

## Course Description

Prerequisite: CRSCI 106  
3 hours lecture a week  
Credit: 3 units

### **AGRIC 100. PRINCIPLES OF ENVIRONMENTAL SCIENCE AND MANAGEMENT**

Principles of environmental science applied in the study of structures, functions, energetic and nutrient cycle in terrestrial and aquatic environments including nature and stability of the atmosphere with emphasis on climate change.

Prerequisite: BOT 100/ZOO 100  
3 hours lecture a week  
Credit: 3 units

### **AGRIC 101. INTRODUCTION TO AGRICULTURE**

Overview of agriculture with emphasis on Philippine agriculture

Prerequisite: none  
1 hour lecture a week  
Credit: 1 unit

### **AGRIC 102. BRIDGING PROGRAM I**

Skills acquisition in animal science, crop science, crop protection, soil science and agricultural economics in preparation for the Certificate in Agriculture Science.

Prerequisite: none  
1 hour lecture a week  
Credit: 1 unit

### **AGRIC 103. BRIDGING PROGRAM II**

Skills acquisition in the field of animal science and crop science in preparation for the National Certificates (CHED-TESDA interface).

Prerequisite: none  
1 hour lecture a week  
Credit: 1 unit

### **AGRIC 105. SUSTAINABLE AGRICULTURE SYSTEMS**

Principles and concepts of sustainable agriculture, energetics of plant and animal production, integrated nutrient and pest management and other sustainable agriculture systems

Prerequisite : AGRIC 101  
3 hours lecture a week  
Credit: 3 units

### **AGRIC 106. INTRODUCTION TO ECOLOGICAL AGRICULTURE**

Principles and practices of ecological agriculture

### **AGRIC 110. PLANT PHYSIOLOGY**

Photosynthesis, respiration, nutrition, water relations, transport of minerals, growth and development of plants

Prerequisite; BOT100, CHEM 200  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

### **AGRIC 115. GENETICS**

Mechanism of heredity and variations molecular genetics, cytogenetics, quantitative and evolutionary genetics

Prerequisite; STAT 200  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

### **AGRIC 120. FUNDAMENTALS OF AGRICULTURAL ENTREPRENEURSHIP**

Entrepreneurship and its role in decision making, management procedures, techniques, and laws and regulations in establishing small/medium scale agribusiness enterprises.

Prerequisite : AGMGT 100  
3 hours lecture a week  
Credit : 3 units

### **AGRIC 121. BIOTECHNOLOGY AND SOCIETY**

Biotechnology and its techniques; genetically modified organisms regulatory procedures; biotechnology products labeling and their impact on humans and the environment (biosafety); intellectual property rights and international and local regulations affecting biotechnology

Prerequisite: ANSCI 101, CRSCI 106  
3 hours lecture a week  
Credit : 3 units

### **AGRIC 125. METHODS OF AGRICULTURAL RESEARCH**

Qualitative and quantitative methods in the conduct of agricultural research.

Prerequisite : STAT 200  
4.5 hours a week (2 lec, 2.5 lab)  
Credit : 3 units

### **AGRIC 399a. SEMINAR I**

### **AGRIC 399b. COLLOQUIUM**

### **AGRIC 399c. SEMINAR II**

**AGRIC 400a/b. SPECIAL TOPICS**  
**AGRIC 405a/b. THESIS 1/PRACTICUM 1**  
**AGRIC 405a/b. THESIS 2/PRACTICUM 2**

### **AGRICULTURAL EXTENSION EDUCATION**

#### **EXED 135. AGRICULTURAL EXTENSION TEACHING METHODS AND COMMUNICATION**

Principles and methods of extension communication in agriculture.

Prerequisite: none  
3 hours lecture a week  
Credit: 3 units

#### **EXED 140. MANAGEMENT OF EXTENSION PROGRAMS**

Principles and practices of program development planning, implementation, monitoring and evaluation for sustainable rural development.

Prerequisite: EXED 135  
3 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

#### **EXED 300. PROGRAM PLANNING IN AGRICULTURAL AND EXTENSION EDUCATION (AEE)**

Credit: 3 units

Considerations and procedures for planning programs in agricultural education, objectives and evaluation of community programs; use of advisory group; organization and use of facilities in extension programs.

