published research.

NUR 391 PROFESSIONAL ETHICS*(Class 2, Cr. 2)**Prerequisite: NUR 283*

Theoretical and practical application of ethical principles are applied to nursing and patient centered care. Particular attention is given to the ideas of advocacy, autonomy, and authority in beginning professional nursing practice.

NUR 392 ADULT NURSING II*(Class 3, Cr. 3)**Prerequisite: NUR 283 Co-requisite: NUR 393*

Continuing to build on the core concepts introduced in Adult Nursing I evidence based nursing practice is utilized as an approach to patient centered care with adult individuals seeking health. Concepts relative to basic human needs are emphasized.

NUR 393 PRACTICUM III*(Lab. 9, Cr. 3) Experiential Learning**Prerequisite: NUR 283 Co-requisite: NUR 392*

Practicum III is the third clinical course in a series of three practica. Clinical lab experiences involve the provision of evidence based, patient centered, nursing care to individuals and small groups of adults with complex medical problems. Building on the complexity of the role of the nurse, the concepts of time management, prioritization delegation, and collaboration are introduced with practical application in the clinical setting.

NUR 394 HEALTH PROMOTION AND EDUCATION*(Class 3, Cr. 3) Experiential Learning**Prerequisite: CIS 204*

The role of the nurse as a health educator is implemented. Nursing and non-nursing theories related to health promotion and teaching-learning processes are examined. Principles of health literacy related to patient education are emphasized. Evidence-based nursing projects related to health education within a community environment are implemented.

NUR 397 NURSING CARE OF THE AGED, DISABLED AND CHRONICALLY ILL*(Class 3, Cr. 3)**Prerequisite: NUR 283 and CIS 204*

Basic human needs of the aged, person's living with chronic health problems and/or disabilities are introduced. Principles of health promotion, health restoration and

palliation are examined. Evidence based nursing practice is emphasized within the context of patient centered care.

NUR 399 SPECIAL TOPICS

(Class 0 to 3, Lab. 0 to 9, Cr. 1 to 3)

Hours, credit, and subject matter to be arranged by staff. Course may be repeated for credit up to nine hours.

NUR 415 PATHOPHYSIOLOGY

(Class 3, Cr. 3)

Prerequisite: NUR 282 and NUR 283

The most common morbidity problems manifested throughout the lifespan are studied. Pathophysiologic concepts and physiologic responses are integrated with the nursing process. The application of evidence based nursing practice modalities provides a basis to address basic human needs.

NUR 482 NURSING LEADERSHIP AND MANAGEMENT

(Class 2, Cr. 2)

Prerequisite: NUR 384 and Pre/Corequisite: NUR 390

Theories and evidence related to leadership, organization and management are examined. Specific strategies for effective time management, priority setting, decision making career planning and delegation are introduced. Approaches to the quality nursing practice within a complex work environment are discussed.

NUR 485 COMMUNITY HEALTH PRACTICUM

(Class 1, Lab. 6, Cr. 3) Experiential Learning

Prerequisite: NUR 318, 372 and NUR 393 and NUR 397 and Pre/Corequisite NUR 486

The community health practicum emphasizes integration of professional nursing roles and community health concepts. The nursing process is utilized as a systematic approach to foster adaptation to stimuli within a dynamic environment. Evidence based interventions that emphasize preventative strategies are applied to persons across a lifespan in unstructured settings.

NUR 486 COMMUNITY HEALTH NURSING

(Class 3, Cr. 3)

Prerequisite: NUR 388 and NUR 390 and NUR 394

Concepts of community, and community health nursing are introduced. Community health nursing roles related to evidence based practice, leadership, collaboration, quality improvement and political activism are explored. Critical thinking skills are applied in the assessment of a community and its potential for meeting the basic human needs of its constituents.

NUR 488 Capstone Course Preparation

(Class 1, Cr. 1)

Prerequisite: NUR 393 and NUR 485 Note: NUR 487 and NUR 497 can be taken before or during the same semester as NUR 488.

Under the guidance of faculty, the student develops a plan to synthesize the roles of professional nursing, specifying learning objectives, learning activities, and evaluation criteria for a practicum in an identified area of interest.

NUR 498 CAPSTONE COURSE IN NURSING

(Class 1, Lab. 6, Cr. 3) Experiential Learning

Prerequisite: All Nursing and Non-Nursing Courses Pre/Corequisite NUR 485 and NUR 486; Humanities Elective

Senior students will synthesize the professional roles of nursing in accordance with the program terminal objectives. In collaboration with a nursing faculty and clinical preceptor, students will plan and implement a practicum experience consistent with the professional leadership role. Students will use critical thinking skills and evidence based practice to promote patient centered nursing in a health care environment of work complexities. This course will culminate with an evidence-based project that will be presented to peers and the academic community.

NUR 500 THEORETICAL CONSTRUCTS IN NURSING

(Class 3, Cr. 3)

Prerequisite: NUR 501

This course examines nursing theories from both theoretical and pragmatic points of view. Content includes the historical significance of theory development, the relative scientific position of current nursing theories, and contemporary applications of theory in nursing research and practice. Major focuses include analysis of concepts, systematic examination of theories and conceptual frameworks and the initial development of a personal philosophical view of nursing as it relates to advanced nursing practice.

NUR 501 FOUNDATIONS OF ADVANCED PRACTICE NURSING

(Class 2, Cr. 2)

This course explores the historical and contemporary context of advanced practice nursing. Provides students with the content necessary for them to gain the most from their graduate school experiences, to make informed choices concerning career goals for advanced practice nursing, and to follow the educational paths that fit their individual goals. Students apply skills in information mastery and acquisition, analysis, and utilization, as they examine models and role competencies of the Advanced Practice Nurse.

NUR 502 PHARMACOTHERAPEUTICS FOR ADVANCED PRACTICE NURSING

(Class 3, Cr. 3)

Prerequisite: NUR 507

Course includes both pharmacotherapeutics and pharmacokinetics of broad categories of pharmacologic agents. Covers principles of pharmacodynamics, pharmacokinetics, adverse drug reactions, special populations considerations, in addition to the regulations relevant to prescriptive authority for advanced practice nurses. Provides the basis of more specific pharmacologic management in subsequent courses.

NUR 503 ADVANCED HEALTH ASSESSMENT

(Class 2, Lab. 3, Cr. 3)

Prerequisite: NUR 501 and NUR 502 and NUR 505 and NUR 507 and NUR 510

This course builds on basic health assessment knowledge to develop advanced health assessment skills. Major concepts of the course include comprehensive and focused history taking and advanced physical assessment. History and physical assessment findings are related to underlying physiologic and pathophysiologic mechanisms. The course provides a basis for designing a culturally appropriate and effective plan of care within the context of the individual.

NUR 505 SOCIOCULTURAL INFLUENCES ON HEALTH

(Class 3, Cr. 3)

This course analyzes various social, cultural, and economic factors that impact the health and illness perceptions and behaviors of various ethnic and minority groups. Content includes an examination of social, psychological, and cultural theories, a review of current research about health and illness beliefs and behaviors and the development of strategies that will improve the care provided by the advanced practice nurse.

NUR 507 PHYSIOLOGIC CONCEPTS FOR ADVANCED PRACTICE NURSING

(Class 3, Lab. 3, Cr. 4)

Prerequisite/Corequisite NUR 501

Students examine the principles of physiologic function at all levels of organization from cells to organ systems as they affect human function. The course uses homeostasis as a model to account for regulatory and compensatory functions in health. Students develop the necessary theoretical and empirical foundation for subsequent understanding of the diagnosis and management of human responses to disease and nondisease-based etiologies.

NUR 510 NURSING RESEARCH

(Class 3, Cr. 3)

Prerequisite: NUR 501 and an introductory statistics course, such as PSY 500 or equivalent.

Provides an in-depth examination of the research process as it applies to nursing and health-related disciplines. Students develop a systematic approach to developing a proposal for a clinical research project and to evaluating the scientific and clinical merit of published reports of research. The role of advanced practice nurses as collaborative members of research teams and users of research is stressed.

NUR 511 CONCEPTS AND APPLICATION OF HEALTH PROMOTION FOR ADVANCED PRACTICE NURSING

(Class 2, Cr. 2 or Class 2, Lab. 3, Cr. 3)

Prerequisite: NUR 503 and NUR 510

Health promotion/disease prevention and health education frameworks and research are analyzed as a basis for strategies employed by advanced practice nurses. The National Health Agenda is used to address risk assessment screening and education/counseling interventions for improving the health status of client populations. Students apply these concepts and strategies to diverse populations in the clinical setting. Note: NUR 511A (Lecture Only); NUR511B (Lecture and Lab)

NUR 527 ETHICS FOR ADVANCED PRACTICE NURSING*(Class 3, Cr. 3)*

Requirement: Graduate standing or consent of instructor.

Examines nursing ethics from both theoretical and pragmatic viewpoints. Content includes the historical, theoretical, contextual, and practical aspects of ethical nursing practice. A major focus is on the application of ethical frameworks, concepts, and principles to practice in the current healthcare system.

NUR 599 SPECIAL TOPICS IN NURSING*(Class 0 to 6, Cr. 1 to 6)*

Requirement: Graduate standing or consent of instructor. Special topics in nursing are critically examined. Hours, credit and subject matter are determined by staff.

NUR 600 ADULT HEALTH CLINICAL NURSE SPECIALIST I*(Class 3, Cr. 3)**Prerequisite: NUR 500 and NUR 511 Corequisite: NUR 601*

Students analyze theory and research related to the patient/ client sphere of influence in order to design care for patients with adult health disorders. Students use problem solving and evidence-based practice methodologies to diagnose, plan and evaluate interventions for select disease and nondisease based phenomena. The focus is on understanding etiologies of symptoms and functional problems, the need for intervention, and associated outcomes of practice.

NUR 601 ADULT HEALTH CLINICAL NURSE SPECIALIST PRACTICUM I*(Cr. 2)**Prerequisite: NUR 500 and NUR 511 and NUR 600*

Students apply advanced knowledge of theory and research to care for patients/ clients with adult health disorders who require the care of a clinical nurse specialist. Students use problem-solving methodologies based on synthesis of theoretical and empirical evidence to advance nursing care of patients/clients. Students participate in direct and indirect care activities that impact nurse-sensitive patient client outcomes.

NUR 602 CRITICAL CARE CLINICAL NURSE SPECIALIST I*(Class 3, Cr. 3)**Prerequisite: NUR 500 and NUR 511 Co-requisite: NUR 603*

Students analyze theory and research related to the patient client sphere of influence in order to design care for patients with critical illness. Students use problem-solving and evidence-based practice methodologies to diagnose, plan and evaluate interventions for select disease and nondisease based phenomena. The focus is on understanding etiologies of symptoms and functional problems, the need for intervention and associated outcomes of practice.

NUR 603 CRITICAL CARE CLINICAL NURSE SPECIALIST PRACTICUM I*(Cr. 2)**Prerequisite: NUR 500 and NUR 511 and NUR 602*

Students apply advanced knowledge of theory and research to care for patients/ clients with critical illness who require the care of a clinical nurse specialist. Students use problem-solving methodologies based on synthesis of theoretical and empirical evidence to advance nursing care of patients/clients. Students participate in direct and indirect care activities that impact nurse-sensitive patient client outcomes.

NUR 611 PRIMARY CARE OF THE YOUNG FAMILY*(Class 3, Cr. 3)**Prerequisite: NUR 500 and NUR 511 Co-requisite: NUR 613*

Prepares family nurse practitioner students to assume responsibility for the coordination and delivery of culturally appropriate health services to childbearing and childbearing families. Students apply theory and research to the management of pregnancy, well-child care, stable chronic conditions and acute episodic illnesses commonly encountered in primary care settings. The course emphasizes a sound conceptual basis for practice and an appreciation for evidence-based care. Students continue to integrate health promotion and health maintenance into the primary care of young families.

NUR 613 PRIMARY CARE OF THE YOUNG FAMILY PRACTICUM*(Cr. 3)**Prerequisite: NUR 500 and NUR 511 and NUR 611*

Students progress in their ability to master the competencies of the family nurse practitioner, using critical thinking and diagnostic reasoning skills. Students apply knowledge of clinical research, pharmacology physiology, and conceptual frameworks to the primary care of childbearing and childrearing clients and families.

NUR 618 ADULT HEALTH NURSING II*(Class 3, Cr. 3)**Prerequisite: NUR 600 Co-requisite: NUR 620*

Students analyze theories and research related to adult health nursing personnel and organizational spheres of influence. Clinical nurse specialist competencies focused toward nursing personnel and other healthcare providers and organizations are addressed. The emphasis is on using problem-solving and evaluation methodologies that address nursing care and organizational issues.

NUR 620 ADULT HEALTH NURSING PRACTICUM II*(Cr. 2)**Prerequisite: NUR 601 Co-requisite: NUR 618*

Students apply theories and research related to adult health nursing personnel and organizational spheres of influence. Students begin to develop professional role competencies related to nursing personnel and the healthcare organization. Students use systematic assessment and evaluation methodologies to identify problems and evaluate outcomes.

NUR 622 PRIMARY CARE OF THE AGING FAMILY*(Class 3, Cr. 3)**Prerequisite: NUR 611 and NUR 613 Co-requisite: NUR 623*

This course prepares family nurse practitioner students to assume responsibility for the coordination and delivery of culturally appropriate health services to middle-aged and older families. Students learn to manage stable chronic conditions and acute episodic illnesses commonly encountered in primary care settings. The course emphasizes the conceptual basis for practice and an appreciation for evidence-based care. Students continue to integrate health promotion and health maintenance into the primary care of older clients and their families.

NUR 623 PRIMARY CARE OF THE AGING FAMILY PRACTICUM*(Cr. 3)**Prerequisite: NUR 613 Co-requisite: NUR 622*

Students progress in their ability to master the competencies of the family nurse practitioner, using critical thinking and diagnostic reasoning skills. Students apply knowledge of clinical research, pharmacology physiology and conceptual frameworks to the primary care of middle aged and older clients and families.

NUR 630 CRITICAL CARE NURSING II*(Class 3, Cr. 3)**Prerequisite: NUR 602*

Students analyze theories and research related to critical care nursing personnel and organizational spheres of influence. Clinical nurse specialist competencies focused toward nursing personnel and other healthcare providers and organizations are addressed. The emphasis is on using problem-solving and evaluation methodologies that address nursing care and organizational issues.

NUR 635 CRITICAL CARE NURSING PRACTICUM II*(Cr. 2)**Prerequisite: NUR 603*

Students apply theories and research related to critical care nursing personnel and organizational spheres of influence. Students begin to develop professional role competencies related to nursing personnel and the healthcare organization. Students use systematic assessment and evaluation methodologies to identify problems and evaluate outcomes.

NUR 655 SEMINAR IN ADVANCED PRACTICE NURSING*(Class 1, Cr. 1)**Prerequisite: NUR 601 and NUR 603 and NUR 613 or NUR 623*

Students analyze movements and trends that influence advanced nursing practice. Students dialogue with peers on topics related to student interests, clinical projects, nursing and advanced practice role issues.

NUR 656 HEALTHCARE ORGANIZATION, POLICY, AND ECONOMICS*(Class 3, Cr. 3)**Prerequisite: NUR 501*

Provides an introduction to healthcare policy and economics as they impact the healthcare system. Provides the theoretical background needed to understand the various models used to organize healthcare, influences on healthcare policy, and the impact of economics on healthcare. Emphasis is on policy analysis, politics, and the processes relevant to health policy formation, with linkages to advanced practice nursing and reimbursement issues.

NUR 657 FNP PRACTICUM: CLINICAL SYNTHESIS

(Cr. 2)

Prerequisite: NUR 622 and NUR 623 and NUR 656 Co-requisite: NUR 655

This is the final clinical capstone course in a sequence of clinical courses designed to prepare graduate nursing students for FNP practice. Students synthesize and apply theoretical and empirical knowledge in primary care settings with culturally diverse clients and families. Emphasis is given to the clinical management of a wider spectrum of clients and to the more complex, co-morbid conditions seen in family practice.

NUR 658 ADULT HEALTH CLINICAL NURSE SPECIALIST PRACTICUM III

(Cr. 2)

Prerequisite: NUR 620 and NUR 656 Co-requisite: NUR 655

Students further develop skill in applying theories and research related to managing the care of adult health patients and influencing adult health nursing personnel and organizations. Students continue to expand professional role competencies related to all of the spheres of influence. Students identify problems and evaluate the outcomes of care with respect to patients, nursing personnel, and organizations using systematic assessment and evaluation methodologies.

NUR 659 CRITICAL CARE CLINICAL NURSE SPECIALIST PRACTICUM III

(Cr. 2)

Prerequisite: NUR 635 and NUR 655 and NUR 656

Students further develop skill in applying theories and research related to managing the care of critical care patients and influencing critical care nursing personnel and organizations. Students continue to expand professional role competencies related to all of the spheres of influence. Students identify problems and evaluate the outcomes of care with respect to patients, nursing personnel, and organizations using systematic assessment and evaluation methodologies.

NUR 660 CURRICULUM DEVELOPMENT IN NURSING

(Class 3, Cr. 3)

Prerequisite: NUR 500

Theories of curriculum development, instructional design, and evaluation of educational programs are applied to the adult learner in nursing. Educational needs are analyzed, and objectives and content are designed.

