ENVIROMENTAL ENGINEERING ENE

801. Dynamics of Environmental Systems SPRING
Fall, 3(3-0) P: CE 457, ENE 801
Principles of mass balance; reaction kinetics; mass transfer; reactor theory in environmental engineering. QP: CE 481 QA: ENE 801

802. Physico-chemical Processes in Environmental Engineering SPRING
Fall, 3(3-0) P: ENE 801
Analysis of physical and chemical principles which form the basis of air and water pollution control and are important in the fate of environmental contaminants in water, air and soils. QP: CE 483 QA: ENE 802

803. Physicochemical Process Laboratory SPRING
10-1 P: ENE 801 C: ENE 802
Experiments involving physico-chemical processes such as air stripping, coagulation/floculation, activated carbon and chemical oxidation. QP: ENE 801 QA: ENS 802

804. Biophysical Processes in Environmental Engineering SPRING 3(3-0) P: ENE 801 C: ENE 801 or concurrently C: ENE 801 if not already taken
Basic principles for the engineering of microbial processes used in wastewater treatment, in-situ bioreclamation, and solid waste stabilization. QP: ENE 801 QA: ENS 804

805. Biophysical Processes Laboratory FALL 1(0-3) P: ENE 804
Laboratory experience in which principles taught in ENE 804 are applied for the treatment of wastewater. QP: ENE 804 QA: ENS 805

807. Environmental Analytical Chemistry FALL 3(3-0) P: CE 481, approval of the department
Modern techniques for measurement and analysis in environmental engineering, sample preparation, quality assurance. QP: CE 481

808. Environmental Analytical Chemistry Laboratory FALL 10-1 P: CE 487
Laboratory work in environmental analytical chemistry. QP: CE 481

839. Selected Topics in Environmental Engineering FALL, SPRING, SUMMER 5(3-0) P: Approval of department
Selected topics in new or developing areas of environmental engineering. QP: CE 890

999. Masters Thesis Research FALL, SPRING, SUMMER 1 to 8 credits. P: Approval of department
May enroll for a maximum of 6 credits. Master's thesis research

999. Doctoral Dissertation Research FALL, SPRING, SUMMER 1 to 12 credits. P: Approval of department (Doctoral dissertation research)

FAMILY AND CHILD ECOLOGY FCE

145. The Individual, Marriage and the Family FALL, SPRING 3(3-0) P: FCE 145, SOC 100 or FCE 211
Development of the young adult in the human ecological context. Issues of sexuality, gener, parenting, work and family interface, communication and resource use. Diversity in relationships and families. QP: FCE 145

211. Child Growth and Development: Conception Through Early Childhood FALL, SPRING 4(3-2) P: PSY 101 R: Not open to freshmen. Physical, cognitive, social, emotional and ecological aspects of human growth and development from conception through early childhood. QP: PSY 160 OR PSY 170 QA: FCE 262A

212. Children, Youth and Family FALL, SPRING 3(3-0) P: FCE 145, SOC 100 or FCE 211. R: Not open to freshmen.
An ecosystems perspective on development during childhood and adolescence emphasizing family and community contexts. QP: FCE 145 OR FCE 262A QA: FCE 262B

225. Ecology of Family and Human Development FALL, SPRING 3(3-0) R: NONE
Human development across the lifespan with an ecological perspective. Relationships between human resource professionals and family systems.

238. Personal Finance FALL, SPRING, SUMMER 3(3-0) Strategies, techniques and resources useful in the management of personal finance. QP: FCE 238

Other courses and descriptions can be found in the document. Courses are subject to revision and final approval.
424. Student Teaching in an Early Childhood Program
Fall, Spring. 6 to 9 credits in increments of 3 credits. R: Open only to freshmen and sophomores. P: FCE 321, FCE 321L, approval of department. R: Open only to seniors and graduate students. Facilities in Child Development, Child Development and Teaching, Community Services, Community Services Urban Studies, and Family Community Services. A supervised teaching practicum. Planning, implementing, and evaluating an educational, educational program for children and families. 
QP: FCE 359A/FCE 359B QA: FCE 464 FCE 464A FCE 464C FCE 468