Prerequisite: EXED 140  
3 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

#### **EXED 305. ORGANIZATIONAL AND ADMINISTRATIVE LEADERSHIP IN AEE**

Organizational and administrative leadership concepts, skills and values in relation to agencies, organizations and institutions engaged in the implementation of AEE programs.

Prerequisite: EXED 140  
3 hours lecture a week  
Credit: 3 units

#### **EXED 310. EVALUATION IN AGRICULTURAL AND EXTENSION PROGRAMS**

Evaluation principles, models and procedures used in developing and analyzing AEE programs; role of comprehensive evaluation in needs assessments, program planning, implementation and the

marketing of outcomes to major stakeholders; designs for evaluating AEE programs.

Prerequisite: EXED 300  
3 hours lecture a week  
Credit: 3 units

#### **EXED 315. POLICY DEVELOPMENT IN AGRICULTURAL AND EXTENSION PROGRAMS**

Examination and analysis of government legislations and department administrative orders that have impacted AEE; methods and techniques of developing and influencing public policies and programs with emphasis in agricultural, human resource, and educational policy.

Prerequisite: EXED 305  
3 hours lecture a week  
Credit: 3 units

#### **EXED 320. TRENDS AND ISSUES IN AEE (Special Topic Course)**

Scientific, political, demographic, social, educational, technological and environmental trends and issues that contribute to the future structure and operation of agricultural and extension programs in the country.

Prerequisite: EXED 135  
3 hours lecture a week  
Credit: 3 units

### **AGRICULTURAL MANAGEMENT**

#### **AGBUS 100. INTRODUCTION TO AGRIBUSINESS**

Comprehensive understanding of agribusiness, its nature, scope, importance and relationship to the general economy.

Prerequisite : none  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 105. CONCEPTS AND DYNAMICS OF MANAGEMENT**

Overview of the issues that affect the initiation, organization, and management of agribusiness enterprises in today's society which is characterized by rapid change in the economic, social, technological and cultural environments.

Prerequisite : none  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 110. HUMAN BEHAVIOR IN ORGANIZATION**

Structure and functions of organizations and the behavior of people in them as they relate to the internal and external environment of the organization.

Prerequisite : none  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 115. INTRODUCTION TO MANAGEMENT SCIENCE**

Mathematical methods or quantitative techniques, decision-making theories, and models used in business operations.

Prerequisite : AGMGT 100, AGBUS 100,  
MATH 100  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 200. ENTREPRENEURSHIP**

Implementation and management of small agribusiness projects.

Prerequisite : AGRIC 120  
240 hours  
Credit : 3 units

#### **AGBUS 205. AGRIBUSINESS LAWS AND POLICIES**

Laws and policies affecting agribusiness firms; public programs in agriculture.

Prerequisite : AGMGT 100  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 210. MANAGERIAL ACCOUNTING**

Accounting concepts, principles applied to merchandising and manufacturing operations; development and use of accounting information for managerial planning and control.

Prerequisite: AGMGT 115  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

#### **AGBUS 215. MARKETING MANAGEMENT**

Organization, operation and administration of markets, marketing policy formulation and implementation.

Prerequisite : AGBUS 100  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 220. HUMAN RESOURCE MANAGEMENT**

Concepts, theories, principles and practices involved in the management of human resources in an organization.

Prerequisite : AGBUS 100, PSYCH 100  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 225. INTERNATIONAL MARKETING**

Theories and principles of international trade; opportunities, problems, policies and trends in the global market.

Prerequisite : AGBUS 215  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 230. MANAGERIAL ECONOMICS**

Application of theories, tools and findings of economic analysis in managerial decision making in all organizations.

Prerequisite : AGMGT 205  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 235. PROJECT FEASIBILITY STUDY**

Systems approach in project development and management; preparation and appraisal of project feasibility studies.