NUR 662 TEACHING STRATEGIES FOR NURSING

(Class 2, Lab. 6, Cr. 4)

Prerequisite: NUR 660

Theories of learning, testing and measurement are analyzed. Theory-based teaching strategies are applied in a precepted clinical practice field or academic setting. The effectiveness of teaching activities and instructional materials are evaluated.

NUR 670 PRACTICUM IN NURSING RESEARCH

(Class 1 to 6, Cr. 1 to 6)

Prerequisite: NUR 510

Variable credit 1-6. Amount of credit to be determined by nature and extent of the assignment. Students participate in nursing research projects under the guidance of the faculty. This plan of individualized instruction may be used in any area of nursing specialization, education, or administration.

NUR 671 ADMINISTRATIVE PRACTICUM I

(Class 2, Cr. 2)

Prerequisite: NUR 652

This course provides the graduate student with the opportunity to operationalize the concepts learned in the Master of Science Nursing program. Through mutual agreement, the student and advisor choose an area of concentration and clinical practice site appropriate for meeting course and student goals. The student has a master's prepared preceptor at the practicum site.

NUR 672 ADMINISTRATIVE PRACTICUM II

(Class 2, Cr. 2)

Prerequisite: NUR 671

This course is a continuation of NUR 671 which provides the graduate student with the opportunity to operationalize the concept learned in the Master of Science in Nursing program. Through mutual agreement, the student and advisor choose an area of concentration and clinical practice site appropriate for meeting course and student goals. The student has a master's prepared preceptor at the practicum site. This practicum may be a continuation of NUR 671 with the same preceptor in the same site, or it may be a new area of concentration that meets the same practicum criteria as NUR 671.

NUR 698 RESEARCH: MASTER'S THESIS

(Class 0 to 6, Lab. 0 to 15, Cr. 1 to 6)

Prerequisite: NUR 510

Variable credit 1-6. Open to students who elect an optional functional track in research. The student enrolls with the faculty member directing the thesis.

Organizational Behavior

OBHR 330 INTRODUCTION TO ORGANIZATIONAL BEHAVIOR

(Class 3, Cr. 3)

Junior standing desirable. An integrated social science approach to administrative problems and administrative behavior. Behavior in organizations is examined in the context of psychological and sociological principles with attention given to such problems as motivation, influence, communication, leadership, small group processes, and organizational change. Emphasis is placed on the development of theoretical and empirical skills in diagnosing and responding to interpersonal problems as well as experience-based learning.

OBHR 423 NEGOTIATIONS

(Class 3, Cr. 3)

This course provides both the theoretical foundation and practical methods for performing effective negotiations, persuading, and managing conflict in real life situations. Participants will be able to increase their own knowledge of the field and will be able to improve the outcomes of their own negotiation for themselves and others. The participants will also be able to use their knowledge of conflict management to more effectively resolve interpersonal and inter-group conflicts, both from the perspective of a participant and a third-party.

OBHR 426 TRAINING AND MANAGERIAL DEVELOPMENT

(Class 3, Cr. 3)

Prerequisite: OBHR 431 or BA 231

This course focuses on training from a line managerial perspective and on management development, addressed through a consideration of critical personal, interpersonal and term related skills.

OBHR 427 OCCUPATIONAL SAFETY AND HEALTH

(Class 3, Cr. 3)

An examination of the economic, legal and social factors of occupational safety and health issues within an organization. Consideration will be given to the compliance with federal and state laws, safety training programs safety recognition and incentive programs, health education programs and joint labor/management safety committees.

OBHR 430 LABOR RELATIONS

(Class 3, Cr. 3)

A basic course in economic theory or consent of the department required. The course focuses on employee-employer relations under collective bargaining. Attention is also given to topics in trade union development and structure, wage analysis, the problem of economic insecurity, the role of government in labor relations, and employment aspects of the civil rights movement.

OBHR 431 HUMAN RESOURCE MANAGEMENT

(Class 3, Cr. 3)

A study of the human resource management function in the business firm. Traditional line and staff relationships are discussed. Motivation, job design, and aspects of the legal environment of human resource management are analyzed.

OBHR 433 HUMAN RESOURCE PLANNING SELECTION, AND PLACEMENT

(Class 3, Cr. 3)

Prerequisite: OBHR 431 or BA 231

An examination of the theory and practice of human resource planning, selection, and placement. The course will link human resource planning to organization-wide strategic planning. Selection devices as well as validation and reliability strategies are discussed. The implications of legal requirements for hiring practices are investigated.

OBHR 434 BENEFITS ADMINISTRATION

(Class 3, Cr. 3)

Prerequisite: OBHR 431 or BA 231

A study of the historical, financial, motivational, and substantive aspects of employee benefits. Emphasis will be placed on practical administration. Consideration will be given to issues of productivity, union involvement, and future trends in benefit management.

OBHR 435 COMPENSATION MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: OBHR 431 or BA 231

A study of the theory and practice of employee compensation systems considering monetary topics, performance appraisal maintenance, audits of compensation decisions, internal equity, and individual equity will be discussed.

OBHR 436 COLLECTIVE BARGAINING

(Class 3, Cr. 3)

Prerequisite: OBHR 431 or BA 231

Considers current developments in the areas of collective bargaining, negotiations, and third party mediation and arbitration practices. Consideration will be given to the environments, structure, and processes of collective bargaining. Emphasis is on the practical aspects of labor-management negotiation and proceedings.

OBHR 437 MANAGING CAREER DEVELOPMENT

(Class 3, Cr. 3)

Prerequisite: OBHR 431 or BA 231

A consideration of individual and organization-centered approaches to career development. The seminal theories of career development. The seminal theories of career management will be discussed in terms of practical applications. Topics in career and life stage development will be explored. Career path, dual career families, and careers in emerging fields will be discussed. Methods for diagnosing and planning services for employees from diverse backgrounds and at various occupational levels are considered.

OBHR 438 GENDER AND DIVERSITY IN MANAGEMENT

(Class 3, Cr. 3)

This course will focus on the challenges of managing a work force. Consideration will be placed on identifying and resolving workplace problems attributed to the presence of demographic differences such as gender, race, ethnicity, age and able bodiness background among employees within a given work environment. Emphasis is on developing and conducting diversity training programs and reinforcing principles of valuing diversity.

OBHR 439 EMPLOYMENT LAW

(Class 3, Cr. 3)

This course presents and examines the principles of employee-employer relations law. Students will be exposed to various federal and state laws pertaining to employment discrimination based upon demographic differences, such as gender, race, age, ethnicity, and able bodiness. In addition, this course will address issues such as negligent hiring, employment-at-will, wrongful discharge, drug and alcohol testing, and privacy in the workplace.

OBHR 443 CONTEMPORARY LEGAL AND SOCIAL ISSUES IN HUMAN RESOURCE MGMT

(Class 3, Cr. 3)

Prerequisite: OBHR 431 or BA 231

This course involves the comprehensive study of contemporary legal and social issues facing managers, with heavy emphasis on human resource management (HRM). Legal and ethical issues relevant to HRM are discussed at a level where students will develop policies, and practices to assist firms avoid legal action and costly litigation. Defenses to human resource related lawsuits are also discussed. Theories regarding discrimination, harassment and social workplace issues are analyzed enabling students to apply their knowledge to novel concrete situations. The course assists current and future HR practitioners to effectively manage an organization's legal posture to be congruent with its strategic objective.

OBHR 490 PROBLEMS IN ADMINISTRATIVE SCIENCE

(Class 0 to 4, Cr. 1 to 4)

Supervised readings and reports in various subjects. Arrange with instructor before enrolling.

OBHR 590 PROBLEMS IN ADMINISTRATIVE SCIENCES

(Class 0 to 4, Cr. 1 to 4)

Supervised readings and reports in various subjects. Arrange with instructor before enrolling.

OBHR 632 COLLECTIVE BARGAINING

(Class 3, Cr. 3)

For students in the management graduate program or by consent of school. An in-depth examination of human resource management in the context of union-

management relations. The following subject matter is examined: history of unions, labor law and its application, worker incentives to unionize, organizing campaigns and election outcomes, structure of collective bargaining, contract negotiations, contract content, grievance procedures and arbitration, mediation, union-management cooperation, and the impact of unions cooperation, and the impact of unions on wages, fringe benefits, turnover, absenteeism, etc.

OBHR 633 HUMAN RESOURCE MANAGEMENT

(Class 3, Cr. 3)

Prerequisite: OBHR 690

Introduction to human resource management for general managers. Emphasis is on the impact of human resource components (e.g. staffing, rewards, labor relations) on the performance of the firm. Case analyses and computerized data bases are used to illustrate major components of human resource decision making.

OBHR 663 SEMINAR IN ORGANIZATION THEORY

(Class 3, Cr. 3)

For students in the management graduate program or by consent of school. The analysis and design of complex organizations. Emphasis is placed on current research in organizational theory and design. Topics include major theoretical perspectives, design parameters, structural configurations, culture, technology, the environment, and organizational effectiveness.

OBHR 681 BEHAVIOR IN ORGANIZATIONS

(Class 2 to 4, Cr. 2 to 4)

Individual and group behavior are the central components of components of the study of behavior in organizations. Focus is on the managerial application of knowledge to issues such as motivation, group process, leadership, organizational design structure, and others. The course employs cases, exercises, discussions, and lectures.

OBHR 690 ORGANIZATION AND MANAGEMENT

(Class 2 to 4, Cr. 2 to 4)

For students in the management graduate program or by consent of school. Analysis of management theories and the administrative processes. Specific managerial activities as they relate to productive efficiency and effectiveness are analyzed. Management functions of planning, organizing, directing, controlling, and staffing also are discussed.

Organization Leadershi and Supervision

OLS 102 FRESHMAN EXPERIENCE

(Class 1, Cr. 1)

This course provides entering first-year students with less than 60 credits an opportunity to become familiar with available departmental and university resources, such as the advising process, the course management system, engage in goal setting, align academic and life goals, explore available career options and develop a plan for success.

OLS 163 FUNDAMENTALS OF SELF-LEADERSHIP

(Class 3, Cr. 3)

This course compares and contrasts several frameworks for self-leadership, and provides students with the opportunity to study these frameworks to achieve success in life, school and career.

OLS 252 HUMAN RELATIONS IN ORGANIZATIONS

(Class 3, Cr. 3)

Study of the basis and organization of individual and group behavior. Special emphasis on typical supervisory relationships.

OLS 274 APPLIED LEADERSHIP

(Class 2 to 3, Lab. 0 to 2, Cr. 3)

An introduction to applied leadership in the context of organizational functions, structures and operations.

OLS 303 SUBSTANCE ABUSE IN THE WORKPLACE

(Class 3, Cr. 3)

Overviews alcohol and drug problems affecting job performance in the workplace. Topics covered include current concepts of alcoholism and addictions, supervisor's role and responsibilities, work behavior of alcohol and drug abusers. Constructive confrontation and intervention, employee assistance programming, and referral.

OLS 331 OCCUPATIONAL SAFETY AND HEALTH*(Class 3, Cr. 3)*

A presentation of those aspects of occupational safety and health which are most essential to the firstline supervisor. Emphasis is placed on developing an understanding of the economic, legal, and social factors related to providing a safe and healthful working environment.

OLS 332 FUNDAMENTALS OF INDUSTRIAL HYGIENE*(Class 3, Cr. 3)**Prerequisite: OLS 331*

An examination of the industrial hygiene factors instrumental in maintaining a safe and healthful workplace. Special emphasis is given to the recognition, evaluation, and control of occupational health hazards.

OLS 333 SAFETY, HEALTH & ENVIRONMENTAL LAWS, CODES, REGULATIONS, AND STANDARDS*(Class 3, Cr. 3)**Prerequisite: OLS 331 or consent of instructor.*

A study of the various laws, codes, and standards which affect the safety field. Emphasis is placed on an in-depth study of the Occupational Safety and Health Act (OSHA) and the applicable standards therein.

OLS 334 FIRE PROTECTION*(Class 3, Cr. 3)**Prerequisite: OLS 331 or consent of instructor.*

Explores the principles involved in the protection of people and property from fire and explosion. Basic fire safety terminology, fire chemistry and extinguishment, fire safety references and standards, and fire safety management are presented. Also discussed are control measures for common fire and explosion hazards and the design of buildings in terms of life safety and fire suppressive systems.

OLS 336 FUNDAMENTALS OF RISK MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: OLS 331 and OLS 333*

Students shall learn five principles disciplines in the process of controlling or eliminating the risks associated with occupational injuries and illnesses in the workplace. Those disciplines are: 1) identifying the exposures to loss; 2) evaluating alternative techniques for treating the exposure; 3) selecting the appropriate technique(s); 4) implementing the chosen technique; and 5) monitoring and improving the risk management system. The class will take into consideration not only direct loss/damage to assets such as buildings and machinery, people and the loss from actions of people, failures, general liability, fleet liability, asset protection, errors and omissions but the indirect loss attributed to the direct loss and issues of legal liability.

OLS 337 INTRODUCTION TO EMERGENCY MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: OLS 331*

Students will learn the value of having plans to deal with a variety of emergencies likely to occur in either industrial or municipal environments. Students will come to understand the key concepts of emergency management including mitigation, preparedness and response and recovery. Each student will have to prepare an Emergency Response Plan and present it as part of the course requirements.

OLS 340 FUNDAMENTALS OF CONSTRUCTION SAFETY*(Class 3, Cr. 3)*

This course is structured to provide students with an overview of construction safety and health regulations. Throughout the course students will participate in discussions pertaining to construction safety issues and will be provided information to evaluate the primary OSHA targeted hazards in this industry. Students will learn to recognize key hazards, be exposed to control technologies and corrective actions for the prevention of an illness that commonly occurs at construction sites.

OLS 341 FUNDAMENTALS OF ENVIRONMENTAL HEALTH*(Class 3, Cr. 3)**Prerequisite: OLS 331 or consent of instructor.*

This class will be presented as an overview of current issues in community and working environments. Those issues which are most essential to the supervisor/manager will be emphasized. Students will develop an understanding of key Environmental Protection Agency (EPA) regulations such as CERCLA, Clean Air Act and its Amendments, Clean Water Act, and RCRA and typical means to ensure compliance.

OLS 343 HAZARDOUS MATERIALS*(Class 3, Cr. 3)**Prerequisite: OLS 331 or consent of instructor.*

Provide the student with a practical approach to the concepts of handling hazardous materials. Topics include: basic chemistry of hazardous materials, hazard classes and toxicology, evaluating risk, selecting correct protective equipment, specific competencies required of persons responding to a hazardous materials emergency, managing an incident, and addressing tactical and strategic issues while minimizing down-time and reducing risk to other workers.

OLS 350 APPLIED CREATIVITY FOR BUSINESS AND INDUSTRY*(Class 3, Cr. 3)*

A study of the ways an individual can become more creative and how they can develop an environment which encourages creativity from employees.

OLS 351 INNOVATION AND ENTREPRENEURSHIP*(Class 3, Cr. 3)**Prerequisite: OLS 350*

An in-depth study of innovation in existing organizations, as well as entrepreneurship in start-up businesses, franchises, family-owned firms, and other business formats.

OLS 355 ACCIDENT INVESTIGATION*(Class 3, Cr. 3)**Prerequisite: OLS 331*

Students will learn various approaches for conducting an accident investigation. As part of the class, students will be exposed to the accident process, methods to determine the causes of accidents, analyses of data gathered as part of the process and proper documentation. Through a series of case studies and examples, students will have the opportunity to identify the corrective action steps for preventing future occurrences and presenting those recommendations to management for implementation.

OLS 364 PROFESSIONAL DEVELOPMENT PROGRAM*(Class 3, Cr. 3)*

A survey course covering many professional facets relative to entering the work force upon graduation. Major areas addressed include resume preparation, interview techniques, development of job search plans, social skills, and analysis of career fields and opportunities.

OLS 374 SUPERVISION MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: OLS 252*

Introduction to and overview of the fundamental concepts of supervision. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, his relations with others, and his personal development.

OLS 375 TRAINING METHODS*(Class 3, Cr. 3)**Prerequisite: OLS 252*

Principles, practices, and variations of basic methods of instruction as related to training situations found in the work world. Emphasis on the supervisor as a trainer.

OLS 376 HUMAN RESOURCE ISSUES*(Class 3, Cr. 3)**Prerequisite: OLS 252*

Analysis and discussion of typical personnel situations faced by the supervisor. Emphasis directed toward development of student attitude, philosophy, analytical ability, and problem solving skills within the working environment.

OLS 378 LABOR/MANAGEMENT RELATIONS*(Class 3, Cr. 3)**Prerequisite: OLS 252*

An introduction to and overview of the fundamental concepts of labor relations, collective bargaining, and dispute resolution procedures. A comparative analysis is used to assess some of the legal economic, and political structures of labor relations.

OLS 384 LEADERSHIP PROCESS*(Class 3, Cr. 3)**Prerequisite: OLS 252*

One year life science and on year chemistry An in-depth study of a sequence of manager actions that influence employees to achieve desired performance results. How these manager actions are transformed by employees into desired performance also is covered.

OLS 387 EMERGENCY PLANNING AND PRACTICE*(Class 3, Cr. 3)**Prerequisite: OLS 331 and OLS 337*

Students will learn requirements imposed by the Occupational Safety and Health Administration (OSHA) for emergency plans. Students will come to understand the importance of developing and using emergency plans through emergency preparedness exercises. Students will develop an onsite emergency plan, and an emergency exercise to test the plans as part of the course requirement

OLS 389 EMERGENCY MANAGEMENT PROGRAMS*(Class 3, Cr. 3)**Prerequisite: OLS 331 and OLS 337 and OLS 387*

This class will assist students develop an 'all hazard' disaster plan for a facility or community. The class will examine current plans and practices developed for site, community or countrywide use.

