898. Seminar: Later English Literature
Fall, Winter, Spring, 3(3-0) May reenroll for a maximum of 12 credits. Special problems in English literature, 1660-1800.

900. Master’s Thesis Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

901. Studies in Comparative Literature
Fall, Winter, Spring, 3(3-0) May reenroll for a maximum of 12 credits. Interdepartmental with Romance Languages. Critical approaches to genre, periodization, and influence.

905. Studies in Shakespeare
Winter of odd-numbered years. 3(3-0) May reenroll for a maximum of 12 credits. Special problems in Shakespeare.

970. Graduate Reading Course
Fall, Winter, Spring, Summer. 1 to 5 credits. May reenroll for a maximum of 12 credits. Approval of department. Supervised reading course in English and American literature for Ph.D. candidates.

973. Seminar in English Education
Fall, Winter, Spring, 3 to 5 credits. May reenroll for a maximum of 10 credits in different topics. Approval of instructor. Seminar in the teaching of English language, literature, and composition.

975. The Reading Process and the Concept of Literacy
Spring, 3(3-0) May reenroll for a maximum of 12 credits. Approval of department. The contributions of language and literary studies to our understanding of the reading process and our definitions of literacy.

980. Studies in English Language
Fall, Winter, Spring, 3(3-0) May reenroll for a maximum of 12 credits. The English language from the viewpoint of historical problems, literary analysis and pedagogical implications.

981. Seminar: Earlier English Literature
Fall, Winter, Spring, 3(3-0) May reenroll for a maximum of 12 credits. Special problems in English literature, beginning to 1660.
440. External Morphology of Insects
Fall, 4(2-0) ENT 301, ENT 303, or approval of department. Morphological concepts of external skeletal parts of insects. Emphasis on evolutionary development of structures from the Apterygota through the Pterygota.

444. Insect Ecology
Fall of odd-numbered years, 3(3-0) One course in introductory entomology. Unique characteristics and principles of insect ecology. Trophic relationships, populations, climate, co-existence, competition, behavior, communities and distributions.

450. Insect Physiology
Fall of even-numbered years, 5(3-4) ENT 301, ENT 302; 1 biochemistry or physiology course; 1 year of chemistry including 1 term of organic. General and comparative physiology of insects, treating molecular, tissue and organ function. Laboratory exercises emphasizing mastery of sound experimental procedures.

455. Toxicology of Insecticides
Winter of odd-numbered years, 4(4-0) 1 term organic chemistry. Properties of insecticides. Mode of action, metabolism and movement in animals. Safety and potential hazards to humans and wildlife. Fates of insecticides in the environment.

460. Medical Entomology
Spring, 4(3-3) ENT 301, ENT 302, or approval of department. Distribution and biology of important arthropod vectors of diseases to humans, disease symptoms, life cycle of the infectious agent, reservoirs, arthropods, anaphylactic reactions, myiasis, and prophylactic measures.

470. Nematode Diseases of Economic Plants
Spring of odd-numbered years, 4(3-3) BOT 405, Interdepartmental with the Department of Botany and Plant Pathology. Major nematode diseases of economically important plants, with emphasis on diagnostic symptoms, nematology and biology of control.

478. Stream Ecology
Fall, 3(0-0) ENT 420, ZOL 389 or BOT 450 or F W 302 or approval of department. Students may not receive credit in both F W 478 and ENT 421. Interdepartmental with the Departments of Fisheries and Wildlife and Zoology, Administered by the Department of Fisheries and Wildlife. Biological, chemical, physical, and geological processes which determine the structure and function of stream ecosystems.

812. Graduate Seminar Topics
Fall, Winter, 1(1-0) May reenroll if different topic is taken. Graduate students and approval of department. Graduate level seminars on current research and philosophy. Student participation required.

815. Biological Control
Spring of even-numbered years, 3(2-3) Approval of department. Properties of entomophagous species, relationships to population ecology and systematics; foreign exploration, colonization, manipulation, and evaluation; interactions with pesticides; analysis of successful programs, and future trends. Collection for taxonomic lab to be made the summer before.

820. Applied Insect Ecology
Fall of odd-numbered years, 3(2-3) Approval of department. Ecological factors in an insect's ecosystem that can be manipulated for the purpose of pest management. Critical evaluation of current and classical literature represented by students in both oral and written reports.

821. Biology of the Arthropoda
Winter, 5(3-6) ZOL 306 or approval of department. Interdepartmental with the Department of Zoology. Ecology, life cycles, morphology, taxonomy, and distribution of arthropoda other than insects.

890. Problems
Fall, Winter, Spring. 1 to 6 credits. May reenroll for a maximum of 12 credits. Majors or approval of department. Advanced individual work in: apiculture, aquatic insects, insect biochemistry, biotes, economic insects, forest insects, morphology, nematology, insect physiology, plant disease transmission, insect toxicology, araneida, scorpiones, medical entomology, chemistry of insecticides, insect biology, extension entomology systems.

899. Master's Thesis Research
Fall, Winter, Spring. Variable credit. Approval of department.

940. Analytical Techniques for Biological Compounds I
Winter of odd-numbered years, 4(2-6) Organic chemistry, approval of department. Application, extraction, cleanup and purification techniques employed in analysis of biologically active compounds. Stresses use of radioisotopes, and column, paper, thin-layer, and molecular sieve chromatography.

941. Analytical Techniques for Biological Compounds II
Winter of even-numbered years, 4(2-6) ENT 940. Analytical techniques used for identification and quantification of biologically active compounds. Emphasis on spectroscopy and gas-liquid chromatography.

999. Doctoral Dissertation Research
Fall, Winter, Spring. Variable credit. Approval of department.

ENVIRONMENTAL ENGINEERING
See Civil and Environmental Engineering.

FAMILY AND CHILD ECOLOGY

College of Human Ecology

115. Family Resources
Fall, 3(2-0) Fall, Winter, Spring. 4(4-0) Students may not receive credit in both FCE 145 and S W 228.

145. The Individual, Marriage and the Family
Fall, Winter, Spring. 4(4-0) Not open to HEC majors.

200. Ecological Approach to Family and Health
Fall, Winter, 2(2-0) Sophomores. Not open to HEC majors.

221. Human Services in the Community
Fall, Spring, 4(3-3) Analysis of human and community needs; roles of professionals and volunteers in providing human and community services. Participation in community agency required.

239. Personal Finance
Fall, Winter, Spring, 3(3-0) Strategies, techniques and resources useful in the management of personal finance.

255. Family and Individual Development: Life Cycle
Winter, Spring, 3(3-0) Three terms of natural science; sophomores. Overview of family development. Predictable individual developmental changes over the life span. Cognitive, moral, physical, psychological and social aspects. Interfaces between individual and family development.

262A. Child Growth and Development: Conception through Early Childhood
Fall, Winter, Spring. Summer of odd-numbered years, 3(3-0) Sophomores, PSY 160 or PSY 170 or ED 200; FCE 262B concurrently.

262B. Child Growth and Development Laboratory
Fall, Winter, Spring. Summer of odd-numbered years, 1(0-3) FCE 262A concurrently or approval of department. Observation of human development in infants and young children.

263. Children, Youth and the Family
Fall, Winter, 3(3-0) Sophomores; SOC 241 or FCE 145 or FCE 262A; or approval of instructor. A family systems perspective of middle childhood, adolescence, and youth development is presented, incorporating childhood through launching stages of family development. Interactions of parents, children and socio-cultural factors are analyzed.