Prerequisite : AGRIC 120  
4.5 hours a week (2 lec, 2.5 Lab)  
Credit : 3 units

#### **AGBUS 240. FINANCIAL MANAGEMENT**

Short and long range financial planning and control of agribusiness organizations.

Prerequisite : AGBUS 105  
3 hours lecture a week  
Credit : 3 units

#### **AGBUS 245. AGRIBUSINESS RESEARCH METHODS**

#### **AGBUS 250. PRODUCTION AND OPERATIONS MANAGEMENT**

Operations research techniques as it applies to production decision making environment.

Prerequisite: MATH 210, AGBUS 115  
3 hours lecture a week  
Credit: 3 units

#### **AGBUS 255. INVESTMENT MANAGEMENT**

Basic principles of security analysis and analytical functions and operations of the security markets, portfolio management and formulation of investment program.

Prerequisite: AGBUS 240  
3 hours lecture a week  
Credit: 3 units

**AGBUS 260. STRATEGIC MANAGEMENT**

Fundamental concepts and tools in policy setting or strategy formulation with emphasis on how agribusiness firms can develop/improve its sustainable competitive advantage in the local and global market.

Prerequisite: AGBUS 215, 220, 240, 250  
3 hours lecture a week  
Credit: 3 units

**AGBUS 398. SEMINAR IN AGRIBUSINESS**

Review and discussion of current developments in agribusiness industries.

Prerequisite: Senior Status  
1 hour lecture a week  
Credit : 1 unit

**AGBUS 399. CASE STUDY**

Analyzing and writing of cases related to enterprise operation, organization and management.

Prerequisite: AGBUS 200, AGBUS 205,  
AGBUS 215, ENGL 125  
3 hours a week (2 lec, 2.5 lab.)  
Credit: 3 units

**AGBUS 400. INTERNSHIP**

Exposure to operations and management practices in all facets of an enterprise; case study manuscript preparation.

Prerequisite: AGBUS 399  
240 hours  
Credit: 6 units

**AGECON 200. BASIC ECONOMETRICS**

Nature estimation and inference of single equation regression models applied in the analysis of economic problems.

Prerequisite : AGMGT 200  
4.5 hours a week (2 lec, 2.5 lab)  
Credit : 3 units

**AGECON 205. NATURAL RESOURCE ECONOMICS**

Basic principles in the allocation of natural resources; economic role of natural resources in growth and development.

Prerequisite : AGMGT 205  
3 hours lecture a week  
Credit : 3 units

**AGECON 205a. FARM COOPERATIVES**

History, development, structural organization and operation of cooperatives.

Prerequisite : AGMGT 100  
3 hours lecture a week  
Credit : 3 units

**AGECON 215. AGRICULTURAL MARKETING AND TRADE**

Trade patterns of agriculture products; national and international trade policies related to development.

Prerequisite : AGMGT 205, AGMGT 210  
3 hours lecture a week  
Credit : 3 units

**AGECON 220. AGRICULTURAL POLICY**

National farm organization, economic analysis of different aspects of agricultural policy and programs.

Prerequisite : AGMGT 205, AGMGT 210  
3 hours lecture a week  
Credit : 3 units

**AGECON 300. MICROECONOMIC THEORY**

Analysis of micro-economic principles relating to behavior of the consumer; the firm and industry and allocation of resources.

Prerequisite : AGMGT 100  
3 hours lecture a week  
Credit : 3 units

**AGECON 305. MACROECONOMIC THEORY**

Analysis of macroeconomic principles relating to aggregate income and employment, product and money markets.

Prerequisite : AGMGT 100  
3 hours lecture a week  
Credit : 3 units

**AGECON 310. PRODUCTION ECONOMICS**

Fundamental concepts in resource allocation and their application to agricultural production.

Prerequisite : AGECON 300  
3 hours lecture a week  
Credit : 3 units

**AGECON 315. INTERNATIONAL TRADE AND POLICIES**

Principles and concepts in trade, and national and international policies related to development.

Prerequisite : AGECON 305

3 hours lecture a week  
Credit : 3 units

**AGMGT 100. GENERAL ECONOMICS WITH LAND REFORM AND TAXATION**

Basic principles of economics and their application to the current problems of agriculture, economic structures of modern society; basic laws and statutes concerning taxation, and land reform.