OLS 399 SUPERVISION TOPICS*(Class 1 to 6, Lab. 0 to 3, Cr. 1 to 6)*

Hours and subject matter to be arranged by staff. (May be repeated for credit.)

OLS 415 INTRODUCTION TO ENVIRONMENTAL MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: OLS 331 and OLS 341*

This class will provide necessary exposure to environmental issues that students are likely to deal with in their careers.

OLS 421 PSYCHOLOGY OF SAFETY*(Class 3, Cr. 3)**Prerequisite: OLS 331*

This class will provide necessary exposure to contemporary approaches used to influence employees' safety related behaviors.

OLS 430 SAFETY AND HEALTH PROGRAM MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: OLS 331 and OLS 332 and OLS 333 and OLS 337*

A presentation of those aspects of occupational safety and health which are most essential to the first-line supervisor. Emphasis is placed on developing an understanding of the economic, legal and social factors related to providing a safe and healthful working environment.

OLS 433 ANALYSIS AND DESIGN OF SAFETY SYSTEMS*(Class 3, Cr. 3)*

A comprehensive survey of the analysis and design of safety system techniques for processes, equipment and machinery through the use of such control measures as hazard identification, risk assessment, and job safety analysis. (To enroll in this course you must have had six credit hours in safety-related courses or consent of instructor.)

OLS 454 GENDER AND DIVERSITY IN MANAGEMENT*(Class 3, Cr. 3)**Prerequisite: OLS 252*

This course will provide supervisors with the skills required for managing a diverse work force. The course will focus on helping supervisors identify and solve workplace problems arising from cultural, racial, gender, and language differences.

OLS 468 PERSONNEL LAW*(Class 3, Cr. 3)**Prerequisite: OLS 252*

A study of employment laws specially affecting employer-employee relationships. The purpose of the course is to provide the supervisor with a summary of current employee relations laws and a practical approach to dealing with daily employer-employee legal concerns. Topics include laws related to discrimination based on sex, race, age, handicap, hiring and discharge of workers, drug and alcohol testing, privacy in the workplace, wages, ERISA, and other issues on employee rights and employer responsibilities.

OLS 472 SEMINAR IN SAFETY*(Class 3, Cr. 3)**(Student will need nine hours of safety related courses prior to taking this class.)*

An examination of various topics which are relevant to the safety field. Case studies of unique and/or special safety problems, current events relating to safety, and ethics in safety are emphasized.

OLS 474 CONFERENCE LEADERSHIP TRAINING*(Class 3, Cr. 3)**Prerequisite: COM 114*

Understanding the role of the conference in the work world, with practical applications of the various techniques of conference leadership, and an understanding of group problem-solving in the conference situation.

OLS 477 CONFLICT MANAGEMENT*(Class 3, Cr. 3)**(This course requires a Junior standing or consent of the instructor.)*

A study of the alternative means of settling political and personal disputes between parties by methods generally outside the traditional court systems. Students will investigate the theoretical and practical aspects of communication, negotiation, mediation, arbitration, and other third-party strategies to reach agreements.

OLS 479 STAFFING ORGANIZATIONS*(Class 3, Cr. 3)**Prerequisite: OLS 376*

An applications-oriented study of key concepts in staffing organizations, including principle and issues in conduction job analysis; preparing job descriptions/specifications and screening/selecting employees. Special emphasis on the design, validation and operation of high-volume staffing systems.

OLS 482 LABOR ARBITRATION*(Class 3, Cr. 3)**Prerequisite: OLS 378 or consent of instructor.*

Permission of instructor if prerequisite has not been met Student will learn how to analyze disciplines and discharge cases in light of the just cause requirements. They will also be able to evaluate contract language against basic standards and legal principles. In addition, they will be able to write an arbitrator's opinion and award.

OLS 483 THE COMMON LAW OF THE WORKPLACE*(Class 3, Cr. 3)**Prerequisite: OLS 378 Note: Permission of the instructor if prerequisite has not been met.*

Statutory and individual rights are expanding significantly and supervisors must have the expertise to deal with these new workplace issues. The intent of this course will be to present cases reflecting how supervisors deal with current workplace issues.

OLS 485 LEADERSHIP TEAM DEVELOPMENT*(Class 3, Cr. 3)**Prerequisite: OLS 252 and OLS 384*

An in-depth study of self-directed work teams and team processes in the work setting with a view to understanding team functions under varying task conditions. Especially emphasized will be the leadership of teams for effective performance and maximum member satisfaction. This course deals extensively with maintenance and task behaviors of team members.

OLS 486 MANAGEMENT OF CHANGE*(Class 3, Cr. 3)**Prerequisite: OLS 252 and OLS 384*

A survey of the concepts that provide a foundation for the understanding of leadership and its relationship to the management of organizational change, with special emphasis on managing the human side of quality improvements.

OLS 491 INTERNSHIP PROGRAM*(Cr. 1 to 3) Experiential Learning*

A practicum designed to combine University study with work experience directly related to the student's plan of study. To receive credit for the internship must incorporate the concepts taught in the Organizational Leadership courses. Department approval required for Registration. Repeatable for credit. This 1-3 credit hour course may be repeated up to a total of 6 credits.

OLS 574 MANAGERIAL TRAINING AND DEVELOPMENT*(Class 3, Cr. 3)**(Student required to have Senior standing or consent of instructor.)*

Review of current managerial education and development theories and practices; discussion of fundamental social, economic, and political changes affecting business and the work of managing; implications of these changes for individual manager development and continued growth.

OLS 590 INDIVIDUAL RESEARCH PROBLEMS IN SUPERVISION AND PERSONNEL

(Class 0 to 6, Cr. 1 to 6)

Students required to have the consent of the instructor. Opportunity to study specific problems in the field of supervision and personnel under the guidance of a qualified faculty member within the department. Does not include thesis work.

Philosophy

PHIL 101 THE HISTORY OF PHILOSOPHY

(Class 3, Cr. 3)

An introduction to the problems, methods, and main traditions of philosophy through readings in Greek, medieval, modern, and contemporary philosophy.

PHIL 106 HUMAN EXPERIENCE IN ART LITERATURE, MUSIC, AND PHILOSOPHY

(Class 3, Cr. 3)

An introduction to the problems, methods, and main traditions, experiences and ideas which lie at the heart of all humanities (e.g. love, death, justice, duty, nature, beauty, and deity) using as material specimens of the visual arts, music, literature, and philosophy.

PHIL 107 FRESHMAN EXPERIENCE - ENGLISH & PHILOSOPHY

(Class 3, Cr. 3)

This course is required of all entering freshman and transfer students with less than 60 credits. This course will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline specific career exploration and critical thinking. The course also serves well as the departmental Freshman Experience since it introduces majors to the disciplines of art, music and philosophy.

PHIL 110 INTRODUCTION TO PHILOSOPHY

(Class 3, Cr. 3) TRANSFER IN

The basic problems and types of philosophy, with special emphasis upon the problem of knowledge and nature of reality.

PHIL 111 ETHICS

(Class 3, Cr. 3) TRANSFER IN

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of non-moral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment.

PHIL 120 CRITICAL THINKING

(Class 3, Cr. 3)

Course designed to develop reasoning skills and analytic abilities, based on an understanding of the rules or forms as well as the content of good reasoning. The course will cover moral, legal, and scientific reason, in addition to ordinary problem solving.

PHIL 150 PRINCIPLES OF LOGIC

(Class 3, Cr. 3)

A first course in formal deductive logic; mechanical and other procedures for distinguishing good arguments from bad. Truth tables and proofs for sentential (Boolean) connectives, followed by quantificational logic and relations. Although metatheoretic topics are treated, the emphasis is on methods. -- NOTE: Students who wish may use PHL 150 as an alternative to a Mathematics requirement when their major allows it.

PHIL 206 PHILOSOPHY OF RELIGION

(Class 3, Cr. 3) TRANSFER IN

The course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism and life after death.

PHIL 219 INTRODUCTION TO EXISTENTIALISM

(Class 3, Cr. 3)

A survey of both the philosophical and more literary writings of the existentialist movement. Readings will be chosen from among the following writers: Kierkegaard, Nietzsche, Dostoevsky, Kafka, Marcel, Heidegger, Camus, Sartre, Jaspers, de Beauvoir, Ortega, and Merleau-Ponty.

PHIL 221 PHILOSOPHY OF SCIENCE

(Class 3, Cr. 3)

An introduction to the scope and methods of science and to theories of its historical development. Topics include scientific revolutions, theories of scientific methods, the nature of scientific discovery, explanation, science, and values.

PHIL 293 SELECTED TOPICS IN PHILOSOPHY

(Class 1 to 3, Cr. 1 to 3)

The critical examination of some special topic or topics in philosophy.

PHIL 301 HISTORY OF ANCIENT PHILOSOPHY

(Class 3, Cr. 3)

A survey of Greek philosophy from its beginning in the Milesian school through Presocratics to Plato and Aristotle.

PHIL 303 HISTORY OF MODERN PHILOSOPHY

(Class 3, Cr. 3)

Concentrates on the major philosophical writers from the Renaissance to the beginning of the 19th century: Descartes, Hobbes, Spinoza, Locke, Leibnitz, Berkeley, Hume, Kant. Some in other areas, e.g. Galileo, Newton, Calvin, are also considered.

PHIL 304 NINETEENTH CENTURY PHILOSOPHY

(Class 3, Cr. 3)

A study of the significant issues raised by such nineteenth century philosophers as Fichte, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzsche, Kierkegaard, and James.

PHIL 306 TWENTIETH-CENTURY PHILOSOPHY

(Class 3, Cr. 3)

A critical examination of the main currents of contemporary philosophical thought, such as pragmatism, analytic philosophy, phenomenology and existentialism, and other recent developments. This course will cover selected works of such philosophers as Russell, Wittgenstein, Peirce, Whitehead, Heidegger, and Sartre.

PHIL 324 ETHICS FOR THE PROFESSIONS

(Class 3, Cr. 3)

A study of the ethical problems faced by professionals in engineering, management, and other professional fields. Topics include: ethical theories, moral decision-making, social responsibility, employee rights and responsibilities, the environment, truth telling, affirmative action, privacy and confidentiality, whistle-blowing, and deception.

PHIL 325 ETHICS AND PUBLIC HEALTH

(Class 3, Cr. 3)

A study of the ethical issues and problems of public health and health care. Within public health, such topics will be considered as: ethical theories; laws, codes, values, and moral decision making; the health care system; issues of the health care professional; health care professionals and patients; the sanctity of life; biomedical research and human experimentation; health policy; and allocation of resources.

PHIL 490 ADVANCED TOPICS IN PHILOSOPHY

(Class 3, Cr. 3)

An advanced study of a significant topic in philosophy.

PHIL 590 DIRECTED READING IN PHILOSOPHY

(Class 0 to 3, Cr. 1 to 3)

May be repeated for credit. Admission by consent of instructor, and must be preceded by six hours of philosophy, plus basic work in area to be investigated. A reading course directed by the instructor in whose particular field of specialization the content of the reading falls.

Physics

PHYS 107 CONCEPTUAL PHYSICS FOR HUMANITIES

(Class 2, Lab. 2, Cr. 3) TRANSFER IN

A descriptive, non-mathematical explanation of physical laws and theories, phenomena, and practical applications. Topics: mechanics, properties of matter, heat and waves.

PHYS 108 CONCEPTUAL PHYSICS FOR HUMANITIES

(Class 2, Lab. 2, Cr. 3)

A descriptive, non-mathematical explanation of physical laws and theories, phenomena and practical applications. Topics: electricity, magnetism, light, and modern physics.

PHYS 152 MECHANICS*(Class 4, Lab. 2, Cr. 4) TRANSFER IN**Prerequisite: MA 163*

Statics motion with constant acceleration, Newton's laws, circular motion, energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; hydrostatics and hydrodynamics; simple harmonic motion and wave motion.

PHYS 194 FRESHMAN PHYSICS ORIENTATION*(Class 1, Cr. 1)*

Designed to provide incoming physics majors with the academic, survival, and computational skills to make a successful transition from high school to college. Discussion of opportunities within the Department including degree options, co-op program, undergraduate research, careers in physics, use of spreadsheet software, graphing packages, and drawing programs. Attendance and performance on assigned projects are the basis of the pass/no pass requirement.

PHYS 220 GENERAL PHYSICS I*(Class 3, Lab. 2, Cr. 4) TRANSFER IN**Prerequisite: MA 148 or MA 154*

Mechanics, heat and sound, for science students not specializing in physics, chemistry, or engineering.

PHYS 221 GENERAL PHYSICS II*(Class 3, Lab. 2, Cr. 4) TRANSFER IN**Prerequisite: PHYS 220*

Electricity, light, and modern physics, for science students not specializing in physics, chemistry, or engineering.

PHYS 251 HEAT, ELECTRICITY, AND OPTICS*(Class 5, Lab. 2, Cr. 5)**Prerequisite: PHYS 152*

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, AC/DC circuits, electromagnetism, magnetic properties of matter; geometrical and physical optics.

PHYS 261 ELECTRICITY OPTICS*(Class 5, Cr. 4)**Prerequisite: PHYS 152*

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, AC/DC circuits, electromagnetism, magnetic properties of matter; geometrical and physical optics.

PHYS 270 SPECIAL TOPICS IN PHYSICS*(Class 0 to 5, Cr. 1 to 5)*

Admission by special permission. May be repeated for credit. Specialized topics in physics.

PHYS 294 SOPHOMORE PHYSICS SEMINAR*(Class 1, Cr. 1)*

Required of sophomores majoring in any physics curriculum. Discussion of undergraduate research opportunities, upper-division courses, career opportunities, laboratory safety, use of the library including physics journals and topics of current interest in physics.

PHYS 305 INTERMEDIATE MATHEMATICS PHYSICS*(Class 3, Cr. 3)**Prerequisite: PHYS 251 or PHYS 261*

An introduction and review of the mathematical techniques and procedures used in intermediate and advanced physics courses. Applications involving vector calculus, linear algebra, complex analysis, Fourier series and transforms, and second-order linear differential equations will be discussed. The course provides additional mathematical preparation for PHYS 310, 311, 322, 330, 342, and 515.

PHYS 308 SCIENTIFIC COMPUTATION*(Class 3, Cr. 3)**Prerequisite: PHYS 152*

An introduction to scientific problem solving using a computer. Students will be introduced to numerical methods for evaluating integrals and for solving algebraic and differential problems in physics.

PHYS 309 SCIENTIFIC COMPUTATION II*(Class 3, Cr. 3)**Prerequisite: PHYS 308*

A second semester course in using modern computational methods to solve physics problems numerically. PHYS 309 uses the methods developed in PHYS 308 to address problems in mechanics, electricity and magnetism and quantum physics.

PHYS 310 INTERMEDIATE MECHANICS*(Class 4, Cr. 4) Prerequisite: MA 261 and PHYS 152*

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy; elements of hydromechanics and elasticity.

PHYS 311 QUANTUM PHYSICS I*(Class 3, Cr. 3)**Prerequisite: MA 264*

This course discusses the limits of classical physics and the development of quantum physics. Topics will include: Planck's quantization hypothesis, the photoelectric effect, the wave theory of matter, the Uncertainty Principle, Bohr's atomic model, the Schrodinger equation, wave functions, the Hydrogen atom, operator methods, and the quantized simple harmonics oscillator.

PHYS 322 INTERMEDIATE OPTICS*(Class 3, Cr. 3)**Prerequisite: PHYS 251 or PHYS 261*

Modes of vibration of a system; emission and absorption of waves; properties of sound, electromagnetic, and particle waves including phenomena of refraction, reflection, dispersion, diffraction, interference, polarization and double refraction.

PHYS 330 INTERMEDIATE ELECTRICITY AND MAGNETISM*(Class 3, Cr. 3)**Prerequisite: PHYS 251 or PHYS 261 and MA 264*

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

PHYS 342 MODERN PHYSICS*(Class 3, Cr. 3)**Prerequisite: PHYS 251 or PHYS 261*

A survey of basic concepts and phenomena in atomic, nuclear, and solid state physics; special and general relativity.

PHYS 343 MODERN PHYSICS LABORATORY*(Lab. 2, Cr. 1)**Prerequisite: PHYS 342*

Laboratory experiments to accompany PHYS 342.

PHYS 380 ADVANCED PHYSICS LABORATORY*(Class 2, Lab. 2, Cr. 3)**Prerequisite: PHYS 342 and PHYS 322 and PHYS 330 and Prerequisite/Corequisite PHYS 343*

An introduction and survey of modern experimental topics in advanced physics, including areas such as: Interferometry Zeeman Effect, Compton Effect, Nuclear Magnetic Resonance Nuclear counting and half-life measurements. An introduction to data analysis will also be included.

PHYS 412 QUANTUM PHYSICS II*(Class 3, Cr. 3)**Prerequisite: PHYS 311*

A continuation of the concepts introduced in PHYS 311. including more advanced topics in modern quantum mechanics. Topics will include: Addition of angular momenta, scattering theory, identical particles, time-independent and time dependent perturbation theory, and the WKB approximation.

PHYS 469 RESEARCH IN PHYSICS*(Class 0-5; Lab 3-15, Cr 1-5) Experiential Learning**Prerequisite: Admission by special permission.*

Undergraduate research, which will qualify as an experiential learning experience. May be repeated for credit.

