Syllabus on AS 1101

INTRODUCTION TO ANIMAL SCIENCE

Introduction to Animal Science

Course Outcomes (CO) and Relationship to Program Outcomes (PO)*															
After completing the course, the student must be able to:	PO**														
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
1. *Explain the significance of animal science in agriculture*			E												
2. *Explain the fundamental concepts and principles of animal physiology and breeding concerning animal productivity*										I					
3. *Demonstrate basic skills in formulating animal rations as they relate to animal productivity*										I					
4. *Demonstrate basic skills in slaughtering, processing, and marketing of farm animals*										I					

***Program Outcomes**

- Central Philippine University-based
  - *a. Diligently and religiously strive to offer the best that they could to answer the needs of the world;*
  - *b. Manifest the CPU Core Values instilled with them;*
- PSG in BS Agriculture
  - *c. Articulate and discuss the latest developments in the specific field of practice;*
  - *d. Effectively communicate orally and in writing using both English and Filipino;*
  - *e. Work effectively and independently in multi-disciplinary and multi-cultural teams;*
  - *f. Act in recognition of professional, social, and ethical responsibilities;*
  - *g. Preserve and promote "Filipino historical and cultural heritage";*
  - *h. Generate and share knowledge relevant to specific fields in the study of agriculture;*
  - *i. Formulate and implement agricultural development plans and programs;*
  - *j. Apply scientific methods in knowledge generation and knowledge application;*
  - *k. Understand and apply the concepts of agricultural productivity and sustainability in the context of national, regional, and global developments;*
  - *l. Engage in agricultural production and post-production activities;*
  - *m. Promote sound agricultural technologies to various clients and in the manpower development for agriculture;*
  - *n. Employ relevant tools in information technology in solving agriculture-related problems;*
  - *o. And, an ability to participate in the generation of new knowledge or in research and development projects.*

**PO – Level: I – Introductory; E – Enabling; D–Demonstrate

Module 1: COURSE INFORMATION

Course Title	*Introduction to Animal Science*
Course Description	*Discusses the significance and economic importance of animal science in agriculture. The principles of breeding, physiology, and nutrition concerning the production, processing, and marketing of animal products are also introduced in this course.*
Prerequisites	*None*
Credit Units	*3 units*
Business units	Lecture: ***2 units*** Laboratory: ***3 units***
Textbook	Sreekumar, D. & Sreenivasaiah, P.V. (2015). *Textbook in Animal Science*. India: Write & Print Publications. (link: https://heyzine.com/flip-book/d3bd6246f4.html) Mikesell, R. & Baker, M. (2011). *Animal Science Biology and Technology*. USA: DELMAR Cengage Learning. (link: https://heyzine.com/flip-book/b394bb0dff.html)
Learning Materials	- *E-book & References* - *Online flipbook* - *Audio-video book* - *Recorded lectures*
Resources Needed	*Connectivity, Native Chicken Production Project, Mini-Feed Mill, Mini-Phytobiotic Processing Equipment*
Assessment Techniques	*Online and Practical Exams*

Program Outcome	Topics	*Course Outcome*	Learning Activities
Module 2: INTRODUCTION			
Articulate and discuss the latest developments in the specific field of practice	○ Animals in the ecological system ○ Animals and their economic importance ○ The animal industry - Swine Industry - Dairy and Beef Cattle Industry - Goat Industry - Carabao Industry - Poultry Industry • *Layer* • *Broiler* • *Duck* • *Quail* • *Native Chicken*	*Explain the significance of animal science in agriculture.*	○ Self-learning pace through the online learning management system ○ Teacher lead-learning process through the blended form in the online and limited face-to-face interactions
Module 3: ANATOMY AND PHYSIOLOGY OF FARM ANIMALS			
Apply scientific methods in knowledge generation and knowledge application	○ Role of the following animal organs in optimizing the livestock and poultry productivity: - *The nervous system* - *The endocrine system*	*Explain the fundamental concepts and principles of animal physiology and breeding concerning animal productivity.*	○ Self-learning pace through the online learning management system ○ Teacher lead-learning process through the blended