441. Home Economics Education Programs
Fall, Spring. 2(2-0) R: Not open to freshmen and sophomores. Types, functions, and purposes of various home economics education programs, and operational issues. QA: TE 442 TE 331

442*. Ethnic Minority Families in America
Fall, Spring. 3(3-0) R: Juniors and Above Historical, structural, functional, components of selected ethnic minority family systems in America. Centers on selected minority family systems, life styles, pressures, adaptations, viability, and continuity. QA: FCE 442

444*. Interpersonal Relationships in the Family
Fall, Spring. 3(3-0) P: One course in ISS R: Juniors and Above Personal awareness and interpersonal relationships within the family system. Group interaction focuses on family experiences. QA: FCE 444

454. Family Financial Management
Spring. 3(3-0) R: Not open to freshmen and sophomores. Financial management strategies of families during the life cycle. Interventions programs. 
QP: FCE 258 EC 202 QA: FCE 436

455*. Human Sexuality
Fall, Spring. 3(3-0) R: Not open to freshmen and sophomores. Family and psychosocial factors affecting the development of a person's sexuality across the life cycle. Reciprocal impact on society and the legal system. QA: FCE 445

459. Consumer Issues
Spring. 3(3-0) P: FCE 258. R: Not open to freshmen and sophomores. Issues in contemporary consumer ecosystems. QA: FCE 459

470. Current Issues in Family and Child Ecology
Spring. 3 to 9 credits in increments of 3 credits. May enroll for a maximum of 9 credits. R: Not open to freshmen and sophomores. Legislation, current events, and issues affecting families and children. Implications for professional decisions and actions. QA: FCE 470

471. Evaluation of Human Service Programs
Fall, Spring. 3(3-0) R: Not open to freshmen and sophomores. Models of program evaluation for human service-related programs. 
QP: FCE 340 QA: FCE 491

473. Administration of Child and Family Programs
Spring. 3(3-0) P: FCE 370 or FCE 424. R: Open only to seniors and graduate students in Child Development, Child Development and Teaching, Community Services, Community Services Urban Studies, and Family Community Services. Approval of department. Administrative and ecological principles. Program linkages with agencies and their regulations. QA: FCE 467

490*. Independent Study
Fall, Spring, Summer. 1 to 5 credits. May enroll for a maximum of 9 credits. R: Not open to freshmen and sophomores. Approval of instructor; application required. Individual study of selected topics under faculty guidance. QA: FCE 495

490H*. Honors Independent Study
Fall, Spring, Summer. 1 to 5 credits. May enroll for a maximum of 9 credits. R: Not open to freshmen and sophomores. Approval of instructor; application required. Honors individual study of selected topics with faculty guidance. QA: FCE 495

492. Internship Seminar
Fall, Spring. 2(2-0) P: FCE 370. R: Open only to Family Community Services, Home Economics Education, and Family and Consumer Resources majors. Preparation for professional internship. 
QP: FCE 340 QA: FCE 497

493. Internship
Fall, Spring, Summer. 3 to 9 credits in increments of 3 credits. R: Open only to Family and Consumer Resources, Family Community Services, and Home Economics Education seniors. Professional experience in a community organization. 
QP: FCE 221 FCE 340FCE 492 QA: FCE 498

801*. Family Ecosystems
Fall, Spring. 3(3-0) R: Open only to graduate students. Family viewed from ecosystems perspective. Assessment tools used to analyze family systems. QA: FCE 835

810*. Theories of Human Development
Fall. 3(3-0) R: Open only to graduate students. Major theories of development; research findings and the validity of theoretical positions. QA: FCE 819

811*. Child Development: Ecological Perspectives
Fall of even-numbered years. 3(3-0) R: Open only to graduate students. Ecological factors that influence family functioning and child outcomes. QA: FCE 819 FCE 891

812*. Adolescence in the Family: Ecological Perspectives
Spring of even-numbered years. 3(3-0) R: Open only to graduate students. Ecological factors that influence family functioning and adolescent outcomes. QA: FCE 857