PHYS 470 SPECIAL TOPICS IN PHYSICS*(Class 0 to 5, Cr. 1 to 5)*

ADMISSION BY SPECIAL PERMISSION. May be repeated for credit.

PHYS 494 JUNIOR-SENIOR PHYSICS SEMINAR

(Class 1, Cr. 1)

Major emphasis on developing skills in oral and written presentations by students. The subject matter can be library material and/or accomplishments in undergraduate or co-op research.

PHYS 500 FUNDAMENTAL PHYSICS I

(Class 1, Lab. 2, Cr. 2)

A prior course in college physics or admission by consent of instructor required. A review of mechanics, wave motion, and kinetic theory, and the extensions of the laws in these domains to relativity and current investigations and applications. The course is specifically designed for teachers of science for the elementary schools.

PHYS 501 PHYSICAL SCIENCE I

(Class 3, Cr. 3)

A prior course in college Physics required. A survey of the physical sciences with emphasis on the overlap of astronomy, physics, chemistry, and geophysics. Consideration of appropriate methods of presentation and demonstration of experiments in physical science for the elementary school.

PHYS 502 PHYSICAL SCIENCE II

(Class 3, Cr. 3)

Prerequisite: PHYS 501

A continuation of PHYS 501 with emphasis on electricity, optics and modern physics.

PHYS 503 FUNDAMENTAL CONCEPTS OF PHYSICS

(Class 3, Cr. 3)

A prior course in college physics and admission by consent of instructor required. An intensive review of the principles of physical sciences in high school. Special emphasis will be placed on mechanics, kinetic theory, electric and magnetic fields, and the propagation of electromagnetic radiation.

PHYS 504 PRINCIPLES OF PHYSICS I

(Class 2, Cr. 2)

Prior college physics and mathematics through calculus required. A review of classical physics, with emphasis on the unifying principles operating in the various domains. Stress will be placed on the operational approach, the conservation principles operating in the various domains. Stress will be placed on the operational approach, the conservation principles, and the field theory law of gravitation and electromagnetism. Designed primarily for secondary school teachers.

PHYS 506 FUNDAMENTAL PHYSICS II

(Class 1, Lab. 2, Cr. 2)

Prerequisite: PHYS 500

An intensive review of electricity, magnetism and light, and an introduction to quantum phenomena and atomic and nuclear structure. The course is specifically designed for teachers of science in the secondary schools.

PHYS 510 PHYSICAL MECHANICS

(Class 3, Cr. 3)

Prerequisite: PHYS 310 and PHYS 330 and MA 262

Mechanics of particles, rigid bodies, and vibrating systems; elasticity and hydrodynamics; theory of relativity.

PHYS 515 THERMODYNAMICS

(Class 3, Cr. 3)

Prerequisite: PHYS 310 and MA 362

Fundamental concepts of heat; theory and practice of heat measurements; first and second laws of thermodynamics, with applications.

PHYS 517 STATISTICAL PHYSICS

(Class 3, Cr. 3)

Prerequisite: PHYS 342 and PHYS 510

Kinetic theory of gases third law of thermodynamics, and the principles of statistical mechanics, with applications to the quantum theory of radiation and the theory of specific heats.

PHYS 530 ELECTRICITY AND MAGNETISM

(Class 3, Cr. 3)

Prerequisite: PHYS 330

An introductory theoretical course. Vector analysis; electrostatic problems; theory of dielectrics; theory of conduction; thermoelectric and photoelectric phenomena; electromagnetic effects due to steady and changing currents; magnetic properties of matter; Maxwell's equations; radiation.

PHYS 542 SURVEY OF MODERN PHYSICS I

(Class 3, Cr. 3)

Prior general physics and calculus required. (Restricted for graduate credit to candidates in education or science teaching.) Elementary particles. Relativity. Quantum theory. Atomic spectra and X-rays. Pauli principle. Wave mechanics. Radiation and statistics.

PHYS 545 SOLID STATE PHYSICS

(Class 3, Cr. 3)

Prerequisite: PHYS 550

Crystal structure; lattice vibrations and electronic band structure of crystals; electrical, optical, and thermal properties of solids; transport and other nonequilibrium phenomena in uniform and nonuniform materials.

PHYS 549 SURVEY OF MODERN PHYSICS II

(Class 3, Cr. 3)

Prerequisite: PHYS 542

Solid state physics; nuclear particles and forces; natural and artificial radioactivity; particle accelerators; nuclear reactions; fission and fusion. Designed primarily for secondary school teachers.

PHYS 550 INTRODUCTION TO QUANTUM MECHANICS

(Class 3, Cr. 3)

Prerequisite: PHYS 310 and PHYS 330 and PHYS 342 and MA 362 or MA 510

Brief historical survey of the development of quantum mechanics; waves in classical physics, wavepackets, uncertainty principle wave functions, operators, expectation values of dynamical observables: Schrodinger equation with application to one-dimensional problems, the hydrogen atom; electron spin, periodic table; selected topics in perturbation theory, scattering theory and compounding angular momenta. Designed for students needing quantum mechanics background for specialty courses such as PHYS 545, 556, and 564.

PHYS 556 INTRODUCTORY NUCLEAR PHYSICS

(Class 3, Cr. 3)

Prerequisite: PHYS 550

Theory of relativity, brief survey of systematics of nuclei and elementary particles, structure of stable nuclei, radioactivity, interaction of nuclear radiation with matter, nuclear reactions, particle accelerators, nuclear instruments, fission, nuclear reactors.

PHYS 564 INTRODUCTION TO ELEMENTARY PARTICLE PHYSICS

(Class 3, Cr. 3)

Prerequisite: PHYS 360 or PHYS 460 and PHYS 461 or PHYS 550

This course brings the student up to the current status of research in elementary particle physics. The focus of the course is the construction of the Standard Model with emphasis on the electroweak theory. The seminal experiments that confirmed the predictions of the Standard Model is presented. The solar neutrino problem, the search for non-zero neutrino masses, and the efforts to construct a theory which unifies all interactions including gravity is discussed.

PHYS 571 SELECTED TOPICS IN PHYSICS.

(Class 3, Cr. 3)

Specialized topics in physics selected from time to time.

PHYS 590 READING AND RESEARCH

(Class 1 to 3, Lab. 1 to 4, Cr. 1 to 3)

Course details not available at present.

PHYS 600 METHODS OF THEORETICAL PHYSICS I

(Class 3, Cr. 3)

Graduate Students standing in physics or consent of instructor. Mathematical background for subsequent studies of advanced mechanics, electrodynamics, and quantum theory. Topics treated include functions of complex variable, ordinary and partial differential equations, eigenvalue problems and orthogonal functions. Green's functions, matrix theory, and tensor analysis in three and four dimensions.

PHYS 601 METHODS OF THEORETICAL PHYSICS II

(Class 3, Cr. 3)

Prerequisite: PHYS 600

A continuation of PHYS 600.

Polish

PLSH 101 POLISH LEVEL I

(Class 3, Lab. 1, Cr. 3)

Introduction to Polish.

PLSH 102 POLISH LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: PLSH 101

Continuation of PLSH 101 - Polish Level I.

PLSH 201 POLISH LEVEL III

(Class 3, Lab. 1, Cr. 3)

Prerequisite: PLSH 102

Students develop communicative competence in listening, speaking, reading and writing Polish. Completion of grammatical cases. Critical analysis of short stories, poems and selected newspaper articles. Continued emphasis on viewing and evaluating Polish Cinema.

PLSH 202 POLISH LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: PLSH 201

Students develop communicate competence in listening, speaking, reading and writing Polish. Completion of grammatical cases. Critical analysis of short stories poems, and selected newspaper articles. Continued emphasis on viewing and evaluating Polish cinema.

Political Science

POL 094 NO COURSE DESCRIPTION.

Prerequisite: POL 093

Cooperative Work Experience IV

POL 095 COOPERATIVE WORK EXPERIENCE V

Prerequisite: POL 094

POL 100 AMERICAN PUBLIC AFFAIRS

(Class 3, Cr. 3)

A survey of current public affairs in America designed to help students become conscious of the societal issues of our times.

POL 101 AMERICAN GOVERNMENT AND POLITICS

(Class 3, Cr. 3) TRANSFER IN

A study of the nature of democratic government, the U.S. Constitution, federalism, civil rights, political dynamics, the presidency, Congress, and the judiciary.

POL 104 POLITICAL PARTICIPATION

(Class 3, Cr. 3)

An introduction to the major dimensions of citizen politics in America: voting behavior, political socialization of children and adults, political opinion and culture, leadership recruitment and partisan participation.

POL 120 INTRODUCTION TO PUBLIC POLICY AND PUBLIC ADMINISTRATION

(Class 3, Cr. 3)

This course provides an introduction to the fields of public policy and public administration. Processes of policy formation and administration are examined. Different approaches to evaluating and improving public policies are discussed.

POL 122 INTRODUCTION TO POLITICAL SCIENCE

(Class 3, Cr. 3)

This course provides a general introduction to the major concepts and perspectives of political science. It presents an introductory examination of principles, organization, processes, functions of government, and the interplay of political forces. Included will be consideration of the formation of political communities, political participation, policy making, compliance, legitimacy, political development and types of political systems. Both empirical and normative problems will be addressed.

POL 130 INTRODUCTION TO INTERNATIONAL RELATIONS

(Class 3, Cr. 3) TRANSFER IN

An analysis of the fundamentals of international law, organization, and politics particularly as relevant to contemporary international relations.

POL 141 GOVERNMENTS OF THE WORLD

(Class 3, Cr. 3)

Introductory survey of major foreign governments, including the governments of a western democracy, a communist state, and a developing country, with special attention to the historical, cultural, and constitutional development, the organization and ideologies of political parties, and current political problems.

POL 190 THE POLITICS OF CHANGE

(Class 3, Cr. 3)

An introductory survey of the political forces at play in the processes of social, economic, and political change. Among topics to be considered are the politics of: the post-industrial revolution, environmental control, civil rights, the role of women in society, international cooperation and conflict. Emphasis will be placed on the political forces and processes involved in change and the resultant public policies.

POL 200 INTRODUCTION TO THE STUDY OF POLITICAL SCIENCE

(Class 3, Cr. 3) TRANSFER IN

Introduction to the basic concepts and methods of political science. Basic concepts including among others, power justice, authority, ideology, and democracy and a variety of quantitative and qualitative methods of analysis will be explored. This course is an introduction to what it means to think about and practice the discipline of political science. What kinds of things do political scientists study and how do they study them?

POL 202 INTRODUCTION TO POLITICAL THINKING

(Class 3, Cr. 3)

An introductory study of political concepts and systems of political thought from classical to modern times.

POL 221 INTRODUCTION TO SCIENCE AND GOVERNMENT

(Class 3, Cr. 3)

A survey of major policy issues associated with scientific and technological advances. Special attention is focused upon the organization of science and technology, the determination of science and policy and the role of government in support of research and development.

POL 223 INTRODUCTION TO ENVIRONMENTAL POLICY

(Class 3, Cr. 3)

This course will study decision making as modern societies attempt to cope with environmental and natural resources problems. The course focuses on the American political system, with some attention to international issues. Current policies and issues will be examined.

POL 231 INTRODUCTION TO UNITED STATES FOREIGN POLICY

(Class 3, Cr. 3)

This course is designed to introduce students to the major themes and issues in contemporary United States foreign policy. Lectures, discussions and readings will examine such areas as United States relationships with the major powers, the Third World and international organizations. Students with credit in HIST 231 - Introduction to United States Foreign Policy may not receive credit in this class.

POL 300 INTRODUCTION TO POLITICAL ANALYSIS

(Class 3, Cr. 3)

Prerequisite: POL 101

An introduction to the study of politics, its basic concepts and major areas of concern; also review of important research techniques, including methods of data collection and analysis.

POL 305 TECHNOLOGY AND SOCIETY

(Class 3, Cr. 3)

An introduction to the interaction of technology and society the impact of engineering and technological solutions, and the role of professionals. This class will focus on contemporary societal and global topics and theses such as: Environmental issues involving sustainable development, design for recycling, and other critical themes. Contemporary international issues, such as trade and trade barriers, multinational companies, and distribution of resources such as oil and minerals; and the importance of cultural, religious and socio-economic differences, values, international relations, living and working in another country, the impact of poverty and economic differences.

POL 306 THE UNITED STATES IN THE 1960'S

(Class 3, Cr. 3)

Prerequisite: POL 101 or HIST 152

Not open to students with credit in HIST 306. A description and analysis of major domestic and foreign, social, political, military and diplomatic issues confronting the United States in the 1960's and approaches and efforts to resolve these issues. The class will utilize the 1960's as laboratory to provide students with both historical and political science skills and approaches to the issues and themes of a particular period. May be taken for history or political science credit.

POL 307 VICTIMOLOGY

(Class 3, Cr. 3)

Study and analysis of institutional and other problems and issues relating to victims including the relationship between the victim and the offender, the victim and the criminal justice system and the victim and the various governmental and/or social institutions. The course will also explore how race, class and gender have impacted victims and often been a part of victimization.

POL 309 THE MIDDLE EAST

(Class 3, Cr. 3)

Prerequisite: POL 130 or HIST 104

Not open to students with credit in HIST 309. A survey beginning with the period of European involvement in the Ottoman Empire up to the present. The course includes the study of political Zionism and Arab nationalism, the role of the major powers between the two World Wars and that of the United States and the Soviet Union during the Cold War, and developments in the Middle East in the post-Cold War era.

POL 311 CONGRESS AND THE PRESIDENT

(Class 3, Cr. 3)

Prerequisite: POL 101

An analysis of policy formation which stresses the linkage between the Congress and the President, legal, behavioral, and normative approaches will be considered.

POL 312 AMERICAN POLITICAL THOUGHT

(Class 3, Cr. 3)

Prerequisite: POL 101

An analytical survey of the American contribution to Western political thought from the colonial period to the present day. The major themes and concepts of the American tradition are analyzed through study of the writings of representative thinkers, with special attention to the ideas which have affected the development of American political institutions.

POL 314 THE PRESIDENT AND POLICY PROCESS

(Class 3, Cr. 3)

Prerequisite: POL 101

A study of presidential leadership as the embodiment of social forces and as reflective of the personality of the incumbent; the president as national leader reflecting national myths and ideologies; the growth of the presidency; issues and forces affecting the continuity of presidential leadership; degree of institutionalization of the presidency.

POL 315 PUBLIC OPINION AND ELECTIONS

(Class 3, Cr. 3)

Prerequisite: POL 101 or POL 104

Contemporary public opinion, political socialization, and voting behavior in America.

POL 320 INTRODUCTION TO PUBLIC POLICY ANALYSIS

(Class 3, Cr. 3)

Prerequisite: POL 101 or POL 120

Examination of public policy analysis models and approaches and current public policy questions. The course will emphasize application of analytical methods to the examination of contemporary policy issues in the United States.

POL 330 POLITICS OF LAKE COUNTY

(Class 3, Cr. 3)

Prerequisite: POL 101

The study of Lake County politics focusing upon the selection of political leaders; the relation of the county to municipalities, townships, the state and federal government and public policy. Party officials and government office holders will be a resource for the course.

POL 333 POLITICAL MOVEMENTS

(Class 3, Cr. 3)

Prerequisite: POL 100 or POL 101

A study of political change ranging from legal reform to peaceful protest to violent revolution. Emphasis on ideologies and strategies of change relevant to consideration of contemporary political change.

POL 341 CRIMINAL INVESTIGATION

(Class 3, Cr. 3)

Prerequisite: POL 100 or POL 101 or POL 130 or POL 141 or POL 190 or POL 120 or POL 122 or POL 104,

This course is designed to develop an analytical understanding of the investigation process. It will merge theoretical and philosophical approaches to crime detection and solution. This course examines judicial efforts to define individual rights and to control enforcement conduct in the investigation and prevention of crime.

POL 343 INTRODUCTION TO THE CRIMINAL JUSTICE SYSTEM

(Class 3, Cr. 3)

Prerequisite: POL 101 and SOC 100. Not open to students with credit in SOC 343.

A study of the agencies and processes involved in the criminal justice system; legislatures, the courts, the police, the prosecutor, the public defender and corrections. An analysis of the roles and problems of each component with an emphasis on their interrelationships.

POL 346 LAW AND SOCIETY

(Class 3, Cr. 3)

Prerequisite: POL 101 and SOC 100

Nature and development of law and legal institutions in historical, comparative, and contemporary perspectives; interrelationship of law, morality, and custom; legal change and social change; and the legal profession.

POL 349 INTRO TO JEWISH STUDIES

(Class 3, Cr. 3)

Prerequisite: POL 101 or HIST 104

An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present. The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts of Judaism, such as God, Torah, People, Land, and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture.

POL 353 CURRENT POLITICAL IDEOLOGIES

(Class 3, Cr. 3)

Prerequisite: POL 101

Liberalism, conservatism, socialism, fascism, communism, and other political ideologies.

POL 354 CIVIL LIBERTIES AND THE CONSTITUTION

(Class 3, Cr. 3)

Prerequisite: POL 101

A study of the politics of civil rights and liberties in the United States focusing upon the Constitution, legislation, court decisions, and executive implementation.

