

Descriptions – Entomology

of

Courses

441. Internal Morphology

Winter. 4(2-6) ENT 440 or approval of department.

Morphology of the internal structure of insects. Emphasis on the evolutionary development of organs and organ systems of various representative insects.

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

Spring. 5(3-4) ENT 441; 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 man 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 man, disease symptoms, life cycle of the infectious agent, reservoirs, urticating arthropods, anaphylactic reactions, myiasis, and prophylactic measures.

470. Nematode Diseases of Economic Plants

Winter. 4(3-3) B S 212 or BOT 205. Interdepartmental with the Department of Botany and Plant Pathology.

Major nematode diseases of economically important plants, with emphasis on diagnostic symptoms, nematode biology and principles of control.

480. Insects in Relation to Plant Diseases

Fall of even-numbered years. 3(2-2)
ENT 302. Interdepartmental with the Department of Botany and Plant Pathology.

Relationships of insects, mites and nematodes to important plant diseases incited by bacteria, fungi, viruses and toxins. Mode of transmission and means of control. Transmission techniques and important plant-pathogen-insect relationships.

490. Topics in Entomology

Fall, Winter, Spring, Summer. Variable credit. Majors or approval of department.

Advanced work in medical entomology, acarology, advanced forest entomology, soil arthropods, behavior and biological control.

808. Advanced Taxonomy

Fall, Winter. 4(0-12) May reenroll for a maximum of 24 credits. ENT 418, ENT 440.

Classification in depth of a single order of insects, including comparative morphology of the group and survey of recent and classical literature.

812. Graduate Seminar Topics

Fall, Winter, Spring. 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

Winter 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 presented by students in both oral and written reports.

821. Advanced Stream Ecology

Summer. 3 credits. ENT 421 or approval of instructor. Given at W. K. Kellogg Biological Station. Interdepartmental with the Department of Fisheries and Wildlife.

Stream ecosystem energy budget models with emphasis on individual projects involving both laboratory and field experiments. Particular use will be made of artificial streams and locally abundant species of aquatic insects.

838. Principles of Taxonomy

Spring of odd-numbered years. 3(3-0)
Twenty credits in zoology and/or entomology, or approval of department.

Methods and principles of systematic zoology and entomology, including a historical survey of the pre-Linnaean and post-Linnaean systems of classification. International rules of zoological nomenclature and their emendations.

840. Insect Toxicology

Winter of odd-numbered years. 5(3-6)
ENT 301, ENT 302; organic chemistry.

Chemical and physical properties of insecticides, relationship of chemical structure to mode of action, and physiological basis of toxicological action.

871. Biology of Nematodes

Spring. 4(2-6) ENT 470 or approval of department. Interdepartmental with the Department of Botany and Plant Pathology.

Ontogeny, taxonomy, morphology, pathology and ecology of nematodes, with special reference to plant-parasitic and phytopathogenic species.

881. Biology of the Arthropoda

Winter. 5(3-6) ZOL 481 or approval of department. Interdepartmental with and administered by the Department of Zoology.

Ecology, life cycles, morphology, taxonomy, and distribution of arthropods other than insects.

890. Problems

Fall, Winter, Spring, Summer. 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, biosystematics, economic insects, insect ecology, forest insects, morphology, nematology, insect physiology, plant disease transmission, insect toxicology, araneida, acarina, medical entomology, chemistry of insecticides, insect biology, extension entomology, systems.

899. Master's Thesis Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

940. Analytical Techniques for Biological Compounds I

Fall. 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. 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, Summer. Variable credit. Approval of department.

FAMILY AND CHILD SCIENCES

FCS

College of Human Ecology

145. The Individual, Marriage and the Family

Fall, Winter, Spring. 4(4-0) Students may not receive credit in both FCS 145 and S W 228.

Individual as young adult. Alternative living patterns. Marriage as social institution. Courtship and marriage patterns. Adjustments in marriage. Attitudes and roles in family living. Crises situations. Family planning.

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. Interface 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; FCS 262B concurrently.

Physical, cognitive, social, and emotional aspects of human growth and development from conception through early childhood.

262B. Child Growth and Development Laboratory

Fall, Winter, Spring. Summer of odd-numbered years. 1(0-3) FCS 262A concurrently or approval of department.

Observation of human development in infants and young children.

