

Description of Courses (Credit Hours are given in parentheses)

Core Courses

AGSC 600, 601, 602 Agricultural Sciences Seminar (1)

Students report on and discuss recent literature and current investigations relative to the Food and Agricultural Sciences and preparation of reports on selected topics. Repeatable credit. Minimum of three (3) credit hours required.

AGSC 605 Statistics in Agricultural Research (3)

Emphasis is placed on techniques and application of statistical and experimental design, data acquisition, analyses, interpretation and presentation as it applies to Agricultural Sciences.

AGSC 691 Research Methodology in the Agricultural Sciences (3)

Students will learn the basic principles of research methodology. Emphasis will be placed on techniques used in identifying problems, forming hypotheses, constructing and using data-gathering instruments, designing research studies, and employing statistical procedures to analyze data.

AGSC 799 Master's Thesis Research (1-6)

Agricultural Economics Courses

AGEC 423 Marketing Agricultural Products (3)

Discussions in this course emphasize characteristics of the demand for and supply of farm products, alternative marketing channels, services and costs involved in marketing.

AGEC 453 Agricultural Finance (3)

Agricultural finance in farm firms and financial institutions; emphasizing financial reports and analysis, liquidity and risk; use of credit and other financial alternatives to acquire control of farm resources; credit sources and acquisition of capital; decision-making.

AGEC 463 Agricultural Policy (3)

It explains current policy issues, policy instruments and choices in U.S. agriculture. It also describes the economic characteristics and problems of agriculture, evolution and significance of agricultural policies, the international dimension and domestic policies that affect agriculture.

AGEC 613 Quantitative Methods in Agricultural Economics (3)

The course addresses formulation, estimation, and testing of economic models, interaction between economic problems and specification of econometric models.

AGEC 623 Advanced Agricultural Marketing (3)

Emphasis in this course is placed on marketing theory, market structure conduct and performance, economics of control, interregional trade theory, governmental regulation and policy, and bargaining in agricultural markets.

AGEC 633 Advanced Agricultural Price Analysis (3)

Topics in this course include demand and price structures, price discovery, time series and agricultural price research methods, techniques for evaluating marketing behavior, market legislation and market development.

AGEC 653 Advanced Agricultural Finance (3)

Financial structure of agriculture, firm financial planning and management, financial intermediation in agriculture and agricultural finance in developing countries are the topics that are discussed in this course.

AGEC 663 Agricultural Policy and Rural Resource Development (3)

It focuses on current issues in agricultural policy and rural resource development, application of welfare criteria and economic analysis to agriculture, food and rural development problems and policies.

AGEC 680 Individual Studies in Agricultural Economics (1-3)

The student is required to produce a scholarly paper, which provides a critique of a selected topic in Agribusiness related areas. Can be used to satisfy the "creative component" requirement for students pursuing the non-thesis option.

AGEC 713 Economics of Agricultural Production (3)

Students learn about the use and application of production economics in the agricultural industry through graphical and mathematical approaches.

AGEC 773 Seminar/Group Study in Research Methods (3)

Students will be required to develop and present a thesis prospectus for this course, to include principles and application of the scientific method in developing a research proposal, data collection management and analysis, and thesis writing.

AGEC 813 Advanced Microeconomic Theory (3)

This is an advanced treatment of the theory of prices and markets. Discussions focus on analysis of the theory of the household and the firm, concepts of general equilibrium and welfare economics, and principles of efficient and equitable allocation of resources.

AGEC 814 Advanced Macroeconomic Theory (3)

This is an advanced treatment of an economy's overall performance, including fluctuations in economic activity, causes of inflation and unemployment, impact of fiscal and monetary policies on the economy's aggregate output.

Agriculture and Extension Education Courses**AEED 423 Extension Education (3)**

The agricultural extension service as an educational agency. The history, philosophy, objectives, policy, organization, legislation and methods used in extension work.

AEED 426 Development and Management of Extension Youth Program (3)

Designed for present and prospective state leaders of extension youth programs. Program development, principles of program management, leadership development and counseling, science, career selection and citizenship in youth programs, field experience in working with low income families' youth, and urban work.

AEED 497 Conservation of Natural Resources (3)

Study of the state's natural resources: soil, water, fisheries, wildlife, forests and minerals. Natural resources problems and practices. Extensive field study. Methods of teaching conservation included.

AEED 600 Seminar I (1)

Reports and discussion of recent literature and current investigations relative to the Agricultural Sciences.

AEED 625 Administration and Supervision of Agriculture Programs (3)

Management principles and practices of planning, organizing, directing, staffing and evaluating as applied to administration and supervision of programs in agriculture.

AEED 626 Program Development in Agriculture and Extension Education (3)

Concepts in program planning and development. Framework for analysis of program and implementation in the education and extension services.

AEED 627 Program Evaluation in Adult and Continuing Education (3)

Designed for those who provide adult instruction in community colleges, university outreach programs, businesses and industries. This course will help you to become more effective in evaluating educational programs, and will build upon current levels of instructional or administrative expertise in the adult education field.

AEED 630 Teaching – Learning in Adult and Continuing Education (3)

This course deals with theory, principles and procedures of teaching and learning in adult and continuing education.

