692. Principles of Family Practice VII

Summer. 1(0-4) Admission to medical school and approval of department.

Continuation of 682.

695. Principles of Family Medicine VI

Summer. 4(4-0) Admission to medical school and approval of department.

Continuation of 685.

FAMILY PRACTICE* FMP

College of Human Medicine

500. Preceptorship Training

Fall, Winter, Spring, Summer. 1 to 3 credits. One year of medical school. Interdepartmental with and administered by the Department of Human Medicine.

Field experience in primary care taught by primary care physicians throughout the state to medical students from Michigan State University, University of Michigan and Wayne State University.

580. Special Topics in Family Practice

Fall, Winter, Spring, Summer. 3 to 6 credits. May re-enroll for a maximum of 18 credits. Approval of department.

A course designed to provide students the opportunity to explore and study special aspects and modes of family-oriented health care delivery.

610. Family Practice Clerkship

(HM 610.) Fall, Winter, Spring, Summer. 8 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602.

A clerkship in a model family practice unit with graded responsibility and supervision in the care of families and their medical problems with emphasis on primary, continuing and comprehensive care.

FISHERIES AND WILDLIFE F W

College of Agriculture and Natural Resources

100. Introduction to Fisheries and Wildlife

Fall. 1(1-0)

Fisheries and wildlife as a profession. Academic and curricular needs to meet professional objectives, using current management problems as a focus for discussion.

IDC. Resource Ecology and Man

For course description, see Interdisciplinary Courses.

202. Soils and Man's Environment

Winter. 3(3-0) Interdepartmental with the departments of Resource Development and Crop and Soil Sciences, and administered by the Department of Crop and Soil Sciences.

Use of soil-water resources in a technological society as it relates to environmental quality. Nature of pollution problems and their possible solutions. Food production and world population.

*Established July 1, 1974.

301. Fish and Wildlife of North America

Winter. 5(3-4) B S 212 or approval of department.

Comparative study of fish and wildlife groups in North America, their significant life history stages, morphology, migrations, habitats and populations. Common species are identified in the laboratory.

305. Principles of Fisheries and Wildlife Management

Spring. 3(3-0) IDC 200 or approval of department. Not open to majors in fisheries-limnology or wildlife-ecology options.

Ecological concepts in management. Effects of regulations, refuges, stocking, species introduction, habitat manipulation, artificial feeding, genetic improvement, land use and control of predators, diseases and competitiors on the production of fish and game.

328. Vertebrate Pest Control

Fall. 3(3-0) B S 212 or approval of department.

The role wild animals play as a damaging agent to man's interests; the concepts of damage and control; damage control techniques. Field trip.

340. Wildlife Biometry

Winter. 4(3-2) MTH 111, six credits in Fisheries and Wildlife.

Survey of statistical formulas, methods and applications of statistics to problems in fisheries and wildlife.

374. Biological Oceanography

Winter. 3(3-0) B S 212 or approval of department.

Biology of marine animals, with emphasis on physical, chemical and biological factors affecting their abundance and distribution.

402. Environmental Conservation Education

Fall, Winter, Spring, Summer. 4(3-2) Education majors or approval of department.

Nature, distribution and interrelationships of natural resources dictating the quality of man's environment. Principles of resource use, study of natural objects and techniques of teaching in and about the environment.

404. Fisheries and Wildlife Problems

Fall, Winter, Spring, Summer. 1 to 5 credits. May re-enroll for a maximum of 12 credits. B S 212; 6 credits of fisheries and wildlife; approval of department.

To give undergraduate majors an opportunity to study special topics in fisheries and wildlife.

420. Ecology of Animal Parasites

Summer. 6 credits. B S 212 or approval of department. Given at W. K. Kellogg Biological Station. Interdepartmental with the departments of Microbiology and Public Health and Zoology and administered by the Department of Microbiology and Public Health.

Parasitism of animals by protozoa, helminths and anthropods with emphasis on the interrelationships of host-parasite associations with the natural environments.

424. Wildlife Population Analyses

Spring. 4(3-2) IDC 200 or approval of department.

Population mensuration; reproductive and survival rates; sex and age determination; handling and marking methods.