POL 355 COMPUTER APPLICATIONS IN PUBLIC ADMINISTRATION

(Class 3, Cr. 3)

Prerequisite: POL 120 and POL 300

A problem solving introduction to microcomputer utilization in local, state, and federal government agencies. The course will address the role of computers in government decision-making. The history of the microcomputer's emergence in the public administration environment will be presented. In addition, the student will be introduced to customization of popular software packages to address specific problems.

POL 356 PERSONNEL MANAGEMENT IN GOVERNMENT

(Class 3, Cr. 3)

Prerequisite: POL 120

A study of the working of personnel management systems in local, state and federal agencies emphasizing recruitment, classification, compensation, and employee services.

POL 357 BUDGETING IN THE PUBLIC SECTOR

(Class 3, Cr. 3)

Prerequisite: POL 120

Study of budgetary process in public agencies emphasizing the preparation and implementation of budgets by the public agencies. Political aspects of budgeting will be considered.

POL 358 ADMINISTRATIVE LAW AND ETHICS

(Class 3, Cr. 3)

Prerequisite: POL 120

Introduction to administrative law and ethics as they relate to the working of public agencies. Ethical codes developed by the professional organization of public administrators (e.g. ASPA) will be considered.

POL 359 ADMINISTRATIVE BEHAVIOR IN PUBLIC AGENCIES

(Class 3, Cr. 3)

Prerequisite: POL 120

Study of organizational and interpersonal behavior in government agencies. Applications of behavioral theories in relation to organizational effectiveness will be emphasized.

POL 364 LAW, ETHICS, AND PUBLIC POLICY

(Class 3, Cr. 3)

Prerequisite: POL 101 or HIST 104

This course is divided into three sections. Justice as liberty examines the notion of a right to privacy. Justice as equality focuses on economic rights. Finally, Justice as community addresses the notion of duties.

POL 370 INTRODUCTION TO COMPARATIVE STATE POLITICS

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: POL 101

An introduction to the structure and process of state government, including the legal and political relationships between the state and local units of government.

POL 371 INTRODUCTION TO COMPARATIVE URBAN POLITICS

(Class 3, Cr. 3)

Prerequisite: POL 101

The politics of governing urban areas, including the selection of political leaders and citizen participation in the decision making of the central city. Special attention will be given to the integration of minorities into the political and social life of the city.

POL 372 INDIANA GOVERNMENT AND POLITICS

(Class 3, Cr. 3)

Prerequisite: POL 101

An examination of the political and governmental organization of the State of Indiana. Includes the political and historical development of Indiana state government and comparison of policies and institutions with those of other states.

POL 380 THE POLITICS OF BUREAUCRACY

(Class 3, Cr. 3)

Prerequisite: POL 101

An examination of bureaucratic organization in government. Organization theory and internal politics, foundations of bureaucratic power, and the relationship between bureaucracies and political culture, parties, pressure groups, and other structures of government.

POL 388 THE WORLD OF IDEAS I

(Class 3, Cr. 3)

Prerequisite: POL 101 or HIST 104

Not open to students with credit in HIST 388 or PHIL 388.

The first half of a two-semester chronological sequence based on reading and discussing source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society.

POL 389 THE WORLD OF IDEAS II

(Class 3, Cr. 3)

Prerequisite: POL 101 or HIST 104

Not open to students with credit in HIST 389 or PHIL 388.

The second half of a two-semester chronological sequence based on reading and discussing primary source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and Philosophy. This course is designed

to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society.

POL 390 TOPICS IN POLITICAL SCIENCE

(Class 3, Cr. 3)

Prerequisite: POL 100 or POL 104 or POL 120 or POL 130 or POL 141

May be repeated for credit. Must be Sophomore standing, have taken a 100-level political science class, or have the consent of instructor.

POL 400 PRINCIPLES OF EMPIRICAL POLITICAL ANALYSIS

(Class 3, Cr. 3)

Prerequisite: POL 300

An intermediate critical treatment of the scientific approach to the study of political behavior. Focus on the advantages and problems of analyzing political phenomena in terms of the following elements of scientific methodology: classification, measurement, generalization, verification, reliability, validity, casual inference and prediction. The importance of these elements for understanding politics will be illustrated by analyzing empirical studies drawn from various fields of political behavior.

POL 401 PRACTICUM IN LOCAL GOVERNMENT

(Class 1, Cr. 3)

Prerequisite: POL 101

Observation and supervised participation on an official community committee or board, in a political campaign, or with professional governmental staffs. Readings and class meetings to integrate theory and experience. This course requires five hours per week of field experience.

POL 404 DILEMMAS OF DEMOCRACY

(Class 3, Cr. 3)

Prerequisite: POL 101

A study of the logical, empirical and normative dilemmas in theories of democratic governance with analysis of contemporary democratic systems.

POL 405 RESEARCH SEMINAR IN PUBLIC ADMINISTRATION AND POLICY

(Class 3, Cr. 3)

Analysis of public administration policy. Student must be of senior standing in Political Science or have the consent of the instructor. A senior seminar to consider current research literature in public administration policy. Each class member will prepare a major research paper for public presentation.

POL 406 INTERNSHIP IN A PUBLIC AGENCY

(Class 3, Cr. 3)

This course requires a Senior standing in Political Science. Public agency work experience as an intern. Primarily designed for pre-service students interested in a public service career. The students will be supervised by the agency and an academic advisor. On-campus seminars for the interns will be organized.

POL 410 POLITICAL PARTIES AND POLITICS

(Class 3, Cr. 3)

This course requires the student be preceded by Junior standing or above. An analysis of the nature and function of U.S. political parties in terms of social and economic forces that shape our political parties, pressure groups, and formal governmental structures are emphasized throughout. Special attention is devoted to political leadership, nominating processes, campaign management, voting behavior, and other important aspects of American politics.

POL 411 CONGRESS: STRUCTURE AND FUNCTIONING

(Class 3, Cr. 3)

It is a prerequisite you have a Junior standing or above for this course. A study of how Congress actually operates. Formal and informal power structures within both chambers and roles of the individual members of Congress are analyzed. Attention is directed to latent as well as manifest function of legislative, investigative, and other major activities of Congress. The problem of bringing expertise to bear on the legislative process is considered throughout.

POL 428 POLITICS OF REGULATION

(Class 3, Cr. 3)

Prerequisite: POL 101 or POL 120

Politics and policies of federal and state regulatory agencies. Explanations of regulatory agency behavior, arguments for and against government regulation, and alternatives to government regulation.

POL 429 CONTEMPORARY POLITICAL PROBLEMS*(Class 3, Cr. 3)*

May be repeated for credit with a different title. Contemporary political problems in the United States affecting the interpretation of democracy, human rights and welfare, social pressures, and intergovernmental relations.

POL 433 INTERNATIONAL ORGANIZATION*(Class 3, Cr. 3)**Prerequisite: POL 130*

A study of the structure and functions of the United Nations and associated agencies with an emphasis on the role of this system in contemporary international relations.

POL 435 INTERNATIONAL LAW*(Class 3, Cr. 3)**Prerequisite: POL 130*

A study of international legal theories, principles, and practices with an emphasis on the role and utility of law in contemporary international relations.

POL 439 UNITED STATES FOREIGN POLICY MAKING*(Class 3, Cr. 3)**Prerequisite: POL 130*

An analysis of the decision-making process in United States foreign policy.

POL 442 GOVERNMENT AND POLITICS IN RUSSIA*(Class 3, Cr. 3)**Prerequisite: POL 141 or POL 303*

Analysis of Russian political culture and the Russian political tradition. History, organization, and functioning of the governmental apparatus. The role of the social organizations, interest groups, and elites. Models of the Russian political system.

POL 443 FIELD EXPERIENCE IN CRIMINAL JUSTICE.*(Class 1, Cr. 3)*

Requires consent of instructor. May be repeated once for credit as either POL 443 or SOC 443. Observation and supervised participation in the criminal justice system. Readings and class meetings to integrate theory and experience. Intended for students who plan to become employed in the criminal justice system upon receiving the bachelor's degree.

POL 454 SELECTED PROBLEMS IN MATERIALIST POLITICAL THOUGHT*(Class 3, Cr. 3)**Prerequisite: POL 101*

May be repeated for credit. Discussion and analysis of representative works and major schools of political theory which take a materialistic or naturalistic approach to the description and evaluation of political phenomena, e.g. the thoughts of Hobbes, or of Marx, or psychoanalytic theories of politics. Emphasizes textual analysis and logical structure of the works examined and considers their applicability to contemporary political life.

POL 460 JUDICIAL POLITICS*(Class 3, Cr. 3)**Prerequisite: POL 101*

A survey of judicial processes as they operate in America. Both trial courts and appellate courts will be examined in light of the procedures with which they operate. The external social, economic, and political pressures surrounding courts, and the impact courts have on society will be considered.

POL 461 CONSTITUTIONAL LAW*(Class 3, Cr. 3)**Prerequisite: POL 101*

A survey of selected areas of constitutional law, considering the political and social influences as well as the doctrinal forces which have produced these policies and interpretations.

POL 490 TOPICS IN POLITICAL SCIENCE*(Class 3, Cr. 3)**Prerequisite: POL 101*

Sophomore standing required. May be repeated for credit.

POL 490A TOPICS IN POLITICAL SCIENCE*(Class 3, Cr. 3)***POL 490B TOPICS IN POLITICAL SCIENCE.***(Class 3, Cr. 3)***POL 490G TOPICS IN POLITICAL SCIENCE.***(Class 3, Cr. 3)***POL 491 POLITICAL SCIENCE SENIOR SEMINAR.***(Class 3, Cr. 3)**Prerequisite: Senior major in Political Science or consent of instructor.*

This is a variable title seminar focusing on contemporary issues on political science at the senior level. It is part of the capstone experience for seniors in the major.

POL 522 ENERGY, POLITICS AND PUBLIC POLICY.*(Class 3, Cr. 3)*

Examination of current public policy practices and political questions concerning energy, primarily in the United States. The course will examine the main issues, actors, and policy orientations in relation to such energy sources as petroleum, electricity, and nuclear power.

POL 523 ENVIRONMENTAL POLITICS AND PUBLIC POLICY.*(Class 3, Cr. 3)*

An examination of the political problems of natural resource use and environmental problems in the United States. Particular consideration is given to the importance of resources for American society, to control the environment by the government, and to the legal aspects of public policy.

POL 562 ADMINISTRATIVE LAW AND POLICY MAKING.*(Class 3, Cr. 3)**Prerequisite: POL 101*

An examination of policy making procedures in administrative agencies as established by statute, precedent, and political considerations. Administrative agencies will be studied by means of focusing on the political context in which they must operate. Emphasis will be placed on the political realities of administrative agency operation.

POL 590 DIRECTED READING IN POLITICAL SCIENCE.*(Class 1 to 3, Lab. 0 to 3, Cr. 1 to 3)*

May be repeated for credit. A reading course directed by the instructor in whose particular field of specialization the content of the reading falls. Approval of each reading project must be secured from the department.

Psychology

PSY 120 ELEMENTARY PSYCHOLOGY*(Class 3, Cr. 3) TRANSFER IN*

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, attention, perception, learning, memory, and thinking.

PSY 203 INTRODUCTION TO RESEARCH METHODS IN PSYCHOLOGY*(Class 2, Lab. 2, Cr. 3)**Prerequisite: BHS 201 or PSY 500 or STAT 301 and MA 153*

The use of scientific methods in psychology. Lecturing covers principles of collecting and interpreting data, using examples of research from many areas of psychology. In the laboratory portion the student uses many different techniques from various areas of psychology.

PSY 205 TESTING AND MEASUREMENT*(Class 2, Lab. 2, Cr. 3)**Prerequisite: BHS 201 or PSY 500 and MA 153*

Not open to students with credit in PSY 505. Fundamental concepts of test theory, introduction to applied psychological testing, the scale of data, and the interpretation of test results.

PSY 310 SENSORY AND PERCEPTUAL PROCESSES*(Class 3, Cr. 3)**Prerequisite: PSY 203 and PSY 205*

Theory, problems, and research in sensation and perception, including physiological bases and measurement techniques.

PSY 311 HUMAN LEARNING AND MEMORY*(Class 3, Cr. 3)**Prerequisite: PSY 120*

Theory and research in verbal learning, attention, discrimination learning, thinking, conceptual and organization processes, memory, and languages.

PSY 314 INTRODUCTION TO LEARNING

(Class 3, Cr. 3)

Prerequisite: PSY 203 and PSY 205

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning examined and the implications of these theories, and the learning approach generally, for a variety of practical problems are emphasized.

PSY 322 NEUROSCIENCE OF MOTIVATED BEHAVIOR

(Class 3, Cr. 3)

Prerequisite: PSY 203 and PSY 205 PSY 222 or consent of instructor.

Neuroanatomical analyses of behavioral functions. Topics include: movement; sexual behavior, maternal behavior; hunger, thirst; emotion; pain; addiction; biological rhythms; memory; evolution of the brain; language; hemispheric specialization; brain damage; brain remodeling during development and aging; correlates of cognitive processing.

PSY 339 ADVANCED SOCIAL PSYCHOLOGY

(Class 3, Cr. 3)

Prerequisite: PSY 120

An in-depth survey of selected topics in social psychology such as aggression, attraction, social influence, social attribution, helping behavior, leadership, cooperation, competition, and attitudes and attitude change. (Not open to students with credit in SOC 340.)

PSY 344 HUMAN SEXUALITY

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: PSY 120 or SOC 100

A nonjudgmental approach to the study of sexuality through attempts to bring to students' awareness their own sexual values. Topics include evaluation of research, biological aspects, varieties of expression, inadequacies, violence, love, erotica, gender identity, aging, and sex laws. (Not open to students with credit in WOST 344)

PSY 349 PSYCHOLOGY OF WOMEN

(Class 3, Cr. 3)

Prerequisite: PSY 120

An examination of the history and sources of concepts which have defined the psychological functioning of women and a critical evaluation of current evidence regarding women and their behavior, examining the influences which affect them in contemporary society, as set within the context of the life cycle. (Not open to students with credit in WOST 349.)

PSY 350 ABNORMAL PSYCHOLOGY

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: PSY 120

Prerequisite of three hours of psychology completed. Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

PSY 355 CHILD ABUSE AND NEGLECT

(Class 3, Cr. 3)

Prerequisite: PSY 120

A historical and conceptual overview of violence against children, from infancy through adolescence, is presented. Definitions and models of violence are evaluated with respect to existing research findings. Assessment techniques, treatment (intervention) approaches and legal issues are examined. The major forms of violence against children to be emphasized include: physical child abuse, sexual child abuse, emotional (psychological) child abuse, child neglect and failure-to-thrive infants.

PSY 361 HUMAN DEVELOPMENT I: INFANCY AND CHILDHOOD

(Class 3, Cr. 3)

Prerequisite: PSY 120

A consideration of the formative years in human development with primary attention given to the processes of socialization, individualization, and adaptation, initiated by retrospective self-examination and furthered by an analysis of systematic life history data.

PSY 362 HUMAN DEVELOPMENT II: ADOLESCENCE

(Class 3, Cr. 3)

Prerequisite: PSY 361 or EDPS 220

A behavioristically-oriented analysis of social, personality, and cognitive development in adolescence and youth.

PSY 363 HUMAN DEVELOPMENT III: ADULTHOOD

(Class 3, Cr. 3)

Prerequisite: PSY 362

An analysis of growth trends in adulthood as arising from the experiences of childhood and adolescence and as manifesting themselves in the performance of a variety of adult roles. The realization of maturity, as seen in self assessment and examination of systematic life history data. The prospects for later adulthood: involvement versus disengagement.

PSY 370 ENVIRONMENTAL PSYCHOLOGY

(Class 3, Cr. 3)

The psychological influence of immediate environment on human, and, to a lesser extent, animal behavior. Environmental factors will be considered from the viewpoints of social psychology, applied experimental psychology, consumer psychology, community psychology, and ethology.

PSY 373 PSYCHOLOGY IN INDUSTRY

(Class 3, Cr. 3)

Prerequisite: PSY 120

Survey of applications of psychological principles and research methods to personnel selection, training, and appraisal; societal context of work including study of work motivation, satisfaction and alienation, small group dynamics, and leadership. (Not open to students with credit in PSY 570.)

PSY 374 ORGANIZATION AND BEHAVIOR

(Class 3, Cr. 3)

Prerequisite: PSY 120

Not open to students with credit for PSY 572. Survey of basic behavioral science research and thought on organizational behavior as evidenced in individual group, intergroup, and societal phenomena. The reciprocal relationship between individual work behavior and institutional factors are stressed and analytically reviewed.

PSY 386 CONSUMER BEHAVIOR

(Class 3, Cr. 3)

Prerequisite: PSY 120

Basic concepts and methods of psychology as used to understand consumer behavior. Course covers general concepts (e.g. personality, information-processing, social class, family decision-making) as well as their applications to specific examples of consumer behavior (e.g. information search, product choice, purchase).

PSY 420 INTRODUCTION TO PERSONALITY THEORY

(Class 3, Cr. 3)

Prerequisite: PSY 120

Prerequisite a prior three credit hour psychology course. Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists surveyed included Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Boss, Binswanger, and Kelly. Skinner, Bandura, Rogers, Boss, Binswanger, and Kelly.

PSY 428 DRUGS AND BEHAVIOR

(Class 3, Cr. 3)

Prerequisite of six credits of psychology.

Discussion on the variety of drugs which affect the nervous system and behavior. Emphasis will be upon a discussion of the physiological and pharmacological bases for the use and misuse of drugs in our society.