Prerequisite : none  
3 hours lecture a week  
Credit : 3 units

**AGMGT 105. AGRICULTURAL ECONOMICS AND MARKETING**

Market research and development structure, conduct and performance for specific agricultural commodities.

Prerequisite : AGMGT 100  
3 hours lecture a week  
Credit : 3 units

**AGMGT 110. FARM MANAGEMENT**

Principles underlying farm management including farm organization, land utilization, farm finance, farm labor, marketing farm products and analysis of farm costs and returns.

Prerequisite : AGMGT 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit : 3 units

**AGMGT 111. INTRODUCTION TO ENTREPRENEURSHIP AND ENTERPRISE DEVELOPMENT**

Basic concepts related to starting and managing an agriculture enterprise with focus on farming as a business and role of farmers as entrepreneurs to include planning a business and preparing a business plan.

Prerequisite : AGMGT 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit : 3 units

**AGMGT 115. AGRIBUSINESS ACCOUNTING**

Principles of accounting with emphasis on their application in agricultural business.

Prerequisite : AGMGT 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit : 3 units

**AGMGT 120. MARKETING AND FARM FINANCE**

History, development and mechanism of rural credit, organization and operation of credit, institutions

serving agriculture, principles of marketing farm products, description of types and functions of marketing organizations and marketing outlets of farm products.

Prerequisite: AGMGT 100  
3 hours lecture a week  
Credit: 3 units

**AGMGT 125. MARKETING AND COOPERATIVES**

Principles of marketing farm products; description of types and function of market outlets of farm products; structure and operation of cooperatives.

Prerequisite : AGMGT 100  
3 hours lecture a week  
Credit : 3 units

**AGMGT 130. AGRIBUSINESS COMMODITY SYSTEM**

Interactions of activities and factors affecting the sourcing of inputs; production activities performed on farm commodities and other products; distribution of outputs at the global market in relation to socio-cultural, political, economic, environment and development landscape of the country.

Prerequisite : AGMGT 111  
4.5 hours a week (2 lec, 2.5 lab)  
Credit : 3 units

**AGMGT 135. FINANCIAL MANAGEMENT FOR AGRIBASED ENTERPRISE**

Analysis of financial statements as basis for financial decision-making, planning and control; other forms of analyses like simple cost and return, partial budgeting and capital budgeting.

Prerequisite : AGMGT 111  
3 hours lecture a week  
Credit : 3 units

**AGMGT 200. INTRODUCTION TO MATHEMATICAL ECONOMICS**

Mathematical approaches to elementary economic theory; concepts of derivatives and derivatives of algebraic functions.

Prerequisite : AGMGT 100, MATH 100  
4.5 hours a week (2 lec, 2.5 lab.)  
Credit : 3 units

**AGMGT 205. INTERMEDIATE MICROECONOMIC THEORY**

Analysis of micro-economic principles relating to behavior of the consumer, the firm and industry, allocation of resources

Prerequisite : AGMGT 100  
3 hours lecture a week

Credit : 3 units

**AGMGT 210. INTERMEDIATE MACROECONOMIC THEORY**

Analysis of macro-economic principles relating to aggregate income and employment, product and money

Prerequisite : AGMGT 100

3 hours lecture a week

Credit : 3 units

**AGMGT 215. FARM BOOKKEEPING AND ACCOUNTING**

Principles of accounting with emphasis on their application of agricultural business

Prerequisite : AGMGT 100

4.5 hours a week (2 lec, 2.5 lab)

Credit : 3 units

**ANIMAL SCIENCE**

**ANSCI 100. PRINCIPLES OF ANIMAL SCIENCE**

Basic principles of animal science; importance of livestock and poultry to Philippine economy.

Prerequisite: BIOL 100 or ZOO 100

4.5 hours a week: (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 101. INTRODUCTION TO ANIMAL SCIENCE**

Principles of breeding, physiology, and nutrition in relation to production, processing and marketing of animal products.