813*. Adulthood and Aging in the Family: Ecological Perspectives
Fall of odd-numbered years. 3(3-0) P: FCE 413. R: Open only to graduate students. Adult development and aging in the contexts of family and community. Family relationships in adulthood and aging. QA: FCE 479 FCE 480 QA: FCE 850

814*. Parenthood and Parent Education
Spring of odd-numbered years. 3(3-0) P: FCE 811, or FCE 516; FCE 812. R: Open only to graduate students. Influence of parents on children and youth factors that influence parenting. Approaches to providing educational and support for parents. QA: FCE 851 FCE 845 FCE 846

821*. Early Childhood Education: Curricular Approaches
Spring. 3(3-0) P: FCE 810. R: Open only to graduate students. Theoretical background, content, and evaluation of early childhood curricula and programs. Influence of research and public policy. QA: FCE 819 QA: FCE 841

822*. Assessment of the Young Child
Fall of even-numbered years. 3(3-0) R: Open only to graduate students. Assessment instruments and procedures for children from birth to age seven. Techniques for assessing physical, social, emotional, and cognitive development of young children. QA: FCE 842

823*. Infant Programs and Practices
Spring of odd-numbered years. 3(3-0) P: FCE 810 or PSY 845. R: Open only to graduate students. Concepts of early childhood education applied to children from birth to age three. Evaluation of research, learning materials, and activities infant and in small group settings. Field work required. QA: FCE 819 ORAPR DEPT QA: FCE 848 FCE 849

830*. Survey of Marriage and Family Therapy Theories
Fall. 3(3-0) R: Open only to graduate students. Contemporary ecology theories of marriage and family therapy. QA: FCE 869

831*. Treatment Processes in Marriage and Family Therapy
Spring. 3(3-0) P: FCE 830. R: Open only to graduate students. Open only to Marriage and Family Therapy majors. Case management and treatment processes for problems affecting system change and family functioning. QA: FCE 822