PSY 430 SYSTEMS AND THEORIES OF PSYCHOLOGY

(Class 3, Cr. 3)

Prerequisite: PSY 310 and PSY 314 or PSY 322

A review of major systems of thought and theories contributing to current developments in psychology. Special emphasis placed on broad approaches to building an understanding of man, both scientific and humanistic including behaviorism, psychoanalysis and humanistic-cognitive approaches.

PSY 433 THEORIES OF HUMAN DEVELOPMENT

(Class 3, Cr. 3)

Prerequisite: PSY 120 and BHS 205 and PSY 361 or CDFS 210 and BHS 205 Six credit hours of psychology required. (Not open to students with credit in PSY 343.)

A survey of current major issues of developmental psychology and relevant and evolving methodological approaches to these problems. The emphasis is on developmental processes and factors affecting these processes.

PSY 435 INTRODUCTION TO MARRIAGE AND FAMILY THERAPY

(Class 3, Cr. 3)

Prerequisite: PSY 120

This course provides the student with an introduction of general systems theory with a special emphasis on applications within marriage and family therapy. Course topics include the historical roots of family therapy, descriptions of treatment modalities and clinical interventions used by marriage and family therapists. A variety of theoretical approaches to marriage and family therapy are explored.

PSY 443 AGGRESSION AND VIOLENCE

(Class 3, Cr. 3)

This course requires the consent of the instructor. An intensive examination of the nature of human aggression. Among the topics covered will be: (1) theoretical perspectives concerning such behavior; (2) social conditions that encourage its performance; and (3) means for its prevention and control.

PSY 480 FIELD EXPERIENCE IN PSYCHOLOGY

(Class 1, Cr. 3)

Prerequisite: the consent of the instructor and with consent may be repeated once for credit.

Supervised volunteer field work experiences in a setting appropriate to students' interest and goals. Intended as an opportunity to integrate theory and practice.

PSY 491 TOPICS IN PSYCHOLOGY

(Cr. 1 to 6)

Variable titles.

PSY 498 SENIOR RESEARCH

(Class 3, Cr. 3)

Senior standing and psychology major Student conducts and writes a report on an individual research project under the guidance of a faculty member.

PSY 500 STATISTICAL METHODS APPLIED TO PSYCHOLOGY, EDUCATION AND SOCIOLOGY

(Class 3, Cr. 3)

(Not open to students with credit in BHS 201)

Descriptive statistics and an introduction to sampling statistics. Applied to psychological, sociological, and educational data.

PSY 505 MENTAL MEASUREMENT

(Class 2, Lab. 2, Cr. 3 or Class 3, Lab. 2, Cr. 3)

A prerequisite of six hours of psychology including PSY 500 or equivalent.

Introduction to the general area of mental measurement. Theory and content of measuring devices in the field of intelligence, interests, personality, and special aptitudes.

PSY 523 INTRODUCTION TO THEORIES OF PSYCHOTHERAPY

(Class 3, Cr. 3)

Prerequisite of an introductory course in theory of personality advisable, especially for undergraduates. (e.g., PSY 420)

A survey of the major approaches to psychotherapy, including their theory of illness and cure. Three traditions are represented: psychoanalytical (e.g. Freud, Adler, Jung), behavioral (e.g. Miller and Dollard, Wolpe, Stampfl), and cognitive-phenomenological (e.g. Rogers, Kelly, Perls).

PSY 532 PSYCHOLOGICAL DISORDERS OF CHILDHOOD

(Class 3, Cr. 3)

A prerequisite of six credit hours of psychology.

A review of the nature, causes and consequences of deviations from normal childhood development. Emphasis is placed on the two most common types of psychological problems in childhood: mental retardation and behavior disorders.

PSY 535 PSYCHOLOGY OF DEATH AND DYING

(Class 3, Cr. 3)

An examination of psychological research and theory related to death and the dying process. Topics include: (1) death concepts, attitudes and fears—historical and contemporary, (2) definitions and predictors of death (physical, psycho-social predictors of death), effects of death on survivors, psycho-social factors related to individual differences and normative dying behavior, stages of dying, effects of pain and drugs, managing the dying process.

PSY 550 INTRODUCTION TO CLINICAL PSYCHOLOGY

(Class 3, Cr. 3)

The case-study method, including a discussion of the importance of historical information, the contribution of clinical tests to diagnosis, and a general survey of prevention and treatment techniques.

PSY 570 INDUSTRIAL PSYCHOLOGY

(Class 3, Cr. 3)

Not open to students with credit in PSY 373.

Survey of the applications of psychological principles and of research methodology to the various human problems in industry, such as personnel selection and appraisal, the organizational and social context of human work, the job and work situation, human errors and accidents, and psychological aspects of consumer behavior.

PSY 590 INDIVIDUAL RESEARCH PROBLEM

(Class 0 to 3, Lab. 0 to 7, Cr. 1 to 3)

Individual Research Problem consent of the instructor. Opportunity for students to study particular problems in any field of psychology or initiate themselves into research techniques under the guidance of a member of the staff.

PSY 600 STATISTICAL INFERENCE

(Class 3, Cr. 3)

Prerequisite: PSY 500

Emphasis is given to principles underlying both parametric and nonparametric inference.

PSY 605 APPLIED MULTIVARIATE ANALYSIS

(Class 3, Cr. 3)

A survey of the most frequently employed multivariate research techniques, such as multivariate generalizations of univariate tests and analysis of variance, principal components, canonical analysis, and discriminant analysis. A central theme of the course is the general linear model, both univariate and multivariate. A multipurpose program for this model provides the student with practical experience in conducting multivariate research.

PSY 673 BEHAVIORAL DISORDERS

(Class 3, Cr. 3)

Advanced abnormal psychology. Consideration will be given to research and theory of psychopathology.

Portuguese

PTGS 101 PORTUGUESE LEVEL I

(Class 3, Lab. 1, Cr. 3)

This course stands for an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

PTGS 102 PORTUGUESE 102. LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: PTGS 101

This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community

Russian

RUSS 101 RUSSIAN LEVEL I

(Class 4, Cr. 4)

Introduction to basic skills in the languages.

RUSS 102 RUSSIAN LEVEL II

(Class 4, Cr. 4)

Prerequisite: RUSS 101

Continuation of Russian 101. Prerequisite: Russian 101

Science

SCI 103 SURVEY OF THE BIOLOGICAL WORLD

(Class 2, Lab. 2, Cr. 3) TRANSFER IN

This laboratory science course is designed for non-biology majors to satisfy the general education science requirement. Topics in this course include history of planet earth, evolution and natural history of living organisms. This course cannot be used for biology elective credits by biology majors.

Home Department: Department of Biological Sciences

SCI 104 INTRODUCTION TO ENVIRONMENTAL BIOLOGY

(Class 2, Lab. 2, Cr. 3)

A survey of human impacts on natural environments. This course assumes very little prior knowledge in ecology, and thus serves for non-biology major students who wish to satisfy their lab science requirements. Topics include basic concepts of ecology, interactions between human and natural environment, human wellness in relation to environmental pollution, natural resource conservation and management, modern environment technology, and current environmental issues in our society. Lecture material is reinforced and expanded upon in laboratory exercises and field trips in ecology, environmental health, pollution and resource conservation. This course will not count toward a biology degree.

Home Department: Department of Biological Sciences

SCI 105 INVITATION TO HUMAN BIOLOGY

(Class 2, Lab. 2, Cr. 3) TRANSFER IN

This course assumes very little prior specific knowledge of biology, and thus serves for non-biology students who wish to satisfy their lab science requirements.

Topics include basic structure and function of the structure of the human body, human genetics, human wellness issues, human evolution, and human impact on the environment. Lecture material is reinforced and expanded upon in laboratory exercises. This course will not count toward a biology degree.

Home Department: Department of Biological Sciences

SCI 112 INTRODUCTION TO THE PHYSICAL SCIENCES I

(Class 2, Lab. 2, Cr. 3)

An introduction to science and the scientific method as evidenced by the physical and chemical aspects of nature. Physical and chemical concepts and processes will be studied in the context of everyday life. General topics will include: motion, energy, heat, electromagnetism, atoms and molecules.

Home Department: Department of Chemistry and Physics

SCI 113 INTRODUCTION TO THE PHYSICAL SCIENCES II

(Class 2, Lab. 2, Cr. 3)

An introduction to science and the scientific method as evidenced by the physical and geological aspects of nature. General topics will include: Planetary geology, the Solar system, astronomy, cosmology, and some aspects of modern physics.

Home Department: Department of Chemistry and Physics

SCI 114 INTRODUCTION TO LIFE SCIENCE

(Class 2, Lab. 2, Cr. 3)

An introduction to life science for non-biology majors. This inquiry-based course will take an investigative approach to various topics in biology that are related to everyday life. Topics include evolution and life history of animals and plants, cells, human health, biotechnology and ecology. Although offered primarily for elementary education majors, this course is open to all qualified students. This course cannot be counted as a biology elective credits for a biology degree.

Home Department: Department of Biological Sciences

SCI 115 ENVIRONMENTAL SCIENCE FOR ELEMENTARY EDUCATION

(Class 2, Lab. 2, Cr. 3)

Prerequisite: SCI 112 and SCI 113 and SCI 114

This project-based course integrates knowledge and skills in physical and biological sciences to develop workable scientific solutions for environmental-related problems in everyday life. Topics may include, but are not limited to, pollution prevention and control, natural resource conservation and management, human health and wellness. Although offered primarily for elementary education majors, this course is open to all qualified students. This course cannot be counted as biology elective credits for a biology degree.

Home Department: Department of Biological Sciences

SCI 131 SCIENCE AND ENVIRONMENTAL ISSUES

(Class 2, Lab. 2, Cr. 3)

An introduction to the application of chemical principles to the world around us (our environment). It may be used to satisfy the general education laboratory science requirement and serve as an introductory course for further study in the field of environmental science.

Home Department: Department of Chemistry and Physics

SCI 140 INTRODUCTION TO FORENSIC SCIENCE

(Class 2, Lab. 2, Cr. 3)

Introduction to the theories and practices of scientific techniques as applies to crime detection. Some focus areas will include crime scene processing, physical evidence, the examination and evaluation of evidence, and laboratory procedure.

Home Department: Department of Chemistry and Physics

SCI 150 BREWING SCIENCE

(Class 2, Lab. 2, Cr. 3)

Following the brewing process from 'grain-to-glass' this course uses the biological and chemical principles of brewing to teach science to the non-science major. While based solely on malted barley, water, hops and yeast, beer and the brewing process provide a wealth of examples of basic science. In addition to these basic ingredients, scientific discussions on malting, mashing, fermentation and the making of different beer styles will also be included. In the laboratory, students will gain hands-on experience with important aspects of the brewing process. An emphasis on the responsibility we must take for our behavior when consuming beer will be stressed. Students must be 21 years of age before the start of the semester.

Home Department: Department of Chemistry and Physics

SCI 190 SPECIAL TOPICS IN SCIENCE

(Class 2, Lab. 2, Cr. 3)

Prerequisite: MA 041

A special topics course in physical science for non-science majors. Prerequisite: High School Algebra, MA 041 or equivalent.

Home Department: Department of Chemistry and Physics

SCI 220 HEALTH & SAFETY

(Class 2, Cr. 2)

Prerequisite: CHM 116 Prerequisite: CHM 116 or equivalent

A course on laboratory safety, health related issues and laboratory stockroom management in the physical sciences for science education majors.

Home Department: Department of Chemistry and Physics

SCI 324 PHYSICAL SCIENCE & SOCIETY

(Class 3, Cr. 3)

One year of organic chemistry and one year of college physics required. This course focuses on the chemicals, chemical and physical principles and phenomena of environmental consequence. Societal issues are incorporated largely in historical relevance. Topics include ozone depletion, greenhouse effect, air pollution, water pollution, acid rain, toxics, energy flow, and environmental technology.

Home Department: Department of Chemistry and Physics

Service Learning

SERV 101 SERVICE LEARNING/CIVIC ENGAGEMENT - LEVEL I

(Class 1, Cr. 1) Experiential Learning

Experience at the entry level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of five hours per week (75 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 102 SERVICE LEARNING/CIVIC ENGAGEMENT - LEVEL II

(Class 2, Cr. 2) Experiential Learning

Experience at the intermediate level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of ten hours per week (150 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 103 SERVICE LEARNING/CIVIC ENGAGEMENT - LEVEL III

(Class 3, Cr. 3) Experiential Learning

Experience at the advanced level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 15 hours per week (225 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 201 SERVICE LEARNING/CIVIC ENGAGEMENT II

(Class 2, Cr. 2) *Experiential Learning*

Prerequisite: SERV 101 or SERV 102 or SERV 103

Experience at the mid-level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 10 hours per week (150 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 301 SERVICE LEARNING/CIVIC ENGAGEMENT III

(Class 3, Cr. 3) *Experiential Learning*

Prerequisite: SERV 201

Experience at the advanced level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 15 hours per week (225 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

SERV 401 SERVICE LEARNING/CIVIC LEARNING IV

(Class 4, Cr. 4)

Prerequisite: SERV 301 Experiential Learning

Experience at the mastery level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 20 hours per week (300 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community.

Sociology

SOC 100 INTRODUCTION TO SOCIOLOGY

(Class 3, Cr. 3) *TRANSFER IN*

A survey course designed to introduce the student to the science of human society. Fundamental concepts, description, and analysis of society, culture, the socialization process, social institutions, and social change. A first course for sociology majors and a possible terminal course for non-majors.

SOC 220 SOCIAL PROBLEMS

(Class 3, Cr. 3) *TRANSFER IN*

Prerequisite: SOC 100

Contemporary problems at the community, society, and international levels, focusing on patterns of social organization and social change in American society, with concentration on such topics as technological militarism and war, poverty, racism, political protest, and cybernation.

SOC 245 FIELD OF SOCIOLOGY

(Class 1, Cr. 1)

Prerequisite: SOC 100

Examination of educational and career opportunities in the field of Sociology. Major theoretical and research approaches are briefly presented to assist student preparation for subsequent courses and options in Sociology. The application process and experience of post-graduate education are reviewed.

SOC 261 BASIC HELPING SKILLS FOR HUMAN SERVICES

(Class 3, Cr. 3) *TRANSFER IN*

Prerequisite: SOC 100

Not open to students with credit in SWRK261.

Provides a basic overview of the profession of social work: its development as a profession, professional values and ethics, and the multiple settings in which social work is practiced. Instruction is given in the types of social work; i.e., the generic complex which results in individual casework, group work, community practice, administration, and policy. Methods of social work are described, along with the current frameworks for social work practice, including systems and problem solving.

SOC 301 SOCIOLOGY OF INTERNATIONAL CHANGE

(Class 3, Cr. 3)

Prerequisite: SOC 100

Analysis of recent international developments from the sociological perspec-

tive. Topics include such issues as ethnic conflicts, trade wars, population growth, technological changes, environmental issues, famine, the collapse of the USSR, and the formation of new political/ economic rivalries.

SOC 306 METHODS IN HUMAN SERVICES

(Class 3, Cr. 3)

Prerequisite: SOC 100

The class will focus on case management techniques that will be used in format systems such as welfare programs, health care and mental health agencies, child care programs, agencies serving the elderly and the corrections industry. Emphasis will be placed on multidimensional assessment techniques, information and referral services and the skills necessary to act as a change agent, educator and facilitator. Other essential elements of the course include crisis intervention, the dynamics involved in family systems, health promotion, and the needs of special populations.

SOC 307 FIELD EXPERIENCE IN HUMAN SERVICES

(Class 1, Cr. 3)

Prerequisite: SOC 261

The field experience component of the Human Services curriculum provides a supervised learning experience in a professional practice setting. The participants in the field practicum include the student, faculty and agency supervisor. This will give students the opportunity to integrate carefully selected and approved individualized experiences as they actively engage in professional tasks which complement and reinforce classroom learning. The seminar that accompanies the course will provide opportunities for student peer relationships and for the development of beginning competencies as students learn to use supervision and focus on specific practice areas. The course will place particular emphasis on the needs of each student.

SOC 314 RACE AND ETHNIC RELATIONS

(Class 3, Cr. 3)

Prerequisite: SOC 100

Not open to students with credit in SOC 514.

An examination of the social, psychological, political, economic, and cultural factors that influence society's treatment of members of various racial and ethnic groups, and those factors that influence the ways those factors that influence the ways those groups interact with each other.

SOC 318 SOCIOLOGY OF SPORT

(Class 3, Cr. 3)

This course provides a sociological understanding of the institution of sports. It particularly investigates the role of politics, the economy, and the media in the creation of sports as an institution. The variables of race, class and gender are emphasized, as are the links between sports and basic American values.

SOC 320 GENERAL SOCIAL ORGANIZATION

(Class 3, Cr. 3)

Prerequisite: SOC 100

The study of selected areas of social organization. Institutions as special forms of organizations and bureaucracies. Theories and empirical studies of power and decision making in organizations. Case studies of American organizations and institutions.

SOC 325 SOCIAL FORCES AND SOCIAL MOVEMENTS

(Class 3, Cr. 3)

Prerequisite: SOC 100

Examines the social, political, economic, and social psychological conditions that give rise to social movements, the ideological perspectives of major social movements, and the inter-relationships between social movement and social change.

SOC 330 CULTURE, ARTS, SOCIETY

(Class 3, Cr. 3)

Prerequisite: SOC 100

The relations of the arts to society; the production, diffusion, institutionalization, democratization of the arts, with attention to the consequences of diverse media structures organization, marketing, and support structures. Emphasis will be placed on related emerging social roles, the connection between art and politics, elite versus mass arts, and the arts and cultural values.