Prerequisite: BIOL 101

4.5 hours a week: (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 105. LIVESTOCK AND POULTRY PRODUCTION**

Basic care and management practices in livestock and poultry.

Prerequisite: ANSCI 101

4.5 hours a week: (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 106. INTRODUCTION TO LIVESTOCK AND POULTRY PRODUCTION**

Management of farm animals for efficient production of meat, milk, eggs and other animal products.

Prerequisite: ANSCI 101

4.5 hours a week: (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 201. ANIMAL NUTRITION AND FEEDING**

Composition and use of feeds, formulation of rations; feeding practices for livestock and poultry.

Prerequisite: ANSCI 105

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 206. SLAUGHTER OF ANIMALS AND PROCESSING OF THEIR PRODUCTS**

Ante-mortem and post-mortem inspection of slaughtered animals, slaughtering and meat fabrication standards, and methods of meat preservation

Prerequisite: ANSCI 106

6 hours a week (1 lec, 5 lab)

Credit: 3 units

**ANSCI 220. ANIMAL NUTRITION**

Study of classes and sources of nutrients, their metabolism and utilization including requirements of these nutrients for maintenance and productive function with emphasis on domestic animals.

Prerequisite: ANSCI 200, CHEM 200

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 230. ANIMAL PARASITES, DISEASES AND THEIR CONTROL**

Study of common parasites and diseases of poultry and livestock and principles of animal health.

Prerequisite: ANSCI 200

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 240. POULTRY PRODUCTION**

Principles of poultry management including recent developments in breeding, feeding, housing, incubation, hatchery management and other practices.

Prerequisite: ANSCI 105

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 255. SWINE PRODUCTION**

Principles of swine production, selection, breeding, housing, feeding and animal health with emphasis on commercial operation.

Prerequisite: ANSCI 105

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**ANSCI 260. BEEF CATTLE AND BUFFALO  
PRODUCTION**

Care, feeding and management of beef cattle and buffalo on the farm and in the ranch.

Prerequisite: ANSCI 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 265. DAIRY PRODUCTION**

Principles of care and management of dairy animals including milk handling, quality control, and basic processing of various milk products.

Prerequisite: ANSCI 105  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 270. GOAT AND SHEEP PRODUCTION**

Fundamental principles in selection, feeding and managing goat and sheep.

Prerequisite: ANSCI 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 280. SLAUGHTER AND MEAT PROCESSING**

Ante-mortem and post-mortem inspection of slaughtered animals, slaughtering and meat fabrication standards, methods of meat selection , identification of meat cuts and preservation.

Prerequisite: ANSCI 105  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 300. POULTRY PRODUCTION I**

Management practices intensively manage and free range chickens for table egg and meat production.

Prerequisite: ANSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 305. POULTRY PRODUCTION II**

Production practices in breeding, feeding management and health care mallard duck, muscovy and geese under backyard and commercial scales.

Prerequisite: ANSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 310. SWINE PRODUCTION I**

Piglets and fattener production including their economic importance and recent disease prevention.

Prerequisite: ANSCI 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 315. SWINE PRODUCTION II**

Management practices of gilts, sows and boars including their economic importance and recent disease prevention and treatment strategies.

Prerequisite: ANSCI 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 320. DAIRY PRODUCTION SYSTEMS**

Fundamental principles in selecting, feeding and managing dairy animals with basic consideration on the production and handling of milk.

Prerequisite: ANSCI 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 325. SMALL RUMINANT PRODUCTION**

Basic and applied principles of small ruminant (goat and sheep) production focusing on production systems, stock selection, breeding, reproduction, housing facilities, feed resources establishment, nutrition and feeding, health care and biosecurity, and waste utilization and management with emphasis on enterprise development and skills enhancement on applied management practices.

Prerequisite: ANSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 330. BEEF CATTLE AND BUFFALO  
PRODUCTION**

Selection, feeding and care and management of beef cattle and buffalo in backyard and commercial type of operations.

Prerequisite: ANSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ANSCI 335. PASTURE AND FORAGE CROP  
PRODUCTION**

Classification and identification of important pastures and forage crops in the tropics, methods of establishment, propagation, management and conservation for maximum utilization by livestock.