AEED 663 Development Leadership (3)

Principles and practices of leadership development. Organization, implementation, and evaluation of individual and group leadership development in agriculture.

AEED 691 Research Methodology in the Agricultural Sciences (3)

Principles, applications and techniques used in identifying problems, forming hypotheses, developing and using data gathering instruments, designing research studies, employing statistical procedures to analyze data and organizing materials for thesis writing.

AEED 699 Special Problems (1-3)

Emphasis on a specific topic within the student's area of interest. Choice of topic, hours and credit must be made in consultation with the instructor prior to registration. A written report and an oral presentation of the topic studied will be required.

AEED 789 Special Topics (1-3)

May be repeated to a maximum of nine credits provided content is different each offering.

AEED 798 Seminar in Research (1-8)

Problems in the organization, administration and supervision of the several agencies of extension and/or agricultural education. Repeatable to a maximum of eight credit hours.

AEED 799 Master's Thesis Research (1-6)**Animal and Poultry Science Courses****ANPT 424/624 Animal and Avian Health and Diseases (4)**

The study of parasitic, viral, bacterial and protozoal diseases of mammalian and avian species will be covered. Methods of disease prevention, control and eradication will also be discussed.

ANPT 611 Poultry Diseases and Hygiene (4)

Students will study the parasitic, viral, bacterial and protozoan diseases of domestic poultry. Methods of disease prevention, control and eradication will also be discussed.

ANPT 614 Advanced Animal Avian Physiology (4)

This course covers an in depth presentation of major organ systems and their interaction in the maintenance of homeostasis.

ANPT 621 Applied Poultry Nutrition (3)

Students will learn how to apply the basic principles of nutrition to the avian species. Nutritional requirements of poultry, deficiency diseases, least cost formulations and effects of environment on avian nutrition will also be discussed.

ANPT 622 Analytical Laboratory Methods (2)

The application of analytical laboratory techniques used in biomedical research will be explored.

ANPT 634 Advanced Animal and Avian Diseases (4)

Students will study the nutritional and metabolic diseases and the isolation and cultivation of macro and microscopic parasites inclusive of gross and microscopic pathology.

ANPT 642 Advanced Non-Ruminant Nutrition (3)

The application of basic principles of nutrition to commercial non-ruminant animals will be discussed. Factors affecting nutritional requirements, effects of environment on nutrition and least cost formulations will also be covered.

ANPT 680 Individual Studies in Animal and Poultry Science (1-3)

The student is required to produce a scholarly paper, which provides a critique of a selected topic in Animal and Poultry Science. This can be used to satisfy the "creative component" requirement for student pursuing the non-thesis option.

Food and Nutrition Courses**NUTD 600 Pre-professional AP-4 Practice Program in Dietetics (1-5)**

This is an in-service course restricted to dietitians.

NUTD 640 Nutrition & Human Development (3)

The course covers the role of nutrients in physiological systems and biochemical processes as related to the perspective of human growth and development across the lifespan.

NUTD 642 Nutritional Counseling (3)

Assessment, planning, implementation and evaluation of nutritional counseling and educational techniques are examined.

NUTD 644 Special Problems in Nutrition (3)

This is an assessment of nutritional status and needs of various groups such as the aged, infants and children and adolescents. Emphasis is placed on development and management of nutrition programs to meet specific needs through the actions of community agencies.

NUTD 646 Clinical Nutrition (3)

Metabolism in disease and the adaptation of diet in the treatment or prevention of disease are studied.

NUTD 650 Intermediary Metabolism (3)

The course covers the major routes of carbohydrates, lipids and protein metabolism with particular emphasis on metabolic shifts and their detection and significance.

NUTD 654 Nutritional Biochemistry (4)

The course reviews recent developments in nutritional sciences designed to acquaint students with laboratory procedures in nutritional biochemistry and physiology, including the identification and measurements of nutrients and their metabolites in foods, tissue and body fluids and human and animal experiments in nutrition. Special emphasis is placed on the relationship between biochemistry and nutrition.

NUTD 656 Nutrition Laboratory (1-3)

Digestibility studies are conducted with ruminant and monogastric animals. The proximate analysis of various food products and feeding trials are used to demonstrate classical nutritional deficiencies in laboratory animals.

NUTD 660 Protein and Amino Acids in Nutrition (3)

This is an advanced study of the roles of amino acids in nutrition and metabolism. Protein digestion, absorption, anabolism, catabolism and amino acid balance are examined.

NUTD 664 Vitamin and Mineral Metabolism (3)

This is an advanced study of the fundamental role of vitamins in nutrition, including chemical properties, absorption, metabolism, excretion and deficiency syndromes. Basic nutritional data on minerals are presented.

NUTD 670 Advanced Food Safety (3)

The course emphasizes current trends in a number of areas: food safety and emerging food borne pathogens, regulating food safety, traditional and rapid microbiological methods, relationship of environmental factors to occurrence, growth and survival of microorganisms in foods, mechanisms of control, HACCP, risk assessment, sanitation and food safety education. Special emphasis is placed on actual food borne outbreaks.