SOC 334 URBAN SOCIOLOGY

(Class 3, Cr. 3)

Prerequisite: SOC 100

Development of the city and its functions: types of social behavior in cities; influences of city life on personality; city planning.

SOC 340 GENERAL SOCIAL PSYCHOLOGY

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: SOC 100 or PSY 120

Not open to students with credit in PSY 339. Social influences on the individual and processes of social interaction. Individual attitudes and behavior as related to socialization, social norms, social roles, communication and propaganda, and other social influences. Among the interaction processes considered are interpersonal attraction, influence, leadership, cooperation, and conflict.

SOC 343 INTRODUCTION TO THE CRIMINAL JUSTICE SYSTEM

(Class 3, Cr. 3) TRANSFER IN

Prerequisite: POL 101 and SOC 100

Not open to students with credit in POL 343.

A study of the agencies and processes involved in the criminal justice system: legislature, the courts, the police, the prosecutor, the public defender, and corrections. An analysis of the roles and problems of each component with an emphasis on their inter-relationship.

SOC 350 SOCIAL PSYCHOLOGY OF MARRIAGE

(Class 3, Cr. 3)

Prerequisite: SOC 100

Not open to students who have had CDFS 350 or WOST 350. Designed to provide an understanding of contemporary courtship, marriage, and family interactions cultural, social, and social-psychological phenomena. Consideration of the major sources of marital strain, and conflict within a heterogeneous, rapidly changing society.

SOC 361 THE INSTITUTION OF SOCIAL WELFARE

(Class 3, Cr. 3)

Prerequisite: SOC 100

Not open to students with credit in SWRK 361. Basic concepts and activities of social service organizations. Field trips to selected institutions.

SOC 364 CHILD AND FAMILY WELFARE

(Class 3, Cr. 3)

Prerequisite: SOC 261 and PSY 361 and PSY 362

Not open to students with credit in SWRK 364.

A review of the family as it is influenced by societal and personal forces. The impact of culture, society, and economics on the family is reviewed; additionally, the personal and interpersonal factors including family crises, breakdowns, unemployment, and alcoholism are considered.

SOC 367 RELIGION IN AMERICA

(Class 3, Cr. 3)

Prerequisite: SOC 100

Examines the social dimensions of religion in American life; religion in American culture, social profiles of America's religious groups, trends in individual religious commitment; and religion's impact on American life.

SOC 382 INTRODUCTION TO METHODS OF SOCIAL RESEARCH

(Class 3, Cr. 3)

Prerequisite: SOC 100

Introduction to the basic techniques of statistical analysis applicable to sociological data. Elementary descriptive statistics and statistical inference. Introduction to multivariate analysis.

SOC 383 INTRODUCTION TO METHODS OF SOCIAL RESEARCH II

(Class 3, Cr. 3)

Prerequisite: BHS 201 or SOC 382

Introduction to the methods of data collection and to the use of the scientific method in social research. Formulation of hypotheses and research designs for their testing. Elementary principles for the conduct of experiments, observation, and interviewing, documentation; content analysis; and surveys. Relationship between social research and social theory.

SOC 402 PRINCIPLES OF SOCIOLOGY

(Class 3, Cr. 3)

Prerequisite: SOC 100 12 hours of Sociology and 2.25 GPA in all Sociology courses.

An advanced critical treatment of the theories, concepts, undergraduate majors in sociology.

SOC 411 SOCIAL STRATIFICATION

(Class 3, Cr. 3)

Prerequisite: SOC 100

Examination of systems of class and caste, with special attention to the United States; status, occupation, income, and other elements in stratification.

SOC 412 SOCIAL CHANGE

(Class 3, Cr. 3)

Prerequisite: SOC 100

The study of social change in premodern and modern societies. The following topics will be included: theories of social change, current patterns of social change in the developing and industrial worlds, changes in socialization patterns, interpersonal relations, social institutions, the impact of social change, the desirability of growth and development and the dilemmas of modernization.

SOC 416 INDUSTRIAL SOCIOLOGY

(Class 3, Cr. 3)

Prerequisite: SOC 100

Provides an overview of the historical development of industrial organizations from craft production through the factory to multinational corporations. Examines changes in managerial practices and ideologies and workers' reactions. Explores other institutions (including government, schools, mass media) affecting industrial development.

SOC 421 JUVENILE DELINQUENCY

(Class 3, Cr. 3)

Prerequisite: SOC 100

A study of social and psychological factors influencing individual delinquent behavior patterns. Emphasis on preventive and rehabilitative programs and the role of community agencies, such as social service agencies, juvenile courts, youth authorities. Visits to selected organizations and institutions.

SOC 422 CRIMINOLOGY

(Class 3, Cr. 3)

Prerequisite: SOC 100

Nature and cause of crime; methods of dealing with adult and juvenile offenders; consideration of present programs for the social treatment of crime in the light of needed changes.

SOC 430 SOCIOLOGY OF AGING

(Class 3, Cr. 3)

Prerequisite: SOC 100

Examination of the theories of aging, problems confronting older persons, and programs designed to assist the elderly. Consideration of social aspects of aging in the U.S. in the areas of retirement, employment, housing, income, health care, and the family relationships with cross-cultural and a historical comparisons.

SOC 431 SERVICES FOR THE AGED

(Class 3, Cr. 3)

Prerequisite: SOC 430 or PSY 363

This course describes current and alternative models for providing community and institutional-based services for the aged. Intervention theories and strategies for providing human services are discussed. Students are expected to apply course concepts when developing ideas for and evaluating existing services for older people.

SOC 440 SOCIOLOGY OF HEALTH AND ILLNESS

(Class 3, Cr. 3)

Prerequisite: SOC 100

Examination of the social aspects of health beliefs, the definition of disease, and decisions regarding the seeking of medical care. Identification of major changes in patterns and frequencies of health, sickness, disease, and death in the 20th century and factors influencing these patterns. Analysis of characteristics of U.S. medical care systems with particular emphasis on the economics and ethics of health care delivery, the production and distribution of medical personnel, and comparisons with other systems.

SOC 443 FIELD EXPERIENCE IN CRIMINAL JUSTICE

(Class 1, Cr. 3)

GPA of 2.25 or higher; 9 credit hours in Criminal Justice.

Observation and supervised participation in the criminal justice system. Readings and class meetings to integrate theory and experience. Intended for students who plan to become employed in the criminal justice system upon receiving the bachelor's degree.

SOC 450 GENDER ROLES IN MODERN SOCIETY

(Class 3, Cr. 3)

Prerequisite: SOC 100

This course is not open to students with credit in WOST450. A critical examination of the roles of men and women in many societies with particular attention to sex/gender differences and inequalities in the contemporary United States. Origins, goals and tactics of the recent women's and men's liberation movements. Sex differences and inequality in the area of sexuality, marriage, family, education, employment, and income. Social factors which maintain and those which may minimize sex and inequality. Prerequisite: 6 credit hours of Sociology.

SOC 453 INTIMATE VIOLENCE

(Class 3, Cr. 3)

Prerequisite: SOC 100

This course examines violence between intimates across the life span starting with child abuse and ending with abuse against the elderly. The perspectives used include social learning theory, gender role socialization and sociocultural values. Current research as well as emerging themes about the transmission of violence, learned behavior, and victimization will be used in this class. Assessment techniques are a major part of the class. Prerequisite: Soc 100

SOC 460 FIELD EXPERIENCE IN GERONTOLOGY

(Class 1, Cr. 3)

Prerequisite: SOC 430

Supervised volunteer field experience in a gerontological setting. Intended as an opportunity for practical experience in an organization providing services to older adults, where theoretical concepts can be applied with skills and techniques for dealing with older adults can be developed.

SOC 491 TOPICS IN SOCIOLOGY

(Cr. 1 to 6)

Variable titles.

SOC 514 RACIAL AND CULTURAL MINORITIES

(Class 3, Cr. 3)

Prerequisite: SOC 100

America's minority groups; immigration; interracial and intercultural conflicts; assimilation.

SOC 525 SOCIAL MOVEMENTS

(Class 3, Cr. 3)

Prerequisite: SOC 100

Origins and developmental stages of revolutionary and reform movements and communitarian societies; relation between social structure and political attitudes; personality needs and affinity for social and political ideologies.

SOC 530 POLITICAL SOCIOLOGY

(Class 3, Cr. 3)

Prerequisite: SOC 100

Analysis of the social and social psychological sources of routine political participation such as voting and interest group activity and non-routine political action such as protest movements and revolution; the organization of power at the community, national and international level; and political ideology.

SOC 531 COMMUNITY ORGANIZATION

(Class 3, Cr. 3)

Prerequisite: SOC 100

Analysis of the local community in terms of its institutional structure, relationships among institutions, political and economic power relationships, and the role of voluntary organizations and interest groups.

SOC 550 GENDER IDENTITY AND SEX ROLE DIFFERENTIATION

(Class 3, Cr. 3)

Prerequisite: SOC 350 or SOC 450

Psychosexual differentiation, both prenatal and postnatal; normal and deviant processes involved in establishing gender identity and in functioning within a sex

role setting. Some attention to hermaphroditism, transsexualism, and homosexuality. The masculinity-femininity dimension of personality; sex role structures and sex role learning within a societal context. A companion course to SOC 450.

SOC 570 SOCIOLOGY OF EDUCATION

(Class 3, Cr. 3)

Prerequisite: SOC 100

Analysis of the American public school as a social organization. Includes: inter-relationships among community power structure, social stratification, and the school; the roles of superintendent, principal, and teacher in community and school; the classroom as a social system; student culture; and teaching as a profession.

SOC 590 INDIVIDUAL RESEARCH PROBLEMS

(Cr. 1 to 3)

This course requires consent of the instructor.

(May be repeated for credit.) Individual research or reading in an area of sociology under a sociology department staff member. Does not include thesis work.

SOC 591 SELECTED TOPICS IN SOCIOLOGY

(Cr. 1 to 3)

Prerequisite: SOC 100

May be repeated for a maximum of six credit hours.

Spanish

SPAN 101 SPANISH LEVEL I

(Class 3, Lab. 1, Cr. 3) TRANSFER IN

Introduction to Spanish.

SPAN 102 SPANISH LEVEL II

(Class 3, Lab. 1, Cr. 3) TRANSFER IN

Prerequisite: SPAN 101

Continuation of SPAN 101.

SPAN 106 SPANISH FOR BUSINESS I

(Class 3, Lab. 1, Cr. 3)

A Spanish for Special Purposes course. Realistic situations and specialized vocabulary that business and finance professionals need to communicate in the course of daily work. Opportunities to apply grammatical structures in a variety of practical contexts. Highlights on Hispanic customs and practices relevant to business professionals in their interactions with Spanish speakers.

SPAN 107 SPANISH FOR BUSINESS II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: SPAN 106

A Spanish for Special Purposes course. A continuation of SPAN 106. Realistic situations and additional specialized vocabulary that business and finance professionals need to communicate in the course of daily work. Further opportunities to apply grammatical structures in a variety of practical contexts. Highlight on more Hispanic customs and practices relevant to business professionals in their interactions with Spanish speakers.

SPAN 110 SPANISH FOR HEALTH CARE PROVIDERS

(Class 3, Cr. 3)

A Spanish for Special Purposes course. Basic terminology for health care professionals. Practice in Spanish communication in assessment and intervention settings with patients/families. General medical history, and symptoms are covered as well as special individual topics. Practice in language skill development in health history interviews.

SPAN 190 SPECIAL TOPICS IN SPANISH

(Class 0 to 3, Lab. 0 to 6, Cr. 1 to 3)

Special topics related to Spanish and to Spanish-speaking cultures and literatures. Variable title. This course may be repeated for credit, providing the topics are different.

SPAN 201 SPANISH LEVEL III

(Class 3, Lab. 1, Cr. 3) TRANSFER IN; Experiential Learning*

Prerequisite: SPAN 102

A conversational approach to the cultures of Spain and South America with a review of Spanish language skills as needed. *Note: Only sections taken abroad meet the experiential learning requirement

SPAN 202 SPANISH LEVEL IV

(Class 3, Lab. 1, Cr. 3) TRANSFER IN; Experiential Learning*

Prerequisite: SPAN 201

Continuation of SPAN 201 and the presentation of intellectual readings. *Note: Only sections taken abroad meet the experiential learning requirement

SPAN 206 PRACTICUM IN SPANISH

(Class 1 to 3, Cr. 1 to 3)

Directed practice in Spanish in settings that offer contact with the Hispanic community.

SPAN 230 CONTEMPORARY SPANISH AMERICAN LITERATURE IN TRANSLATION

(Class 3, Cr. 3)

Reading and discussion of selected masterpieces of 20th century Latin American prose fiction and essays in translation. Emphasis on works written after World War II. Knowledge of Spanish not required.

SPAN 261 SPANISH COMPOSITION

(Class 3, Cr. 3)

Prerequisite: SPAN 202

The essentials of Spanish grammar as applied in composition.

SPAN 290 SPECIAL TOPICS IN SPANISH

(Class 0 to 3, Lab. 0 to 6, Cr. 1 to 3)

Special topics related to Spanish and Spanish-speaking cultures and literatures. Variable title. This course may be repeated for credit, providing topics are different.

SPAN 306 SPANISH GRAMMER

(Class 3, Cr. 3)

Prerequisite: SPAN 202

This course integrates the four basic language skills (reading, writing, listening and speaking) into a review of the major points of Spanish grammar from SPAN 101 through 202 plus practice of additional grammar points. The objectives of this course are to increase the students accuracy in the four basic language skills through acquisition of vocabulary, application of grammar rules, and use of the coherent structures.

SPAN 307 COMMERCIAL SPANISH

(Class 3, Cr. 3)

Prerequisite: SPAN 202

This course will provide students with the fundamentals of effective expression and communication as these apply to Spanish business situations in particular. It will concentrate on commercial vocabulary, reading, writing, and speaking as related to international business.

SPAN 313 SPANISH FOR SPANISH SPEAKERS I

(Class 3, Cr. 3)

A prerequisite of a placement test to determined native speaking ability in Spanish. Not open to students who have had SPAN 365 and SPAN 261. The presentation of the structure and phonology of Spanish in Spanish for those who come from native-speaking backgrounds but who require the formal training. Grammar, composition, and standard Spanish fluency.

SPAN 365 SPANISH CONVERSATION

(Class 3, Cr. 3)

Prerequisite: SPAN 202

Intensive practice in Spanish conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Practice in pronunciation.

SPAN 373 SPANISH TRANSLATION

(Class 3, Cr. 3)

Prerequisite: SPAN 261 or SPAN 313

A introduction to the principles of translation. Practice in translation from Spanish to English and vice versa. Selected, graded materials from simple to moderate difficulty, illustrating a variety of styles. Acquaintance with reference materials concerning Spanish and English and translations.

SPAN 390 SPECIAL TOPICS IN SPANISH

(Class 0 to 3, Lab. 0 to 3, Cr. 1 to 3)

Special topics related to Spanish and to Spanish-speaking cultures and literatures. Variable title. This course may be repeated for credit, provided the topics are different.

SPAN 405 INTRODUCTION TO SPANISH LITERATURE I

(Class 3, Cr. 3)

Introduction to the periods of Spanish literature from the beginning through the 18th century. Reading and discussion of representative works. The rudiments of literacy criticism.

SPAN 406 INTRODUCTION TO SPANISH LITERATURE II

(Class 3, Cr. 3)

Introduction to the periods of Spanish literature from the 18th century to the present. Reading and discussion of representative works. The rudiments of literary criticism.

SPAN 408 LANGUAGE PRACTICUM IN BUSINESS

(Class 3, Cr. 3)

Prerequisite: SPAN 261 and SPAN 307 and SPAN 365

The course requires classification of 5 or higher, GPA 2.5, and departmental approval. (May be repeated once for credit if experience is different.)

The course will consist of actual on-the-job experience in international corporations, industry, commerce, government, or health and social agencies where Spanish is used. The course is designed to expose students to their chosen vocational field.

SPAN 413 CULTURE OF SPANISH-SPEAKING AMERICANS

(Class 3, Cr. 3)

An introduction to the cultural heritage and customs of groups of Spanish-speaking Americans, such as Mexican-Americans, Puerto-rican Americans, Cuban Americans. The nature of the social processes, points of interference between cultures. Historical and geographical perspectives of Spanish-speaking Americans.

SPAN 414 LITERATURE OF SPANISH SPEAKING AMERICANS

(Class 3, Cr. 3)

The study of the literature of Chicano and Puerto Rican authors. Poetry, plays, short stories and novels presented in survey form so as to cover fairly themes from each Spanish-speaking population segment in contemporary American life. Intermediate knowledge of Spanish is needed because of dialecticism in many of the contemporary works.

SPAN 435 SPANISH AMERICAN LITERATURE TO MODERNISM

(Class 3, Cr. 3)

Prerequisite: SPAN 202

The study of the development of Spanish American literature from the early chronicles to the end of the 19th century with consideration of the pre-hispanic background.

SPAN 436 SPANISH AMERICAN LITERATURE FROM MODERNISM TO PRESENT

(Class 3, Cr. 3)

Prerequisite: SPAN 202

A continuation of SPAN 435. The study of the development of Spanish American literature beginning with the Modernist period to the present.