Prerequisite: ANSCI 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CROP PROTECTION**

**CPROT 100. AGRICULTURAL MICROBIOLOGY**

Fundamentals of microbiology with emphasis on the microorganisms of agricultural importance.

Prerequisite : BOT 100/BIOL 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **CPROT 101. PRINCIPLES OF CROP PROTECTION**

Identification, biology and ecology of different pests and their natural enemies.

Prerequisite : BIOL 101

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **CPROT 105. FUNDAMENTALS OF CROP PROTECTION I**

Principles and methods of bacterial, fungal and viral plant pathogen; identification, spread and survival, mechanism of pathogenicity, host-parasite relation and control measures; principles of weed science, biology and ecology, establishment, reproduction and dispersal and methods of control.

Prerequisite : CPROT 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **CPROT 105a. INSECT PESTS, DISEASES, WEEDS OF MAJOR CROPS AND THEIR CONTROL**

Recognition of common insect pests, diseases and weeds of major crops, etiology and their control; collection, identification and culture of important pest.

Prerequisite : CPROT 100/Consent of Instructor

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **CPROT 106. APPROACHES AND PRACTICES IN PEST MANAGEMENT**

Philosophies, strategies and methods in pest management

Prerequisite : CPROT 101

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **CPROT 110. FUNDAMENTALS OF CROP PROTECTION II**

Introduction to the study of insects, other arthropods, rodents and vertebrate and invertebrate pests, their identification, biology, ecology and control

Prerequisite : CPROT 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **CPROT 200. METHODS OF DIAGNOSIS AND CONTROL OF PLANT DISEASES**

Symptoms, signs and nature of major plant diseases in the Philippines with some consideration on their life cycle and methods of control.

Prerequisite : CPROT 105

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **CPROT 201. BENEFICIAL ARTHROPODS AND MICROORGANISMS**

Biology and ecology of beneficial arthropods and microorganisms.

Prerequisite : CPROT 101

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **ENTOM 300. INSECT TAXONOMY**

History of systematic entomology; systematic position of Hexapoda within the Arthropoda; principles and procedures of insect classification, nomenclature and taxonomy.

Prerequisite : CPROT 101

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **ENTOM 305. INSECT ECOLOGY**

Diversity of insects and other arthropods; development of the ecological basis for IPM; study of the biology of these arthropods with emphasis on agricultural pest management.

Prerequisite : ENTOM 300

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **ENTOM 310. ACAROLOGY**

Introduction to the study of mites including their taxonomy and ecology; biology of mites associated with crop plants, stored products, leaf litter and soil; control of injurious species; laboratory techniques.

Prerequisite : CPROT 101

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

#### **ENTOM 315. ARTHROPOD PESTS OF ECONOMIC CROPS**

Arthropods of importance to agriculture and their impact on crop production; current information on the pests that continue to infest economically important crops; explore damage, loss and control tactics.

Prerequisite : CPROT 101



4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**PPATH 300. PHYTOBACTERIOLOGY AND MYCOLOGY**

Taxonomy, biology, detection and identification of plant pathogenic bacteria and fungi.

Prerequisite : CPROT 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**PPATH 305. PHYTONEMATOLOGY AND PLANT VIROLOGY**

Economically important plant parasitic nematodes and plant viruses with emphasis on their biology, morphology and taxonomy.

Prerequisite : CPROT 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**PPATH 310. PLANT DISEASE DIAGNOSIS**

Study of the symptoms, signs and nature of major plant diseases in the Philippines considering on their life cycles and methods of control.

Prerequisite : PPATH 300, PPATH 305  
6 hours a week (1 lec, 5 lab)  
Credit: 3 units

**PPATH 315. PLANT DISEASE MANAGEMENT**

Principles and practices involved in plant disease management.

Prerequisite : PPATH 310  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**WDSCI 300. WEED BIOLOGY AND IDENTIFICATION**

Identification, classification and morphology of weeds; their establishment, reproduction and dispersal.

Prerequisite : CPROT 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**WDSCI 305. WEED ECOLOGY**

Interrelationship of weeds and the environment with emphasis on weed growth characteristics and adaptive mechanisms in surviving the changes in the environment.