Program Outcome	Topics	*Course Outcome*	Learning Activities
	- *The cardiovascular system* - *The digestive system* - *The respiratory system* - *The excretory system* - *The reproductive system* - *Body temperature regulation*		form in the online and limited face-to-face interactions ○ Laboratory Activity #1. ***Measurement of the Pulse Rate, Respiration Rate, and Body Temperature of Some Farm Animals*** ○ Laboratory Activity #2. ***Reproductive System: Structure and Function*** ○ Laboratory Activity #3. ***Digestive System: Structure and Functions***
Module 4: GENETICS AND LIVESTOCK IMPROVEMENT			
Apply scientific methods in knowledge generation and knowledge application	○ Genes and their role in animal productivity - *Gene and their functions* - *The role of genotype and environment on the phenotypic traits of farm animals* - *Gene action* ○ The mechanics of inheritance - *Gametogenesis and fertilization* - *Probability and Mendelian inheritance* - *Non-Mendelian inheritance* ○ Genes in population - *Genetic composition of animal populations* - *Equilibrium population* - *Factors affecting change in the genetic composition of the population* ○ Animal breeding - *The objectives of animal breeding* - *Systems of breeding* ○ Reproduction and genetic improvement of animals - *Reproduction cycle and rate of genetic improvement*	*Explain the fundamental concepts and principles of animal physiology and breeding concerning animal productivity.*	○ Self-learning pace through the online learning management system ○ Teacher lead-learning process through the blended form in the online and limited face-to-face interactions ○ Laboratory Activity #4. ***Important Traits in Livestock and Poultry*** ○ Laboratory Activity #5. ***Selection of Animals Based on Records*** ○ Laboratory Activity #6. ***Systems of Breeding of Farm Animals***

Program Outcome	Topics	*Course Outcome*	Learning Activities
	- *Artificial insemination* - *Embryo transfer technology*		
Module 5: ANIMAL NUTRITION			
Apply scientific methods in knowledge generation and knowledge application	○ Definition of terms - *Nutrition* - *Nutrients* - *Digestion* - *Absorption* - *Metabolism* ○ Classes of nutrients, functions, and deficiency - *Water* - *Carbohydrates* - *Fats* - *Proteins* - *Minerals* • *Macromineral* • *Micromineral* - *Vitamins* ○ Digestion, absorption, and metabolisms - *Physical factor in digestion* - *Digestion process* - *Absorption of end-products of digestion* - *Energy metabolisms* - *Protein metabolisms* ○ Nutrient requirement of farm animals - *Growth* - *Maintenance* - *Reproduction* - *Lactation* - *Egg production* - *Wool production* - *Work* ○ General symptoms indicative of marginal or advanced vitamin deficiencies in poultry, pigs, and ruminants	*Demonstrate basic skill in formulating simple animal rations as they relate to animal productivity*	○ Self-learning pace through the online learning management system ○ Teacher lead-learning process through the blended form in the online and limited face-to-face interactions ○ Laboratory Activity #7. ***Nutrient Sources: Roughages, Concentrates, and Supplements*** ○ Laboratory Activity #8. ***Methods of Feed Evaluation and Quality Control*** ○ Laboratory Activity #9. ***Evaluation of Rations for Livestock and Poultry***
Module 6: SLAUGHTERING, PROCESSING, AND MARKETING OF FARM ANIMALS			
Apply scientific methods in knowledge generation and knowledge application	○ Definition of terms ○ Slaughtering and fabrication - *Basic principles of selecting animals for slaughter* - *Handling before slaughter*	*Demonstrate basic skill in slaughtering, processing, and marketing of farm animals*	○ Self-learning pace through the online learning management system ○ Teacher lead-learning process through the blended form in the online and limited face-to-face interactions

Program Outcome	Topics	*Course Outcome*	Learning Activities
	○ Dressing yield of common livestock and poultry ○ Proximate composition of meat, milk, and eggs from different species - *General characteristics* - *Composition – common test* - *Constituents – separation of constituents* - *Value of food* ○ Basic principles of proper handling and processing of meat and milk - *Causes of deterioration* - *Processing of milk* - *Pasteurization and sterilization* - *Processing of meat* - *Processing of other livestock products* ○ Methods of marketing livestock and poultry ○ Common problems encountered in marketing farm animals ○ Meat and meat products ○ Types of the meat market		○ Laboratory Activity #10. ***Livestock Slaughtering and Meat Handling*** ○ Laboratory Activity #11. ***Processing of Meat Products*** ○ Laboratory Activity #12. ***Processing of Milk Products***