SPAN 451 SPANISH CIVILIZATION

(Class 3, Cr. 3) Experiential Learning*

The study of modern Spanish life with regard to the social institutions and customs. Lectures in the language. * Note: Only sections taken abroad meet the experiential learning requirement

SPAN 461 INTERMEDIATE SPANISH COMPOSITION

(Class 3, Cr. 3)

Prerequisite: SPAN 261 or SPAN 313

A continuation of SPAN 261. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary.

SPAN 465 INTERMEDIATE SPANISH CONVERSATION

(Class 3, Cr. 3)

Prerequisite: SPAN 365 or SPAN 313

Continued practice in Spanish conversation, and the study of phonetics for accuracy in pronunciation and intonation. Students are encouraged to study contemporary culture as a basis for their conversations.

SPAN 473 INTERMEDIATE SPANISH TRANSLATION

(Class 3, Cr. 3)

Prerequisite: SPAN 373

The continuation of SPAN 373 to include more extensive and more difficult transla-

tions. Also, a presentation of theoretical concepts concerning translation, and an orientation to research materials for translation purposes.

SPAN 481 SPANISH CULTURE

(Class 3, Cr. 3) *Experiential Learning**

Prerequisite: SPAN 202 or SPAN 313

The development of the cultural life of the Spanish people, as reflected in the geography, history, music, art, and architecture of Spain. Lectures in Spanish. Note: Only sections taken abroad meet the experiential learning requirement *

SPAN 482 LATIN AMERICAN CIVILIZATION

(Class 3, Cr. 3)

Prerequisite: SPAN 202 or SPAN 313

An outline of Latin American history; the cultural heritage from Spain and from the pre-Spanish civilizations; the intellectual, social, and cultural progress of the Latin American countries. Lectures in the language.

SPAN 490 TOPICS IN SPANISH

(Class 3, Cr. 3)

Prerequisite: SPAN 202

May be repeated for credit. Variable title.

SPAN 490A LATIN AMERICAN COLONIAL LITERATURE AND CULTURE

(Class 3, Cr. 3)

This course is a study of the life, works and times of Inca Garcilaso and sor Juana Ines de la Cruz. Through these two outstanding personalities of the culture of vice kingdoms of Peru and new Spain we will search for the ideas and civilizations generated by the encounter of European, Inca and Aztec cultures.

SPAN 511 ADVANCED SPANISH CONVERSATION

(Class 3, Cr. 3)

Prerequisite: SPAN 465

Additional practice in speaking and understanding Spanish. Talks based on material given in class.

SPAN 515 ADVANCED SPANISH COMPOSITION

(Class 3, Cr. 3)

Prerequisite: SPAN 261

Additional training in writing Spanish.

SPAN 541 SPANISH LITERATURE OF THE GOLDEN AGE

(Class 3, Cr. 3)

Prerequisite: SPAN 405

A survey of Spanish literature from 1500 to 1681. Reading and discussion of representative prose, dramatic and poetic works. Lectures and supplemental readings on literary criticism and on various aspects of the period useful to an understanding of the literature it produced.

SPAN 546 THE SPANISH NOVEL FROM REGIONALISM THROUGH THE GENERATION OF '98

(Class 3, Cr. 3)

Prerequisite: SPAN 406

The study of the 19th-century novel from the costumbristas to Galdos. The social and aesthetic preoccupations of the Generation of '98. Lectures and readings from representative authors.

SPAN 547 CONTEMPORARY SPANISH NOVEL

(Class 3, Cr. 3)

Prerequisite: SPAN 406

The contemporary novel as an insight into 20th century Spanish life and thought. Analysis of selected authors.

SPAN 552 SPANISH AMERICAN LITERATURE FROM 1900 TO 1940

(Class 3, Cr. 3)

Prerequisite: SPAN 436

A survey of Spanish American Literature from Modernism to 1940. Reading and discussion of a number of representative works as well as excerpts from several others.

SPAN 553 SPANISH AMERICAN LITERATURE FROM 1970-PRESENT

(Class 3, Cr. 3)

Prerequisite: SPAN 436

A survey of Spanish American literature from 1970 to the present. Readings and discussion of a number of representative works as well as excerpts from several others.

SPAN 555 CHICANO AND PUERTO RICAN WRITERS

(Class 3, Cr. 3)

Any 400-level course in Hispanic literature must precede this class.

A survey of the literature of Chicano and Puerto Rican writers written in Spanish and produced in the United States in light of their traditions and of contemporary interdisciplinary theories.

SPAN 560 INTRODUCTION TO THE LINGUISTIC STUDY OF SPANISH

(Class 3, Cr. 3)

Prerequisite: SPAN 365 and SPAN 261

Principles of phonetics, phonemics, and syntax as applied to Spanish. Brief introduction to general and historical linguistics.

SPAN 590 DIRECTED READING IN SPANISH

(Class 0 to 4, Cr. 1 to 4)

May be repeated for credit.

Serbo-Croatian

SRCT 101 SERBO-CROATIAN LEVEL I

(Class 3, Lab. 1, Cr. 3)

This course stands as an elective for students in other University departments.

The course is a contribution to intellectual growth and development as well as a service to the community.

SRCT 102 SERBO-CROATIAN LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: SRCT 101

This course stands as an elective for students in other University departments.

The course is a contribution to intellectual growth and development as well as a service to the community.

Statistics

STAT 130 STATISTICS AND CONTEMPORARY LIFE

(Class 3, Cr. 3)

Introduction to statistical ideas and their impact on various aspects of modern life. Topics will include the organization, manipulation, and understanding of numerical data, the art of data presentation, interpretation of statistical information as presented in the media, the concept of randomness in gambling and lotteries, and some discussion of statistical fallacies.

STAT 301 ELEMENTARY STATISTICAL METHODS I

(Class 3, Cr. 3)

Prerequisite: MA 147 or

A basic introductory statistics course with applications shown to various fields and emphasis placed on assumptions, applicability, and interpretations, or various statistical techniques. Subject matter includes frequency distributions, descriptive statistics, elementary probability, normal distribution applications, sampling distribution, estimation, hypothesis testing and linear regression.

STAT 315 INTRODUCTION TO PROBABILITY AND STATISTICS

(Class 3, Cr. 3)

Probability theory with a short-introduction to statistics. Not enough statistics to serve as a preparation for a second course in statistics.

STAT 330 BIostatISTICS

(Class 3, Cr. 3)

Prerequisite: MA 153 and BIOL 101 and BIOL 102 or BIOL 108 and BIOL 109

Not open to students with credit in BIOL 330.

This course will explore fundamental concepts of statistical methods and their application in biological research. The following topics will be included: experimental and sampling designs; descriptive statistics; basic probability and probability distribution; tests of hypothesis; one-way analysis of variance; linear regression. Emphasis will be placed on the collection, organization, analysis and interpretation of data from biological experiments and observations.

STAT 345 STATISTICS

(Class 3, Cr. 3)

Prerequisite: MA 164

Topics from exploratory data analysis and inferential statistics will be covered, along with a necessary introduction to probability. Statistical and probabilistic

simulations will be used to enhance students' understanding of randomness and variation. Extensive use of a statistical computer package will be required.

STAT 490 TOPICS IN STATISTICS FOR UNDERGRADUATES

(Class 0 to 5, Cr. 1 to 5)

Supervised reading and reports in various fields. Open only to students with the consent of the department.

STAT 501 EXPERIMENTAL STATISTICS I

(Class 3, Cr. 3)

Prerequisite: MA 153 or MA 151 or MA 159

Primarily intended for students who have not had calculus. Not open to students in mathematics, statistics or computer science. Credit should not be allowed in more than one STAT 301, 501, or 511. Fundamental concepts and methods of statistics for students interested in the analysis of experimental data. Subjects include descriptive statistics, basic probability theory, normal distribution, tests of hypotheses and confidence intervals for normal and Bernoulli populations, contingency tables, tests of goodness-of-fit, linear regression and nonparametric test.

STAT 502 EXPERIMENTAL STATISTICS II

(Class 3, Cr. 3)

Prerequisite: STAT 501

Continuation of STAT 501. Subject matter includes multiple regression and analysis of variance, with emphasis on statistical inference and applications to various fields.

STAT 511 STATISTICAL METHODS

(Class 3, Cr. 3)

Prerequisite: MA 261

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, poisson, hypergeometric distributions; one way analysis of variance; contingency tables; regression.

STAT 512 APPLIED REGRESSION ANALYSIS

(Class 3, Cr. 3)

Prerequisite: STAT 511 or STAT 517

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

STAT 513 STATISTICAL QUALITY CONTROL

(Class 3, Cr. 3)

Prerequisite: STAT 516 or STAT 511

A strong background in control charts including adaptations, acceptance plans, sequential analysis, statistics of combinations, moments and probability distributions, applications.

STAT 514 DESIGN OF EXPERIMENTS

(Class 3, Cr. 3)

Prerequisite: STAT 511 or STAT 512

Fundamentals, completely randomized design; randomized complete blocks; latin square; multi-classification; nested factorial; incomplete block and fractional replications for $2n, 3n, 2m \times 3n$; confounding; lattice designs; general minded factorials; split plot; analysis of variance in regression models; optimum design. Use of existing statistical programs.

STAT 516 BASIC PROBABILITY AND APPLICATIONS

(Class 3, Cr. 3)

Prerequisite: MA 164 or MA 224 Co-requisite: MA 172, MA 261

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered in this course.)

STAT 517 STATISTICAL INFERENCE

(Class 3, Cr. 3)

Prerequisite: STAT 516 or STAT 519

A basic course in statistical theory covering standard statistical methods and their applications. Estimation including unbiased, maximum likelihood and moment estimation; testing hypothesis for standard distributions, and contingency tables; confidence intervals and regions; introduction to non-parametric tests and linear regression.

STAT 532 ELEMENTS OF STOCHASTIC PROCESSES

(Class 3, Cr. 3)

Prerequisite: STAT 519

A basic course in stochastic models, including discrete and continuous time Markov Chains and brownian motion, as well as an introduction to topics such as Gaussian processes, renewal processes, replacement, and reliability problems.

Swahili

SWAH 101 SWAHILI LEVEL I

(Class 3, Lab. 1, Cr. 3)

Introduction to Swahili.

SWAH 102 SWAHILI LEVEL II

(Class 3, Lab. 1, Cr. 3)

Continuation of SWAH 101 (Swahili Level I).

Technology

TECH 581 WORKSHOPS IN TECHNOLOGY

(Class 0 to 8, Cr. 0 to 8)

Course topics will vary.

TECH 646 ANALYSIS OF RESEARCH IN INDUSTRY AND TECHNOLOGY

(Class 3, Cr. 3)

Analysis of research and evaluation of research reports. Emphasis on understanding the application of fundamental statistical methods in design and interpretation of research findings in industrial, technical and human resource development environments.

Theater

THTR 136 REHEARSAL AND PERFORMANCE I

(Lab. 2, Cr. 1)

Requires consent of instructor. May not be taken concurrently with THTR 168, 336, or 368. Repeatable once for credit.

Study and practice of rehearsal techniques of stage performance. Students will be assigned to acting or other rehearsal activities during semester's major production.

THTR 138 ACTING I

(Class 3, Lab. 1, Cr. 3) TRANSFER IN

Student experientially learns basic acting skills through a structured series of exercises. Emphasis is on developing and controlling concentration, creation of basic realities, improvisation. May be repeated for credit with consent of instructor.

THTR 168 THEATRE PRODUCTION I

(Lab. 2, Cr. 1)

This course requires consent of instructor. May not be taken concurrently with THTR 136, 336, or 368. Repeatable once for credit.

Study and application of aspects of theatre production. Practice in various production skills. Students will be assigned to positions in semester's major production.

THTR 201 THEATRE APPRECIATION

(Class 2, Lab. 2, Cr. 3) TRANSFER IN

Understanding and appreciation of the theatre's role in the modern world, including a survey of dramatic structure and analysis, and the functions of the actor, director, designer, and critic related to current stage production. Laboratory work includes attendance and discussion of the dramatic presentations on campus.

THTR 238 ACTING II

(Class 3, Lab. 1, Cr. 3)

Introduction to the Stanislavski Method through scene work. The student will present four to eight scenes of increasing complexity, beginning with modern, realistic drama. Textual analysis, advanced game work and improvisation. May be repeated for credit with instructor consent.

THTR 290 SPECIAL TOPICS IN THEATRE

(Class 1 to 3, Cr. 1 to 3)

Topics will vary.

THTR 336 REHEARSAL AND PERFORMANCE II

(Lab. 2, Cr. 1)

This course requires instructor consent. May not be taken concurrently with THTR 136, 168, or 368. Repeatable once for credit. Advanced study and practice of rehearsal techniques of stage performance. Students will be assigned to acting or other rehearsal activities during semester's major production.

THTR 368 THEATRE PRODUCTION II

(Lab. 2, Cr. 1)

This course requires instructor consent. May not be taken concurrently with THTR 136, 168, or 336. Repeatable once for credit. Advanced study and application of aspects of theatre production. Practice in various productions skills. Students will be assigned headships in various divisions of duties during the semester's major production.

THTR 490 SPECIAL TOPICS IN THEATRE

(Class 1 to 3, Cr. 1 to 3)

Topics will vary.

THTR 590 DIRECTED STUDY OF SPECIAL THEATRE PROBLEMS

(Cr. 1 to 3)

This course requires instructor consent. May not be taken concurrently with THTR 136, 168, or 336. Repeatable once for credit.

An individualized and intensive study of any aspect of theatre required by the student's plan of study.

Urdu

URDU 101 URDU LEVEL I

(Class 3, Lab. 1, Cr. 3)

This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

URDU 102 URDU LEVEL II

(Class 3, Lab. 1, Cr. 3)

Prerequisite: URDU 101

This course stands as an elective for students in other University departments. The course is a contribution to intellectual growth and development as well as a service to the community.

Women's Studies

WOST 121 INTRODUCTION TO WOMEN'S STUDIES

(Class 3, Cr. 3)

Not open to students with credit in GS 121

An introduction to a women's studies perspective in various academic disciplines. Emphasis on the socialization process of women, the history and literature of women, the politics and theory of the women's rights movement, and the changing role of women in society.

WOST 208 NUTRITION IN WOMEN'S HEALTH

(Class 3, Cr. 3)

Course does not meet nutrition competency requirements for Nursing, Early Childhood Education or Hospitality and Tourism Management Majors. Not open to students with credit in F&N 208. Exploration of women's health issues with emphasis on nutrition. Review of current research in normal and preventive nutrition throughout the lifecycle. Focus on women as individuals and on those who counsel and educate women.

WOST 236 MOTHERS AND DAUGHTERS IN LITERATURE

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Not open to students with credit in ENGL 236.

Course acquaints students with a new body of literature by women. Students explore mother-daughter relationships as presented in this literature to enhance their understanding of feminist approaches to life.

WOST 320 BY AND ABOUT WOMEN

(Class 3, Cr. 3)

Prerequisite: ENGL 104

Not open to students with credit in ENGL 320.

This literature course will emphasize significant texts by major women writers such as Atwood, the Brontes, Cather, Chopin, Dickinson, Eliot, Glaspell, Hurston, Jewett, Lessing, Mansfield, Morrison, Oates, Rich, and Woolf. Although the class will study mainly 19th and 20th century English and American writers, the readings will not be restricted to these. In addition, the readings will also include a variety of literary genres—novel, short fiction, poetry, and drama.

WOST 324 INTERNATIONAL WOMEN'S LITERATURE

(Class 3, Cr. 3)

Not open to students with credit in ENGL 324.

Course presents an international perspective on women's social, political, economic and imaginative lives. It focuses on the literary efforts of women to question, challenge, and examine the conditions affecting their lives. The major emphasis will be on global literatures from Africa, the Americas, Asia, and the Middle East. This course is cross-listed as ENGL 324.

WOST 340 LITERATURE BY WOMEN OF COLOR

(Class 3, Cr. 3)

Prerequisite: ENGL 104

This course focuses on literature written in English by women of color living in the United States. Writers included are Africa-American, Native-American, Asian-American, and Latin/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions. ENGL/WOST 340 examines some of the cultural differences among these groups, as reflected in the literature. This course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures. This course is cross-listed as ENGL 340. Not open to students with credit in ENGL 340.

WOST 350 SOCIAL PSYCHOLOGY OF MARRIAGE

(Class 3, Cr. 3)

Prerequisite: SOC 100 or SOC 312

Not open to students who have had CDFS 350 or SOC 350.

Designed to provide an understanding of contemporary courtship, marriage, and family interaction as cultural, social, and social-psychological phenomena. Consideration of the major sources of marital strain and conflict within a heterogeneous, rapidly changing society.

WOST 450 SEX ROLES IN MODERN SOCIETY

(Class 3, Cr. 3)

Prerequisite: SOC 350

Not open to students with credit in SOC 450.

A critical examination of the complementary roles of men and women with particular attention to problems of role adjustment in the contemporary United States. The neo-feminist movement and countermovements. Role conflicts and adjustments in such areas as family, education, employment, and the political area.

WOST 470 WOMEN IN THE MEDIA

(Class 3, Cr. 3)

Prerequisite: COM 114 or COM 201 or WOST 121

Not open students with credit in COM 470.

Focusing on the contributions made by women in newspaper, television, film, and performance, this course will explore how women are shaping societal and cultural values.

WOST 490 TOPICS IN WOMEN'S STUDIES

(Class 0 to 6, Lab. 0 to 6, Cr. 1 to 6)

Variable credit, variable title. May be repeated for credit if topics vary.