Prerequisite : WDSCI 300  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**WDSCI 310. WEED MANAGEMENT**

Characteristics of weeds; their dissemination; philosophy and techniques of weed control in home gardens, lawns, fishponds, pastures and farms. Prerequisite : WDSCI 305

4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**WDSCI 315. INTRODUCTION TO HERBICIDE SCIENCE**

Principles and basic information on herbicides; their historical development, chemistry, classification, mode and mechanism of action, and effects on the environment.

Prerequisite : WDSCI 305, CHEM 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CROP SCIENCE**

**AGRON 205. CEREALS (For BSAExEd students)**

Production and post-production principles, and practices; farming systems; utilization and economics of production of cereal crops with emphasis on rice and corn.

Prerequisite : CRSCI 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**AGRON 305. LEGUMES AND ROOTCROPS PRODUCTION**

Production and post-production principles and practices; farming systems; utilization and economics of production of field legumes, and root and related crops.

Prerequisite : CRSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**AGRON 310. CEREALS PRODUCTION**

Production and post-production principles and practices; farming systems; utilization and economics of production of cereal crops with emphasis on rice and corn.

Prerequisite : CRSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**AGRON 315. INDUSTRIAL CROPS PRODUCTION**

Production and post-production management of selected industrial crops with emphasis on sugarcane, cotton, ramie, jute, kenaf, sunflower, sesame, and tobacco.

Prerequisite : CRSCI 106

4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CRSCI 100. PRINCIPLES OF FIELD CROP PRODUCTION(For BSAEXED, BSAEN)**

Principles and practices of raising field crops with emphasis on factors affecting production, their management through cultural practices, and integrated farming systems.

Prerequisite : BOT 100 or BIO 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CRSCI 101. PRINCIPLES OF CROP SCIENCE**

Principles and practices of crop science.

Prerequisite: BIO 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CRSCI 105. PRINCIPLES OF HORTICULTURAL CROP PRODUCTION (For BSAEXED)**

Principles and practices of raising horticultural crops with emphasis on factors affecting production, their management propagation, control of growth and development, post-production technology.

Prerequisite : BOT 100 or BIO 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CRSCI 106. PRACTICES OF CROP PRODUCTION**

Principles and practices of crop production.

Prerequisite: CRSCI 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CRSCI 201. POST HARVEST HANDLING AND SEED TECHNOLOGY**

Post harvest technology of handling and storage of agricultural crops and the science and technology of seed production, processing, storage, testing, and quality control.

Prerequisite : CRSCI 100, CPROT 100 and CPROT 105  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CRSCI 206. PRINCIPLES AND PRACTICES OF PLANT BREEDING, PROPAGATION AND NURSERY MANAGEMENT**

Principles and practices underlying the development, evaluation, propagation and management of improved crop plants, and care and management of plant nurseries.

Prerequisite : CRSCI 106 and STAT 200  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**CRSCI 300. FARMING SYSTEMS**

Principles and determinants of farming systems; procedures for designing, and evaluating location-specific farming systems options.

Prerequisite : CRSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**HORT 200. VEGETABLE PRODUCTION**

Production and post-production principles, and practices; economics of production; farming systems of vegetable crops.

Prerequisite : CRSCI 105  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**HORT 220. POST HARVEST HANDLING OF PERISHABLES**

Principles and practices of post-harvest handling of perishables such as vegetables, fruits, and flowers.

Prerequisite : CRSCI 105  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**HORT 225. MUSHROOM PRODUCTION**

Characteristics, adaptation, methods of producing spawns and spores; preparation of bed materials and shed; methods of harvesting; post harvest handling and marketing of mushrooms.

Prerequisite : CRSCI 105  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**HORT 305. VEGETABLE PRODUCTION**

Production and post production principles and practices; economics of production, and farming systems of vegetable crops.

Prerequisite : CRSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**HORT 310. FRUITS AND PLANTATION CROPS PRODUCTION**

Production and management of selected fruit and plantation crops; post-production technology and utilization.

