

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, urticating 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, nematode biology and principles of control.

478. Stream Ecology
Fall. 3(3-0) ENT 420, ZOL 389 or BOT 450 or F W 302 or approval of department. 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, Spring, Summer. 1(1-0)
May reenroll for a maximum of 8 credits if different topics are 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 presented by students in both oral and written reports.

871. Biology of Nematodes
Spring of even-numbered years. 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 306 or approval of department. Interdepartmental with and administered by the Department of Zoology.
Ecology, life cycles, morphology, taxonomy, and distribution of arthropoda 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
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, Summer. Variable credit. Approval of department.

ENVIRONMENTAL ENGINEERING

See Civil and Environmental Engineering.

FAMILY AND CHILD ECOLOGY FCE

College of Human Ecology

118. Family Resources
Fall. 3(2-2)

Skill development in identification, description and classification of human and non-human family resources on a historical and cross-cultural basis.

145. The Individual, Marriage and the Family
Fall, Winter, Spring. 4(4-0) Students may not receive credit in both FCE 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.

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. Human Services in the Community
Fall, Spring. 4(3-3)

Analysis of human and community needs: roles of professionals and volunteers in providing community and human services. Participation in community agency required.

238. 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. 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, FCE 262B concurrently; one of the following: PSY 160, PSY 170, T E 200, T E 200A, T E 200B, T E 200C, T E 200D.

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) FCE 262A or concurrently, 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.

331. Management and Decision Making in the Family
Fall, Winter. 3(3-0) HEC 201, Juniors.

Integrated nature of management in the family setting from an ecosystem perspective. Values and goals as reflected in decision making about family resources.

332. Application of Principles of Home Management
Fall, Spring. 2(0-5) FCE 331.

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

337. Energy Utilization in the Household
Fall. Summer of even-numbered years. 3(3-0) FCE 331 or approval of department.

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

340. Instruction in Human Ecology for Non-Formal Settings
Fall, Winter. 3(2-2) Juniors, FCE 221 or approval of department.

Theory and practice of instruction in Human Ecology with specific application to non-formal environments.