- 263. Children, Youth and the Family**
(245.) Fall, Winter, Spring. 3(3-0)
Sophomores; SOC 241 or FCS 145 or FCS 262A;
or approval of instructor.
A family systems perspective of middle child-
hood, adolescence, and youth development is
presented, incorporating childhood through
launching stages of family development. In-
teractions of parents, children and socio-cultural
factors are analyzed.
- 364A. Interacting with Young Children**
in Child Development Centers
(364.) Fall, Winter, Spring. 3(3-0) FCS
262A, FCS 262B each with minimum grade of
2.0; FCS 364B concurrently.
Application of principles of human growth and
development to personal interaction with chil-
dren ages three to six individually and in small
groups in schools of early childhood.
- 364B. Interacting with Young**
Children--Laboratory
Fall, Winter, Spring. 1(0-3) FCS 364A
or concurrently, FCS 262A, FCS 262B each
with a minimum grade of 2.0.
Experience in interaction with children ages
two to six years, individually and in groups in a
child development center.
- 369A. Learning Activities for Early**
Childhood Programs
Fall, Winter, Spring. 3(3-0) Majors:
FCS 262A and FCS 262B, FCS 364A and FCS
364B each with a minimum grade of 2.0; FCS
369B concurrently. Others: approval of de-
partment.
Planning learning activities and teaching strate-
gies for children ages 3 to 6 in early childhood
education programs.
- 369B. Learning Activities for Early**
Childhood
Programs--Laboratory
Fall, Winter, Spring. 1(0-3) FCS 369A
concurrently and approval of department.
Experience in planning and carrying out learn-
ing activities with young children in an early
childhood program.
- 400H. Honors Work**
Fall, Winter, Spring, Summer. Vari-
able credit. May reenroll for a maximum of 16
credits. Seniors; approval of department.
- 442. Minority Families in America**
(401.) Winter. 3(3-0) Juniors.
Historical, structural, functional components of
minority family systems in white America. Cen-
ters on a particular minority family system each
term. Life styles, pressures, adaptations, viabil-
ity and continuity of minority family subculture.
- 444. Interpersonal Relationships in**
the Family
Fall, Winter, Spring, Summer. Summer of
even-numbered years. 3(3-0) FCS 145 or FCS
263 or approval of department.
Relationships between and among family mem-
bers as they are affected by other systems, and
by physical, cultural, social-psychological forces
within the family eco-system. Contemporary
family life issues.
- 445. Human Sexuality in the Family**
(365.) Fall, Winter, Spring. 3(3-0)
Juniors. Credit may not be earned in both FCS
445 and PSY 290.
Personal, interpersonal, societal meanings of
human sexuality, utilizing outgoing small peer
group interaction. Nonlecture, value clarifica-
tion approach, integrating reflection on research
findings, family, peer and cultural influences.
- 446. Approaches to the Study of the**
Family
Fall, Winter, Summer of odd-
numbered years. 4(4-0) FCS 145 or FCS 263,
FCS 444.
The family is studied from several approaches.
Case studies, films, literary materials, research
studies and observations of living situations are
included.
- 461. Individual Child Study**
Fall, Winter. 3(2-2) Majors: FCS 364;
others: FCS 262A, PSY 244 or ED 412.
An in-depth analysis of development and behav-
ior utilizing regular observation of a young
child. Applications of theories of child growth
and behavior.
- 464. Problems in Teaching in a Child**
Development Center
(464B.) Fall, Winter, Spring, Summer.
2(2-0) FCS 464A or FCS 464C or concurrently.
Analysis of problems in teaching in an early
childhood program. Application of child guid-
ance techniques and principles.
- 464A. Practicum in a Child**
Development Center
Fall, Winter, Spring, Summer. 7(0-21)
FCS 369A, FCS 369B each with a minimum
grade of 2.0; FCS 464 concurrently. Advance
application required. Not open to students with
credit in FCS 464C.
A directed practicum in planning, implement-
ing and evaluating the learning environment in
a class of young children during an entire term.
- 464C. Practicum in a Child**
Development Center
Fall, Winter, Spring, Summer. 4(0-12)
FCS 369A, FCS 369B each with a minimum
grade of 2.0; FCS 464 concurrently. Advance
application required. Not open to students with
credit in FCS 464A.
A directed practicum in planning, implement-
ing and evaluating the learning environment in
a class of young children. For experienced
teachers.
- 467. Administration of Child**
Development Centers
Spring. 3(3-0) FCS 464A, FCS 464B or
concurrently; or approval of department.
Administrator's role in child development cen-
ters. Application of child care philosophy, man-
agement and communication skills to operation
of early childhood education programs. Federal,
state, and local regulations and support services.
- 468. Teacher-Parent Interaction**
Fall, Winter, Spring. 3 credits. Majors:
FCS 464A, FCS 464B or concurrently; others:
FCS 262A or ED 412.
Analysis of parent-teacher communication and
interaction, parent involvement, and parent
education related to early childhood education
programs operated by schools, churches, or
community agencies. Field experience when
feasible.
- 470. Current Issues in Family and**
Child Sciences
Winter, Spring. 3(3-0) FCS 464A, or
Seniors, or approval of department.
Analysis of current events, issues; of legislation
which has bearing on homes, families and chil-
dren and children's programs. Implications for
professional decisions and actions.
- 480. Human Development and**
Interpersonal Relationships: The
Middle and Later Years
Spring, Summer of odd-numbered
years. 4(3-1) Introductory sociology and
psychology; FCS 145 or FCS 263 or FCS 444.
Social-psychological-biological development
and socialization for roles in middle and later
years. Generational relationships; societal in-
fluences. Case study approach involving in-
teraction with an adult or family in middle or
later years.
- 495. Independent Study**
Fall, Winter, Spring, Summer. 4 to 12
credits. May reenroll for a maximum of 12 cred-
its. Approval of department.
Study of a selected topic under the guidance of a
faculty adviser in the area of speciality.
- 498. Field Study**
Fall, Winter, Spring, Summer. 1 to 12
credits. May reenroll for a maximum of 12 cred-
its. Approval of department.
Study in off-campus situations in a variety of
ways using involvement in volunteer, govern-
mental or business-sponsored community ser-
vice agencies to further insights into interaction
among the individual, the family and the com-
munity.
- 801. Seminar in Family Life**
(801A.) Fall, Winter, Spring. 3(3-0)
May reenroll for a maximum of 12 credits. Ap-
proval of department.
- 802. Seminar in Child Development**
(801B.) Fall, Winter, Spring. 3(3-0)
May reenroll for a maximum of 12 credits. Ap-
proval of department.
- 810. Workshop**
Summer. Variable credit. Approval of
department.
Content varies depending on nature of work-
shop.
- 813. Special Studies in Family Life**
(813B.) Fall, Winter, Spring, Summer.
1 to 4 credits. May reenroll for a maximum of 12
credits. Approval of department.
- 819. Theories of Child Development**
(862.) Fall. 3(3-0) FCS 262A or child
psychology.
Comparative study of conceptual frameworks
utilized in child development.
- 820. Human Development in the**
Family: Physiological
Development
Fall. 4(4-0) Six credits in child devel-
opment or approval of department.
Selected aspects of family members' physiolog-
ical potential, development, status explored.
Family's contributions to members' physiologi-
cal potential for growth and development and to
realization of human potential are seen as fun-
damental.
- 821. Human Development in the**
Family: Personality
Winter. 4(4-0) Six credits in child devel-
opment or approval of department.
Influence of child-rearing practices and parent-
child relationships on developing human per-
sonality. Application of research findings and
theoretical approaches to psychological devel-
opment in the family and family-related situa-
tions.