Prerequisite : CRSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**HORT 315. ORNAMENTAL HORTICULTURE**

Production of ornamental plants and nursery practices; post harvest handling; horticultural plant arts and landscaping.

Prerequisite : CRSCI 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ORGFRM 300. SOIL MANAGEMENT FOR ORGANIC FARMING**

Principles and practices of soil management for organic crop production; development and maintenance of soil health; preparation and application of biofertilizers, and related materials. Prerequisite : SOILS 106

4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ORGFRM 305. CROP PROTECTION FOR ORGANIC FARMING**

Principles and practices of plant pest and disease management for organic crop production; preparation and application of biopesticides, and related materials.

Prerequisite : CPROT 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ORGFRM 310. ORGANIC PRODUCTION OF FIELD CROPS**

Principles and practices of organic production of field crops with emphasis on rice and corn; harvesting and postharvest technology; organic standards and certification; marketing.

Prerequisite : CRSCI 106; ORGFRM 300, 305  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**ORGFRM 315. ORGANIC PRODUCTION OF HORTICULTURAL CROPS**

Principles and practices of organic production of horticultural crops with emphasis on fruits and vegetables; harvesting and postharvest technology; organic standards and certification; marketing.

Prerequisite : CRSCI 106, ORGFRM 300, 305  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**SOIL SCIENCE**

**SOILS 100. PRINCIPLES OF SOIL SCIENCE**

Physical, chemical and biological characteristics of soils; soil formation and development; soil moisture, soil fertility and land use; elementary principles of soil conservation and management.

Prerequisite: CHEM 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 unit

**SOILS 101. PRINCIPLES OF SOIL SCIENCE**

Nature, properties and management of soils.

Prerequisite: CHEM 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 unit

**SOILS 105. SOIL FERTILITY**

Study of soil as medium of plant growth; effective use of fertilizers, manure and liming materials; cropping systems, and maintenance of soil fertility.

Prerequisite: BOT 100 and SOILS 100  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 unit

**SOILS 106. SOIL FERTILITY, CONSERVATION AND MANAGEMENT**

Soil nutrient elements, their availability, measurement and evaluation, soil degradation and its control, and maintenance and improvement.

Prerequisite: SOILS 101  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**SOILS 201. SOIL SURVEY, CLASSIFICATION AND LAND USE**

Survey and classification of soils based on their morphology, genesis and properties; land resources data and information and their interpretation and application for land use design and planning and environmental assessment of land uses.

Prerequisite: SOILS 106  
4.5 hours a week (2 lec, 2.5 lab)  
Credit: 3 units

**SOILS 205. AGRICULTURAL GEOLOGY**

Geological processes and agents in the development of landforms in relation to agriculture, geography and distribution of soils

Prerequisite: SOILS 100  
4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**SOILS 210. SOIL CHEMISTRY**

Chemical properties and processes in soils; fixation of ions and chemistry of saturated soils.

Prerequisite: SOILS 100

3 hours lecture a week

Credit: 3 units

**SOILS 215. SOIL AND PLANT TISSUE ANALYSIS**

Principles and techniques of quantitative and qualitative chemical analysis and assessment of nutrient requirements of crops.

Prerequisite: SOILS 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**SOILS 300. AGRICULTURAL GEOLOGY**

Geological processes and agencies in the development of land forms in relation to agriculture. Prerequisite: SOILS 101

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**SOILS 305. SOIL BIOLOGY**

Soil biota; bacterial physiology and metabolism; microbial processes involving OM, N, P, and S transformations.

Prerequisite: SOILS 101

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**SOILS 310. SOIL PHYSICS**

Physical make-up and behavior of the soil in relation to practical problems of soil management.

Prerequisite: SOILS 101, PHYS 115

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

**SOILS 315. SOIL CHEMISTRY AND NUTRIENT ANALYSIS**

Stability and weathering of minerals; chemical characteristics of soil colloids; fixation of nutrients; chemical changes of submerged and polluted soils; soil and plant tissue analysis.

Prerequisite: SOILS 101, CHEM 101

3 hours lecture a week

Credit: 3 units