**Descriptions — Family and Child Ecology
of
Courses**

- 364A. Interacting with Young Children in Child Development Centers**
Fall, Winter. 3(3-0) FCE 262A, FCE 262B each with minimum grade of 2.0; FCE 364B concurrently.
Application of principles of human growth and development to personal interaction with children ages three to six individually and in small groups in schools of early childhood.
- 364B. Interacting with Young Children—Laboratory**
Fall, Winter. 1(0-3) FCE 364A or concurrently, FCE 262B each with a minimum grade of 2.0, approval of department.
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**
Winter, Spring. 3(3-0) FCE 364A, FCE 364B each with a minimum grade of 2.0; FCE 369B concurrently.
Planning learning activities and teaching strategies for children ages 3 to 6 in early childhood education programs.
- 369B. Learning Activities for Early Childhood Programs—Laboratory**
Winter, Spring. 1(0-3) FCE 369A concurrently and approval of department.
Experience in planning and carrying out learning activities with young children in an early childhood program.
- 400H. Honors Work**
Fall, Winter, Spring, Summer. 1 to 16 credits. May reenroll for a maximum of 24 credits. Seniors; approval of department.
- 404. Home as a Learning Center**
Fall. 3(3-0) Seniors or approval of department.
Learning processes and resource use in home settings. Exploration of linkages between the informal educational system and formal and non-formal systems.
- 405. Work and the Family**
Winter. 3(3-0) Juniors.
Examines the kinds and interrelationship of decisions made by the family and the paid work force (business/labor) as they relate to interaction between the family and the paid work sphere.
- 436. Consumer Economic Problems**
Fall. 3(3-0) EC 201 or EC 202.
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.
- 438. Family Financial Management**
Fall, Spring. 3(3-0) FCE 238, EC 202.
Application of financial planning and budgeting strategies to families during various stages of the family life cycle. Current income support programs. Implications for the community of the family's financial decisions.
- 439. Families: Consumer Legislation and Participation**
Spring of even-numbered years. 3(3-0) EC 201, FCE 438.
Public policies and laws affecting families and individuals as consumers. Regulation, protection, and legal resources. Influencing change through participation in consumer policy decisions.
- 440. Approaches to the Study of the Family**
Fall. Summer of odd-numbered years. 3(3-0) FCE 145 or FCE 263.
The family is studied from several approaches. Case studies, films, literary materials and research studies of living situations are included.
- 442. Minority Families in America**
Fall, Winter. 3(3-0) Juniors.
Historical, structural, functional components of minority family systems in white America. Centers on a particular minority family system each term. Life styles, pressures, adaptations, viability and continuity of minority family subculture.
- 444. Interpersonal Relationships in the Family**
Fall, Winter, Spring, Summer of even-numbered years. 3(3-0) FCE 145 or FCE 263, Juniors.
Relationships between and among family members 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**
Fall, Winter, Spring. 3(3-0) Juniors.
Personal, interpersonal, societal meanings of human sexuality, utilizing outgoing small peer group interaction. Nonlecture, value clarification approach, integrating reflection on research findings, family, peer and cultural influences.
- 450. Selected Topics in Family and Child Ecology**
Fall, Winter, Spring. 3(3-0) or 4(4-0) May reenroll for a maximum of 12 credits. Seniors.
Current subjects of concern to professionals working with families and children.
- 461. Individual Child Study**
Fall, Spring. 3(2-2) Majors: FCE 364A, FCE 364B; Nonmajors: FCE 262A or PSY 244 or CEP 412, approval of department.
An in-depth analysis of development and behavior utilizing regular observation of a young child. Applications of theories of child growth and behavior.
- 464. Problems in Teaching in a Child Development Center**
Fall, Winter, Spring, Summer. 2(2-0) FCE 464A or FCE 464C or concurrently.
Analysis of problems in teaching in an early childhood program. Application of child guidance techniques and principles.
- 464A. Practicum in a Child Development Center**
Fall, Winter, Spring, Summer. 7(0-21) FCE 369A, FCE 369B each with a minimum grade of 2.0; FCE 464 concurrently, approval of department. Advance application required. Not open to students with credit in FCE 464C.
A directed practicum in planning, implementing 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) FCE 369A, FCE 369B each with a minimum grade of 2.0; FCE 464 concurrently, approval of department. Advance application required. Not open to students with credit in FCE 464A.
A directed practicum in planning, implementing and evaluating the learning environment in a class of young children. For experienced teachers.
- 467. Administration of Child Development Centers**
Spring. 3(3-0) FCE 464A, FCE 464 or concurrently; or approval of department.
Administrator's role in child development centers. Application of child care philosophy, management and communication skills to operation of early childhood education programs. Federal, state, and local regulations and support services.
- 468. Teacher-Parent Interaction**
Fall, Winter. 3 credits. Majors: FCE 464A, FCE 464 or concurrently; others: FCE 262A or CEP 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 Ecology**
Winter, Spring. 3(3-0) FCE 464A, or Seniors, or approval of department.
Analysis of current events, issues; of legislation which has bearing on homes, families and children and children's programs. Implications for professional decisions and actions.
- 479. Adult Development and The Family: Adult Middle Years**
Winter. 3(3-0) A course in human development or approval of department.
Adult development and the relationships of middle aged individuals in their personal, family, work, and societal environments.
- 480. Adult Development and the Family: The Aging Years**
Fall, Spring. Summer of odd-numbered years. 4(3-2) Introductory sociology or psychology or a course in human development.
Social-psychological-biological development and socialization for roles in later years. Generational relationships, social influences. Field study approaches involving interaction with an adult or family in later years.
- 491. Evaluation of Family Related Programs**
Spring. 3(3-0) Seniors, FCE 340.
Design and implementation of models of program evaluation in communities. Application to specific family, child or consumer related programs.
- 492. Occupational Home Economics**
Winter. 3(3-0) Approval of department.
Planning, implementing and evaluating occupational home economics programs.
- 494. Family Financial Advising**
Winter of odd-numbered years. 3(3-0) FCE 444, FCE 438, ACC 201 or ACC 230.
Financial advising strategies for working with families throughout the life cycle.
- 495. Independent Study**
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. Approval of department.
Study of a selected topic under the guidance of a faculty member.