**Descriptions – Family and Child Sciences
of
Courses**

822. Human Development in the Family: Socialization
Spring. 4(4-0) Basic course in sociology; 6 credits in child development or family life or approval of department.

Influence of family structure and interaction upon socialization from infancy to adulthood. Relationship of family to processes in larger social environment, and influence of these on human social development.

830. Individual Readings
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

831. Death, Dying, and the Family
Spring. 3(3-0)

Provides students with an understanding of various theoretical frames of reference developed for viewing death within the family and strategies designed to assist them to deal with it.

840. Topics in Child Development
Fall, Winter, Spring. Variable credit. 3(3-0) to 6(6-0) FCS 262A or a child growth and development course.

In-depth analysis of a selected topic pertinent to the care and education of young children in child development centers.

841. Early Childhood Education: Curricular Approaches
Spring. 3(3-0) FCS 262A or a child growth and development course.

Exploration of theoretical background and content of curricular approaches in early childhood programs. Analysis and evaluation of early childhood curricular materials. Experience in designing and sequencing activities for young children.

842. Assessment of Development of the Young Child
Fall. 3(3-0) A child growth and development course.

Survey of assessment instruments and procedures for children from birth to age seven. Techniques for practitioner or parent to use to assess physical, social, emotional and intellectual development.