425. Wildlife Habitat Analyses

Spring. 4(2-4) BOT 450 or ZOL 389 or FOR 220.

Evaluation of environmental factors affecting wildlife species; food and cover measurements. Determination of limiting factors.

426. Ecology of Migratory Birds

Fall. 4(2-4) ZOL 461 or approval of department.

Ecological, behavioral, and physiological characteristics affecting population parameters of migratory birds and applications of these relationships to the management of migratory wildlife resources.

427. Wildlife Biology and Management

Winter. 4(2-4) 424; ZOL 389 or BOT 450.

Ecology and management of resident wildlife on farm, forest and range lands.

450. Natural Resource Administration

Fall, Spring. 4(4-0) Seniors. Interdepartmental with the departments of Forestry, Parks and Recreation Resources and Resource Development and Natural Resources. Administered by the Department of Forestry.

Concepts and methods of administering wildland properties. The legal, economic and social environment. Benefit-cost analysis of management changes. Unit organization, personnel management and accounting. Presents a systems view of administration.

455. Natural Resource Economics

Winter. 4(4-0) 450 or approval of department. Interdepartmental with the departments of Forestry, Park and Recreation Resources, Resource Development, and Natural Resources. Administered by the Department of Forestry.

Basic economic and political principles and techniques that govern the production and consumption of forest land products, including basic forest valuation procedures.

471. Ichthyology

Spring. 3(2-3) 301 or ZOL 305 or 314. Interdepartmental with Zoology Department.

Classification and natural history of fishes. Emphasis on food, game, and forage fishes.

473. Fishery Biology and Management

Fall. 5(3-3) ZOL 471.

Biology of fishes with special reference to distribution and natural history, and application of this knowledge to problems of obtaining maximum return from fishery resources.

475. Fish Culture

Spring. 3(3-0) 473.

Artificial propagation of freshwater fish including hatchery management, nutritional and environmental requirements, disease and parasite control and intensive fishery management. Utilization of hatchery stock in fisheries management.

476. Limnology

Winter. 3(3-0) B S 212. Interdepartmental with the Zoology Department.

Ecology of lakes and streams with special reference to physical, chemical, and biological factors affecting their productivity.

477. Limnological Methods

Winter. 3(0-9) 476 concurrently; ZOL 481; ENT 301, 302 recommended. Interdepartmental with the Zoology Department.

Methods and instruments of limnological field investigation on lakes and streams.

484. Outdoor Environmental Education

Fall. 4(3-2) Juniors or approval of department.

Using the outdoors as a teaching laboratory for ecological studies of plant and animal communities. Designed primarily for secondary teachers.

485. Environmental Conservation Program Design

Winter. 3(3-0) Seniors or approval of department.

Materials and methods for integrating environmental conservation into educational programs in schools, nature centers, youth groups and communities.

801. Seminar in Fisheries and Wildlife

Fall, Winter, Spring. 1(1-0)

Graduate problems and current developments of importance.

802. Advanced Topics

Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 15 credits. Approval of department.

Study of selected advanced topics in detail and depth.

821. Advanced Stream Ecology

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

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.

830. Environmental Requirements of Fish

Winter. 3(3-0) Approval of department.

Adaptations and responses of fish to environmental changes; research methods for evaluating environmental limitations and effects of pollutants on fish growth, reproduction and survival. Applications for developing water quality criteria.

871. Ecology of Fishes

Summer. 6 credits. Approval of instructor or ZOL 389 or F W 473. Given at the W. K. Kellogg Biological Station. Interdepartmental with and administered by the Department of Zoology.

Exploration of ecological problems with particular emphasis on growth, food and habitat selection, population biology and niche relations. Field and experimental investigations of fish communities.

874. Advanced Biological Limnology

Fall. 3(4-0) 477, or approval of department.

Historical and current contributions to concepts of community structure, energy flow and materials cycling in aquatic eco-systems.

875. Chemical Limnology

Winter. 4(3-3) 476, 477 or approval of department.

Application of analytical chemistry concepts and technologies to fundamental chemical mechanisms in natural and polluted water systems. Special consideration given to selected heterogeneous equilibria.