- 498. Field Study**
Fall, Winter, Spring, Summer. 2(2-8) to 16(2-42) May reenroll for a maximum of 16 credits. FCE 340, approval of department.
Preprofessional experience in community, governmental or business sponsored organization related to student's program. Student analysis of learning experiences required.
- 801. Seminar in Family Life**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 12 credits. Approval of department.
- 802. Seminar in Child Development**
Fall, Winter, Spring. 3(3-0) May reenroll for a maximum of 12 credits. Approval of department.
- 804. Human Resource Development in Family**
Winter. Summer of odd-numbered years. 3(3-0) EC 201, EC 202; FCE 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.
- 810. Workshop**
Summer. 2 to 10 credits. May reenroll for a maximum of 10 credits. Approval of department.
Content varies depending on nature of workshop.
- 813. Special Studies in Family Life**
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.
- 819. Theories of Child Development**
Fall. 3(3-0) FCE 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 development or approval of department.
Selected aspects of family members' physiological potential, development, status explored. Family's contributions to members' physiological potential for growth and development and to realization of human potential are seen as fundamental.
- 821. Human Development in the Family: Personality**
Winter. 4(4-0) Six credits in child development or approval of department.
Influence of child-rearing practices and parent-child relationships on developing human personality. Application of research findings and theoretical approaches to psychological development in the family and family-related situations.
- 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.
- 823. Curriculum in Home Economics Education**
Summer of odd-numbered years. 3(3-0) Approval of department.
Clarification of the mission and goals of home economics as one basis for curriculum development. Application of various conceptions of curriculum within the context of home economics, and special problems in curriculum implementation.
- 824. Programs in Home and Family Life Education**
Winter of odd-numbered years. 3(3-0) Approval of department.
Develops depth in home and family living courses offered in secondary school programs.
- 825. Methods of Teaching Adults**
Spring. 3(3-0) Approval of department.
Developmental needs of adults and changes in society affecting families as a basis for development of adult programs in homemaking education. Experiences will be provided with programs in progress.
- 827. Evaluation in Home Economics Education**
Summer of even-numbered years. 3(3-0) Approval of department.
Evaluation procedures and practices for various levels of educational programs in the area of human ecology.
- 828. New Developments in Home Economics Education**
Summer of even-numbered years. 3(3-0).
Trends in the field of home economics education and their implications for curriculum, delivery systems, and educational arenas.
- 830. Individual Readings**
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 9 credits. Approval of department.
- 831. Values and Family Behavior**
Winter. Summer of odd-numbered years. 4(4-0) Approval of department.
Role and function of values as fundamental to understanding behavior in the family. Cognition and actualization of values. Resolution of value conflicts. Conceptual and methodological approaches to study of values.
- 832. Theories of Management and Decision Making in the Family**
Spring. Summer of even-numbered years. 4(4-0) HEC 301.
Comparative study of conceptual frameworks of family decision-making and management, including social, economic and technical decision domains.
- 835. Family Ecosystems**
Fall, Spring. Summer of even-numbered years. 3(3-0) Approval of department.
Family viewed from an ecosystems perspective. Emphasis placed on energy and communication cycles within the family. Integration of management, family dynamics and developmental concepts.
- 837. Allocation of Family Resources**
Spring of even-numbered years. Summer of odd-numbered years. 3(3-0) A course in microeconomics or approval of department.
Application of family resource allocation theories to the patterned use of human and non-human resources in households. Family economic strategies to attain and maintain desired standards of living.
- 838. Analysis of Family Income**
Spring of odd-numbered years. 3(3-0)
A course in macroeconomics or approval of department.
Forms of family income and economic problems relative to the protection of family economic security.
- 840. Topics in Child Development (MTC)**
Fall. 3(3-0) May reenroll for a maximum of 6 credits if different topic is taken. 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 of even-numbered years. 3(3-0)
A course in child growth and development; early childhood curriculum course or equivalent experience.
Theoretical background, content and evaluation of early childhood curricula and programs. Influence of research and public policy on program practices.
- 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.
- 844. Child Development Across Cultures**
Winter of odd-numbered years. 3(3-0)
Approval of department.
Development of children in cultures throughout the world. Biological, ecological, and social factors influencing behavior of children and their families. Impact of rapid social changes.
- 845. Approaches to Child Rearing**
Spring. 3(3-0) One course in child development or family development or approval of department.
Child rearing and parental practices based on various theoretical models.
- 846. Parent Education: Programs and Processes**
Winter of even-numbered years. 3(3-0)
FCE 845 or approval of department.
Materials and approaches to parent education. Application of teaching strategies and evaluation techniques will be made by designing an educational program for parents.
- 848. Principles of Program Development For Infants**
Winter. 2(2-0) A child growth and development course.
Concepts of early childhood education applied to programming for the developmental needs of infants. Evaluation of research, learning materials, and activities for infants in home and day care settings.

Descriptions — Family and Child Ecology of Courses

849. Practicum in Infant Care Settings
Fall, Winter, Spring, 2(1-3) or 3(1-6)
May reenroll for a maximum of 6 credits. FCE 848 or concurrently; approval of department.
 Directed experience with infants and their caregivers in home and day care settings.

850. Aging in the Family
Spring, 3(3-0) FCE 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.

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

Theoretical frames of reference for viewing death within families and strategies designed to assist them.

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. Developing Family Competencies
Fall, 3(3-0) FCE 444 or approval of department.

Identification, clarification and application of concepts, principles, processes and interactive skills effective in maintaining and enhancing the quality of family relationships. Focus is on developing family strengths.

854. Theories of Family Process and Relationships
Winter, 3(3-0) FCE 440, basic research methods course or approval of department.

Comparison and analysis of major conceptual and theoretical perspectives in study of the family.

855. Topics in Family Relationships (MTC)
Fall, 2 to 4 credits. May reenroll for a maximum of 8 credits if different subtitle is taken. FCE 444 or FCE 445 or approval of department.