832*. Ethics, Law, and Professional Development
Spring of even-numbered years. 3(3-0) R: Open only to graduate students. Ethics and laws affecting family life professionals. Developing a professional identity. Management of private practice and consulting services. QA: FCE 858
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCE 845*</td>
<td>Foundations of Family Study</td>
<td>Fall, 3(3-0); R: Open only to graduate students. Historical and cultural perspectives of the family; conceptual approaches to family study; sensitivity to family diversity; key issues related to the life cycle. Field observations required.</td>
</tr>
<tr>
<td>FCE 847*</td>
<td>Theories of the Family</td>
<td>Spring, 3(3-0); P: FCE 845. R: Open only to graduate students. Perspectives on the family. Relationships of theory, research, and practice.</td>
</tr>
<tr>
<td>FCE 849*</td>
<td>Divorce and Remarriage Interventions</td>
<td>Fall of even-numbered years, 3(3-0); R: Open only to graduate students. Impact of changing marital status on the individual, family, and society. Current research, laws, educational programming for clinical treatment strategies.</td>
</tr>
<tr>
<td>FCE 850*</td>
<td>Theories of Management and Decision Making in the Family</td>
<td>Fall of even-numbered years, 3(3-0); R: Open only to graduate students. Theories of decision making in the context of family management. Application to human resource development in the family. Integrated ecological approach.</td>
</tr>
<tr>
<td>FCE 851*</td>
<td>Theories of Family Ecology</td>
<td>Fall of odd-numbered years, 3(3-0); P: One course in economics. R: Open only to graduate students. The household as an economic unit in consumer and producer roles. Economic functions and processes.</td>
</tr>
<tr>
<td>FCE 852*</td>
<td>Methods of Teaching Adults</td>
<td>Fall of odd-numbered years, 3(3-0); R: Open only to graduate students. Uses of human and family ecological perspectives in teaching adult audiences.</td>
</tr>
<tr>
<td>FCE 853*</td>
<td>Program Design and Development</td>
<td>Fall of even-numbered years, 3(3-0); R: Open only to graduate students. Processes involved in program design and development for human service organizations and agencies.</td>
</tr>
<tr>
<td>FCE 854*</td>
<td>Administration and Management of Human Services Programs</td>
<td>Spring of even-numbered years, 3(3-0); P: FCE 872 R: 8 and above. Analysis of the process and procedures involved in management and administration of human services programs.</td>
</tr>
<tr>
<td>FCE 856*</td>
<td>Curriculum and Evaluation in Home Economics Education</td>
<td>Summer of odd-numbered years, 3(3-0); R: Open only to graduate students. Relationships between curriculum and evaluation. Processes used in developing curriculum and evaluation models.</td>
</tr>
<tr>
<td>FCE 859*</td>
<td>Research Methods in Family and Child Ecology</td>
<td>Fall, Spring. 3(3-3); R: Open only to graduate students. Methods applied to problem definition, research design, and analysis.</td>
</tr>
<tr>
<td>FCE 860*</td>
<td>Independent Study</td>
<td>Fall, Spring, Summer. 1 to 5 credits. May renew for a maximum of 9 credits. R: Open only to graduate students. Individual study of selected topics with faculty guidance.</td>
</tr>
<tr>
<td>FCE 861*</td>
<td>Topics in Family and Child Ecology (MTC)</td>
<td>Fall, 2 to 3 credits. May renew for a maximum of 12 credits. R: Open only to graduate students. Theories related to family processes used in developing family, community, and organization programs for children and families.</td>
</tr>
<tr>
<td>FCE 862*</td>
<td>Topics in Family and Child Ecology: Families in Poverty</td>
<td>3(3-0); R: Open only to graduate students. Causes of poverty. Poverty and family functioning. Proposals for breaking the poverty cycle.</td>
</tr>
<tr>
<td>FCE 863*</td>
<td>Topics in Family and Child Ecology: Child Development Across Cultures</td>
<td>3(3-0); R: Open only to graduate students. Developmental research in different societies. Biological, ecological, social, and cognitive factors influencing growth and development. Family influences.</td>
</tr>
<tr>
<td>FCE 864*</td>
<td>Topics in Family and Child Ecology: Family Assessment</td>
<td>3(3-0); P: FCE 850; FCE 852 or FCE 853, R: Open only to graduate students. Theoretical, research, and clinical issues in measuring family and individual characteristics. Critique of clinical and research assessment tools.</td>
</tr>
<tr>
<td>FCE 865*</td>
<td>Topics in Family and Child Ecology: Values and Family Behavior</td>
<td>3(3-0); R: Open only to graduate students. Role of values in human development and family behavior. Theoretical approaches to the study of human values in the family context. Measurement of human values.</td>
</tr>
<tr>
<td>FCE 866*</td>
<td>Topics in Family and Child Ecology: Play in Human Development</td>
<td>2(1-0); P: FCE 810, R: Open only to graduate students. Role of play in human development. Theory related to play behavior. Management of play to optimize developmental capacity.</td>
</tr>
<tr>
<td>FCE 867*</td>
<td>Seminar in Family and Child Ecology</td>
<td>Fall, Spring, 1 to 4 credits. May renew for a maximum of 12 credits. R: Open only to graduate students. Selected courses in family relationship, family economy, human development in the family, community services, or programs for children and families.</td>
</tr>
<tr>
<td>FCE 868*</td>
<td>Laboratory and Field Experience</td>
<td>Fall, Spring, Summer. 1 to 4 credits. May renew for a maximum of 8 credits. R: Open only to graduate students in the Department of Family and Child Ecology. Supervised observation, practice, or internships.</td>
</tr>
<tr>
<td>FCE 869*</td>
<td>Master's Thesis Research</td>
<td>Fall, Spring, Summer. 1 to 6 credits. May renew for a maximum of 12 credits. R: Open only to graduate students in the Department of Family and Child Ecology.</td>
</tr>
<tr>
<td>FCE 870*</td>
<td>Advanced Marriage and Family Therapy Theories</td>
<td>Fall of odd-numbered years, 3(3-0); May renew for a maximum of 12 credits. P: FCE 830. R: Open only to graduate students. Selected theoretical perspectives in marriage and family therapy and related therapy techniques.</td>
</tr>
<tr>
<td>FCE 871*</td>
<td>Family Ecology Theory Construction</td>
<td>Fall of odd-numbered years, 3(3-0); P: FCE 810; FCE 810 or FCE 847 or FCE 850. R: Open only to graduate students. Integration and application of concepts in constructing family ecology theory. Theory development strategies.</td>
</tr>
<tr>
<td>FCE 872*</td>
<td>Qualitative Research Methods</td>
<td>3(3-0); P: FCE 801, FCE 880. R: Open only to graduate students. Research design, measurement and implementation. Theoretical and applied experience related to qualitative research design and methodology.</td>
</tr>
<tr>
<td>FCE 873*</td>
<td>Advanced Research Methods in Marriage and Family Therapy</td>
<td>1(1-0); P: FCE 880, FCE 840, 6 credits of FCE 809, FCE 893, FCE 801; FCE 810; FCE 847 or FCE 860; R: Open only to graduate students. Research design, measurement and analysis appropriate for assessing effectiveness of family therapy. Development of a family therapy research proposal.</td>
</tr>
<tr>
<td>FCE 874*</td>
<td>Topics in Family and Child Ecology (MTC)</td>
<td>Fall, Spring, Summer. 2 to 3 credits. May renew for a maximum of 12 credits. R: Open only to graduate students. Topics and problems in programs and services for families.</td>
</tr>
<tr>
<td>FCE 875*</td>
<td>Sex Therapy</td>
<td>3(3-0); P: FCE 445, approval of department. R: Open only to graduate students in the Marriage and Family Therapy emphasis of Family and Child Ecology. Major models of sex therapy utilized in marriage and family therapy. Ecology and treatment of major sexual dysfunctions.</td>
</tr>
</tbody>
</table>
### FAMILY MEDICINE