899. Research

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

940. Quantitative Wildlife Ecology

Spring. 3(3-0) Approval of department.

Fundamentals of population demographics. Rates of increase, dynamic and static life tables, logistic theory, the Leslie matrix model, age specific and time specific parameters. Current hypotheses on mechanisms promoting population stablity.

999. Research

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

FOOD SCIENCE AND HUMAN NUTRITION

College of Agriculture and Natural Resources
College of Human Ecology

Food Science FSC

101. Food and Society

Fall, Winter. 3(3-0) Interdepartmental with Human Nutrition and Foods.

Analysis of the scientific, social and environmental aspects of food in determining the quality of man's life. Introduction into the principles of food preservation and safety.

211. Introduction to Food Science

Spring. 3(3-0)

Modern food processing, world food problems, and the basic characteristics of processed foods.

215. World Food Issues

Spring. 3(3-0) Interdepartmental with and administered by the Department of Geography.

Food resources as related to world distributions of population, soil, water, fuel and minerals. Special attention to urbanization, irrigation, and future food needs and global constraints.

223. Commercial Food Processing Systems

Fall. 3(3-0) Interdepartmental with and administered by Physical Systems in Agriculture and Natural Resources.

Processes and systems used in handling, processing and distribution of food; the need for processing systems and their influence on food quality.

242. Meats, Poultry and Fishery Products I

Fall. 3(2-2) Interdepartmental with the Animal Husbandry Department.

Principles of evaluation and nutritive value. Identification of grades and cuts of beef, pork, lamb and poultry products.

300. Dairy Products

Spring. 3(2-2)

Composition, use, classification and market grades, methods of storage and factors affecting keeping quality of dairy products.

311. Food Processing and Preservation

Winter, Summer. 4(4-0) CEM 132 or HRI 245 or approval of department; not open to majors in Food Science.

Effects of processing, packaging and preservation on the quality of foods. Demonstrations of use of ingredients, evaluation of products and results of various processing methods.

331. Physical Principles of Food Processing

Fall, Winter. 4(3-2) 211; MTH 109; PHY 239 or approval of department.

Food preservation by heat, low temperature, dehydration and radiation.

332. Biological Principles of Food Processing

Winter. 4(3-3) MPH 200 or approval of department.

Biological problems related to food processing including waste disposal, sanitizing and bactericidal compounds, pesticides and residues, plant and animal growth regulators, radioactive elements, preservatives and toxicology of additives.

333. Chemical Principles of Food Processing

Spring. 4(3-3) 211 and CEM 241 or approval of department.

Chemical changes in foods that affect the texture, color, flavor, odor, stability, and nutritive quality during processing and storage.

400. Milk Processing Technology

Fall. 4(3-3) CEM 132 or approval of department.

The fluid milk industry. Composition, quality, sanitation, nutritive value, processing, packaging and distribution of milk and milk products.

401. Industrial Food Fermentations

Fall. 3(3-0) 440 and organic chemistry or approval of department.

Physical, microbiological and chemical procedures in utilizing microbial cultures in controlled fermentations of foods and food constituents.

402. Chemistry and Technology of Lipids

Winter. 3(2-3) One term organic chemistry.

Chemical and physical properties of edible fats and oils. Refining and processing of lipids into margarine, butter, shortening and salad oils. Chemical methods for analysis of lipids.

404. Dehydrated Foods

Spring. 3(2-3) 331; 333 concurrently or approval of department.

Concentration and dehydration of foods by roller, spray, and freeze drying and foam, puff and tunnel drying. Stability and nutritional aspects of dehydrated foods.

405. Chemistry and Technology of Dairy Products Manufacturing

Winter. 3(2-3) May re-enroll for a maximum of 6 credits if a different topic is taken. 400 or approval of department.

Physical, chemical and microbiological factors in the processing of dairy products. Ice cream, sherbets, ice milks and special frozen desserts are studied in odd-numbered years; cheese, and related dairy products in even-numbered years.

421. Food Plant Management

Spring. 3(2-3) Seniors or approval of department.

Efficiency concepts, merchandising, personnel utilization and organization.