Prerequisite: BIOL 301 or AMIC 324 or permission of the instructor.

NUTD 680 Individual Studies in Food & Nutrition (1)

The student is required to produce a scholarly paper which provides a critique of a selected topic in Food and Nutrition. This can be used to satisfy the "creative component" requirement for students pursuing the non-thesis option.

Natural Resource Sciences Courses**NRES 683 Principles of Watershed Management (3)**

A course designed to acquaint students about how watersheds work, how they are managed, and how their management affects the ecology of the Chesapeake Bay, Coastal Bays and the Atlantic Ocean.

NRES 404/BIOL 404 Conservation Biology (3)

This course is a multi-disciplinary approach to conservation of natural resources. Examination of basic genetic and ecological principles, importance of biodiversity, concept of island biogeography as it applies to course topic, endangered species conservation, and the value of protected areas. Strong emphasis will be placed on sociological, economic, and political components of conservation. Students will prepare three written reports on current conservation issues.

NRES 673 Ornithology (3)

This course covers general biology, taxonomy, and natural history of birds, with an emphasis on North American families.

AGRN 483 Principles of Geographic Information Systems (3)

This course is designed to provide students with an overview of the applicability and use of Geographic Information Systems (GIS); students will become competent with ArcView ©, a GIS software package from Environmental Systems Research Institute (ESRI), Inc. Students will also learn the basics of data management, data accuracy, spatial analysis, and data presentation.

ANPT 403/NRES 403 Advanced Aquaculture (3)

The course covers the fundamentals of commercial fish and other marine animal production, including principles of pond and tank production, management, nutrition and disease.

BIOL 431 Mammology (4)

This course is a detailed investigation of mammal biology, with emphasis on special physiological and ecological adaptations, ecological specializations and biogeography of mammals.

ENVS 684 Natural Resource Management (3)

Discussions of the availability, use, abuse, depletion and pollution of various natural resources humans need for survival. The cost-benefit analyses and systems management concepts for natural resource conservation enabling us to save the "earth" for future generations will be addressed.

BIOL 688F Fish Physiology (1-4)

This is an overview of fish physiology, which fishery biologists and others can supplement with readings in current texts, reviews and research articles. Applicable points of general and comparative physiology are included. Summaries of important anatomic considerations are included where relevant, but the course is primarily for those who have already completed courses in general physiology, chemistry, biochemistry and fish anatomy. An IVN offered course.

CHEM 670 Advanced Biochemistry (3)

The classification, chemistry and metabolism of protein, amino acids, carbohydrates and lipids are covered.

NRES 799 Master's Thesis Research (1-6)**Plant and Soil Science Courses****AGRI 615 Advances in Plant Genetics and Breeding (3)**

Discussion of special topics in genetics and breeding for resistance to pest and other stress factors are covered.

AGRI 625 Plant, Soil-Water Relationships (3)

This course involves a study of soil biology, ecology, root morphology and anatomy affecting mineral nutrition and plant water relations.

AGRI 638 Advanced Horticultural Crop Production (3)

Physical, chemical and biological factors affecting horticultural crops will be covered. Emphasis will be placed on post-harvest physiology.

AGRI 684 Recombinant DNA Technology (3)

This is a laboratory course to introduce the basic principles of gene cloning, give essential background on working with E. coli, utilize different cloning systems and employ methods utilized for DNA sequencing.

AGRN 423/653 Soil Fertility (3)

This course provides an in-depth knowledge of relationships of soil mineralogy, texture, organic matter and pH to soil fertility. The use of organic and commercial fertilizers in crop production, and their effects on the environment are emphasized and explored.

AGRN 623 Advanced Soil Chemistry (3)

This course provides an in-depth knowledge of clay-mineral properties and use of x-ray diffraction and electron micrographic analysis in their identification. The impact of clay-colloid chemistry in every day life and special topics in soil chemistry related to clays and clay minerals is also explored.

AGRN 633 Soil Water Pollution (3)

This course is designed to provide students with knowledge of the reaction and fate of pesticides, agricultural fertilizers, industrial and animal wastes in soil and water. Their relationship to the environment is heavily emphasized.

PLSC 674 Plant Pathology (4)

The course will examine causes of diseases in agronomic and horticultural crops to include symptom and sign recognition, isolation, enumeration and management of diseases in the landscape and field crops. Lab exercises will include preparation of a journal-type manuscript based on an individual research project.

PLSC 603 Ecology of Plant-Microbial Systems (3)

The course provides an in-depth study of the degradation of pollutants in plant-microbial systems and the role of plant-microbial interaction on the attenuation of environmental contaminants. Plant and microbial-mediated mechanisms of pollutant transformation will be covered. The role the rhizosphere as a unique environment for the detoxification of aggressive compounds will be emphasized.

PLSC 606 Crop Physiology and Ecology (3)

This course involves in depth discussion of ecological factors affecting crop growth, development and productivity.

PLSC 680 Individual Studies in Plant and Soil Science (1-3)

The student is required to produce a scholarly paper, which provides a critique of a selected topic in Plant and Soil Science. This can be used to satisfy the "creative component" requirement for students pursuing the non-thesis option.