#### FM 590. Special Problems in Family Medicine
- **Fall, Spring, Summer. 1 year.**
- **May reenroll for a maximum of 6 credits, Fall only.**
- **R: Open only to graduate professional students in the colleges of Osteopathic and Human Medicine. Approval of department.**
- **Each student works under faculty direction on an experimental, theoretical, or applied problem.**
- **QA: FM 590**

#### FM 601. Clinical Practicum in Family Medicine
- **Fall, Spring, Summer. 4 to 24 credits.**
- **May reenroll for a maximum of 24 credits. R: Open only to graduate professional students in the College of Osteopathic Medicine. Units I and II.**
- **Direct involvement in a family practice emphasizing patient, office, and personnel management.**
- **QA: FM 600**

#### FM 620. Directed Studies
- **Fall, Spring, Summer. 2 to 24 credits in increments of 2 credits. May reenroll for a maximum of 48 credits. R: Open only to graduate professional students in the colleges of Osteopathic and Human Medicine. Approval of department.**
- **Individual or group projects on special problems related to family medicine.**
- **QA: FM 620**

#### FM 640. Principles of Family Medicine I
- **Fall, Spring, Summer. 1 to 6 credits. R: Open only to graduate professional students in the College of Osteopathic Medicine. Unit I: Systems Biology course or concurrently.**
- **P: Graduate courses in family medicine taught by faculty and clinical preceptors at multiple sites. Q: PHM 520 QA: FM 652 FM 682**

#### FM 650. Principles of Family Medicine II
- **Spring, 100-04. R: Open only to graduate professional students in the College of Osteopathic Medicine. Unit I: Systems Biology course or concurrently. Continuation of FM 640.**
- **QA: FM 652 PHM 520 QA: FM 672 FM 682**

### FAMILY PRACTICE

#### FMP 515. Health Care in Underserved Areas
- **Fall of even-numbered years. 2 to 3 credits. Interdepartmental with the Department(s) of Family Medicine.**
- **R: Graduate professional students in colleges of Human and Osteopathic Medicine.**
- **Principles, legal, educational issues, and health beliefs, patient attitudes, economic situations and medical problems of migrant agricultural workers.**
- **Introduction to occupational medicine in the agricultural sector.**
- **QA: FMP 602 QA: FM 610**