843. Play and Human Development
Winter of odd-numbered years. 3(3-0) One course in child development or human development.

Role of play in human development. Functions of play related to other aspects of development. Analysis of theory related to play behavior.

850. Aging in the Family
Fall. 3(3-0) FCS 480 or approval of instructor.

Provides students with a knowledge and understanding of the literature in aging in the family and develops an appreciation of the interrelationships involved in this multidisciplinary area.

852. Communication and Family Crisis
Winter. 3(3-0) Approval of department.

Dynamics of family communication and adjustment to crisis during the life cycle. Delineation of major types of family crises and their consequences. Strategies for positive communication and resolution.

853. Interpersonal Effectiveness
Fall. 3(3-0) FCS 444 or approval of department.

Theory and research underlying personal development and effective relationships in the family system. Professional application of interpersonal effectiveness training. Approved through Summer 1980.

855. Topics in Family Relationships
Fall. 2 to 4 credits. FCS 444 or FCS 445 or approval of department.

In-depth analysis of a topic related to the American family as an interactive system within the larger society.

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

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit.

Research in home management and economics of the family.

FAMILY ECOLOGY F E

College of Human Ecology

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

Use of the human ecosystem perspective to study people and their various environments with focus on family and health support systems.

221. The Role of the Helping Professions and Organizations in Community Services
(IDC 221.) Fall, Winter, Spring. 4(4-0) Interdepartmental with and administered by the Department of Urban and Metropolitan Studies.

Analysis of human and community needs; review and examination of existing and emerging resources to meet those needs; role of professionals and volunteers in providing community and human services.

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

332. Theory and Application of Home Management
Fall, Winter, Spring. 4(3-2) Juniors and HEC 301 or concurrently; or approval of department.

Principles of effective home management and their application in a living situation.

340. Instruction in Human Ecology for Non-Formal Settings
Fall, Winter, Spring. 3(2-2) Juniors, HEC 301; Dietetic Majors: HNF 320 or concurrently.

Theory and practice of instruction in Human Ecology with specific application to non-formal environments. For majors in Dietetics and Community Services and other majors in human ecology.

400H. Honors Work
Fall, Winter, Spring, Summer. Variable credit. May reenroll for a maximum of 16 credits. Seniors; approval of department.

436. Consumer Economic Problems
Fall, Winter, Spring, Summer of even-numbered years. 3(3-0) EC 200 or EC 201. Nature of current consumer problems. Sources of information and methods of evaluating information in the search for solutions to problems and for improved consumer protection.

437. Energy Utilization in the Household
Fall, Summer of even-numbered years. 3(3-0) HEC 301 or approval of department.

Human and fossil fuel energy use at the household level. Issues and policies regarding work accomplishment in the home.

438. Family Financial Management
Fall, Spring, Summer of odd-numbered years. 4(4-0) HEC 301; EC 201 or PAM 201.

Major financial alternatives available to families during the founding, active parenthood, and retirement stages. Implications for the community of the family's financial decisions.

450. Selected Topics in Family Ecology
Fall, Winter, Spring. 3(3-0) or 4(4-0) May reenroll for a maximum of 12 credits. Seniors.

Current issues of concern to professional family ecologists.

495. Independent Study
Fall, Winter, Spring, Summer. Variable credit. May reenroll for a maximum of 12 credits. Approval of department.

498. Field Study
Fall, Winter, Spring, Summer. 4(2-8) to 16(2-42) Approval of department.

Preprofessional experience in a community agency/organization engaged in activities related to student's program. Weekly reports and seminar dealing with student learning experiences, professional development, and roles of selected agencies.

800A. Seminar in Family Ecology
Fall, Winter, Spring, Summer of even-numbered years. 3(3-0) May reenroll for a maximum of 12 credits. Approval of department.

804. Human Resource Development in Family
Spring, Summer of odd-numbered years. 3(3-0) EC 200, EC 201; FCS 444.

Role of family in human capital formation and development. Examination of effect of family environment on quality of human resources. Evaluation of public policy impacts on human resource development.

813A. Special Studies in Family Ecology
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

814. Community Systems for Community Development
Winter. 3(3-0) Approval of department. Interdepartmental with and administered by the Department of Resource Development.

Basic systems of the community, their functions and interrelatedness; the family, economic, government, education, and supportive service systems.