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

856. Family Transitions: Separation, Divorce, Remarriage
Spring of even-numbered years, 3(3-0) Approval of instructor.

Interpersonal dynamics and adjustments in family life transitions due to changes in marital status. Current research, laws, and programming to meet family needs and enhance effective interpersonal adjustment.

857. The Adolescent in the Family
Summer, 3(3-0) FCE 262A, FCE 263 or approval of department.

An ecosystem approach to selected developmental dimensions and issues of adolescence in relation to the significant contexts of adolescent life.

865. Community Development Field Study: Project Design
Winter, 4(3-2) R D 864 or approval of department. Interdepartmental with and administered by the Department of Resource Development.

Design of a community development project in a selected Michigan community. Focus on community issues using the action research model of community change (field trips required).

866. Community Development Field Study: Project Implementation
Spring, 4(2-4) R D 865 or approval of department. Interdepartmental with and administered by the Department of Resource Development.

Undertaking the project designed in R D 865 (field project required).

891. Research Methods
Fall, Spring, Summer of even-numbered years, 3(3-0) Approval of department.

Elements of the research process; problem formation, theoretical frameworks, operationalizing concepts, hypotheses formulation, research design, instrumentation, sampling, analysis, interpretation, and reporting of findings.

894. Field Techniques in Family Study
Spring, 3(3-0) FCE 835, FCE 891 or approval of instructor.

Practical experience in problem selection, data collection in a natural family setting, and analysis and presentation of data in research journal format. Field experience with a family required.

897. Independent Study in Family Ecology
Fall, Winter, Spring, Summer, 1 to 5 credits. May reenroll for a maximum of 9 credits. Approval of department.

Study on an individual or group basis.

898. Laboratory and Field Experience
Fall, Winter, Spring, Summer, 1 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

Supervised graduate practicums, observation, internships, and externships.

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

901. Internship
Fall, Winter, Spring, Summer, 1 to 5 credits. May reenroll for a maximum of 12 credits. Approval of department.

Supervised advanced graduate practicums, observation, internships, and externships in the various areas of emphasis.

902. Independent Study in Family Ecology
Fall, Winter, Spring, Summer, 1 to 5 credits. May reenroll for a maximum of 9 credits. Approval of department.

Study on an individual basis.

903. Seminars in Family Ecology
Spring, 2 or 3 credits. May reenroll for a maximum of 9 credits. Approval of department.

Seminars in selected topics.

932. History and Philosophy of Human Ecology
Fall, 3(3-0)

History and development of human ecology as an interdisciplinary field of study. Values underlying the field. Current emphasis.

935. Family Ecology Theory Development
Fall of odd-numbered years, 3(3-0) FCE 835, FCE 891 and one course in family or human development theory.

Assumptions, concepts and propositions in family ecological theory. Application of selected strategies of theory building.

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

FAMILY MEDICINE F M

College of Osteopathic Medicine

515. Health Care in Underserved Areas
Fall, 2 or 3 credits. Admission to a college of medicine or approval of department. Interdepartmental with and administered by the Department of Family Practice.

Professional, economic, and personal issues confronting the practicing physician in medically underserved areas.

516. Migrant Worker Health Care
Spring, 2 to 3 credits. Admission to a college of medicine or approval of department. Interdepartmental with and administered by the Department of Family Practice.

Health beliefs, patient attitudes, economic situation and medical problems of migrant agricultural workers. Introduction to occupational medicine in the agricultural sector, including parasitology, pesticide hazards, taking an occupational history.

590. Special Problems in Family Medicine
Fall, Winter, Spring, Summer, 1 to 8 credits. May reenroll for a maximum of 32 credits. Approval of department.

Each student will work under direction of a faculty member on an experimental, theoretical or applied problem.

600. Clinical Practicum in Family Medicine
Fall, Winter, Spring, Summer, 12 credits. May reenroll for a maximum of 24 credits. Grade P in all courses offered in terms 1 through 8 or approval of department.

Opportunity for direct involvement and experience in functioning family practice. Emphasizes patient, office, and personnel management. Provides understanding and consideration of responsibilities encountered in the practice of family medicine.

620. Directed Studies
Fall, Winter, Spring, Summer, 2 to 24 credits. May reenroll for a maximum of 48 credits. Admission to a college of medicine or approval of department.

Individual or group projects on special problems related to family medicine.

630. Substance Abuse Clerkship
Fall, Winter, Spring, Summer, 4(4-0) Grade P in all courses in terms 1 through 8 or approval of department.

Diagnosis and medical management of substance abuse/alcoholic patients.

652. Principles of Family Practice I
Winter, 1(0-4) Completion of all Unit I course requirements, PHM 520 or approval of department.

Preceptorship experience in family medicine taught by faculty and clinical preceptors at sites located throughout the State of Michigan.

662. Principles of Family Practice II
Spring, 1(0-4) F M 652; systems biology course concurrently.
 Continuation of F M 652.