#### FMP 516. Migrant Worker Health Care
- **Spring. 2 to 4 credits. May reenroll for a maximum of 8 credits. Interdepartmental with the Department(s) of Family Medicine.**
- **R: Graduate professional students in colleges of Human and Osteopathic Medicine.**
- **Health beliefs, patient attitudes, economic situations and medical problems of migrant agricultural workers.**
- **Introduction to occupational medicine in the agricultural sector.**
- **QA: FMP 602 QA: FM 610**

#### FMP 520. Introduction to Sports Medicine
- **Fall, Spring. 2(2-0) interdepartmental with the Department(s) of Osteopathic Medicine.**
- **R: Graduate professional students in colleges of Human and Osteopathic Medicine.**
- **Medical care of common sports injuries. Drugs, nutrition, exercise physiology and sports psychology. Emphasis on family practice approach to sports medicine.**
- **QA: FMP 602 QA: FM 610**

#### FMP 522. Primary Care in Developing Countries
- **Fall of odd-numbered years. 2(2-0). R: Graduate professional students in colleges of Human and Osteopathic Medicine.**
- **Practical skills for medical problem solving in developing countries: physician experiences, cross-cultural training, instruction of health workers, resource allocation, coping with special challenges, e.g., malnutrition.**

#### FMP 580. Special Topics in Family Practice
- **Fall, Spring, Summer. 2 to 3 credits. May reenroll for a maximum of 6 credits. R: Graduate professional students in colleges of Human and Osteopathic Medicine.**
- **Exploration of special aspects of family practice. Possible examples include ethnicity and aging, clinical nutrition, sports medicine, death and dying, health care of women, research methods in primary care.**
- **QA: FMP 602**

#### FMP 607. Ambulatory Care Clerkship
- **Fall, Spring, Summer. 1 to 3 credits. Interdepartmental with the Department(s) of Medicine, Pediatrics.**
- **R: FMP 602 R: Graduate Professional Students in College of Human Medicine.**
- **Outpatient experience, lasting an equivalent of 36 half days and extending over a minimum of 26 weeks.**
- **Continuous and comprehensive patient care under supervision of appropriate physicians.**
- **QA: FMP 602 QA: FM 607 PH 607 MED 607**

#### FMP 610. Family Practice Clerkship
- **Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits. May reenroll for a maximum of 6 credits. R: FMP 602 R: Graduate Professional Students in College of Human Medicine.**
- **Experience in family practice in diverse settings. Emphasis on primary, continuing and comprehensive care.**
- **QA: FMP 602 QA: FM 610**

#### FMP 612. Inpatient Clerkship in Family Practice
- **Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits. May reenroll for a maximum of 6 credits. R: FMP 602 R: Graduate Professional Students in College of Human Medicine.**
- **Supervised experience in hospitals, outpatient clinics, villages and medical research centers in developing countries.**
- **QA: FMP 602 QA: FM 615**

#### FMP 617. Sports Medicine Clerkship
- **Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits. May reenroll for a maximum of 6 credits. R: FMP 602 R: Graduate Professional Students in College of Human Medicine.**
- **Clinical elective experience concentrating on the primary care aspects of sports medicine. Includes care of acute and chronic sports injuries, mostly of college level athletes.**
- **QA: FMP 602 QA: FM 617**

### FINANCE AND INSURANCE

#### FI 311. Financial Management
- **Fall, Spring, Summer. 3(3-0). R: ACC 202 or ACC 210 or ACC 251H or HRI 302. R: Open only to juniors and seniors in the College of Business and in programs that list FI 311 as a catalog requirement.**
- **Optimal management of the firm’s assets and financing requirements. Analysis of financial statements, financial markets, risk, valuation, long-term and short-term financing and investment. International and ethical implications.**
- **QA: ACC 202 OR ACC 210 OR ACC 251H OR HRI 302 QA: FI 391**

#### FI 329. Introduction to Investments
- **Fall, Spring, Summer. 3(3-0). R: FI 311. R: Open only to majors in the College of Business.**
- **Theoretical and empirical analyses of securities. Risk and return formation. Security analysis and concepts of market efficiency. Common stocks, bonds, options, futures, and international securities.**
- **QA: FI 391 QA: FI 392**