

Discipline: Agriculture	Sub-discipline: Animal Science
General Course Title: Swine Science	Min. Units: 3 Semester
Proposed Suffix: L	
<p>Course Description: Study of the principles and practices of purebred and commercial pork production throughout California, the United States and the World; emphasis on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing and recordkeeping to ensure scientifically-based management decisions and consumer product acceptance. Laboratory required.</p>	
Required Prerequisites or Co-Requisites ¹	
Advisories/Recommended Preparation ²	
<p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> • Describe the factors influencing the development of the swine industry. • Identify the swine breeds and their characteristics, adaptations, strengths and weaknesses including defects and disqualifications. • Define and outline principles of selecting and maintaining a swine breeding herd. • Explain and practice procedures needed in handling sows before, during and after farrowing. • Discuss the principles of feeding the breeding herd and growing finishing pigs for market. • Identify procedures and specifications for the Pork Quality Assurance Programs. • Analyze the most important swine diseases and parasites as well as the principles of their control including prevention and treatment. • Name the market classes and grades of swine. • Explain the key measures of carcass cutability and quality. • Discuss the common types of production/marketing systems for swine in California and the United States. • Review the essential equipment and facilities for a complete farrow-to-finish swine production unit. • Identify and discuss animal welfare, environmental and food safety issues in the swine industry. • Describe career opportunities and requirements for successful employment. • Identify cultural influences in the swine industry. 	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. The Swine Industry <ol style="list-style-type: none"> a. History and development b. Distribution c. Advantages and disadvantages d. Industry outlook and trends 2. Production and Marketing Systems for Swine <ol style="list-style-type: none"> a. Types of purebred and commercial production enterprises b. Market classes and grades c. Types of markets in California and the United States d. Ethnic influence <p>Swine Science (Content Continued)</p>	

¹ Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

² Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

3. Establishing and Maintaining a Swine Herd
 - a. Major breeds of swine in the United States
 - (1) Identification
 - (2) Advantages
 - (3) Disadvantages
 - b. Genetic and physical basis for selection
 - c. Reproductive efficiency
 - (1) Carcass characteristics
 - (2) Performance testing measures
 - d. Purebred and crossbred mating systems
4. Care and Management of the Swine Herd
 - a. Feeding and management of boars
 - b. Feeding and management of gilts and sows
 - (1) Prior to breeding
 - (2) Estrus
 - (3) Gestation
 - d. Reproduction management
 - (1) Artificial insemination
 - (2) Semen handling
 - (3) Estrus synchronization
5. Facilities and Equipment
 - a. Farrowing
 - b. Nursery
 - c. Growing-finishing
 - d. Breeding
 - e. Feed processing, storage and delivery systems
 - f. Waste management
 - g. Harvesting/processing
6. Feeding Swine
 - a. Nutrient requirements for various stages of growth and maintenance
 - b. Common feedstuffs for swine
 - c. Forms of feed
 - d. Ration formulation
 - e. Feed additives
 - f. Feed efficiency
7. Environmental Management and Disease Control
 - a. Sanitation and waste management
 - b. Ventilation and air quality
 - c. Temperature and humidity control
 - d. Symptoms, prevention and control of common diseases
 - e. Specific pathogen free (SPF) herds
8. Economics of Pork Production
 - a. Supply and demand factors/consumption trends
 - b. Costs of production
 - c. Market niches

Swine Science
(Content Continued)

9. Issues and Regulations in the Swine Industry
 - a. Animal rights/welfare

b. Food safety regulations c. Environmental issues	
Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.	
Methods of Evaluation: Lecture Comprehensive Quizzes and Exams Written Critical Thinking Scenarios Problem Analysis and Solution Research and Term Papers	Methods of Evaluation: Laboratory Laboratory Skill Validation by Observation Laboratory Reports Laboratory Research Projects and Reports Laboratory Skill Practicum Exams
Typical Textbooks, Manuals, or Other Support Materials <u>Pork Industry Handbook</u> , Purdue University <u>Swine Production</u> , Bundy, Diggins, Christensen, New Jersey, Prentice Hall <u>Swine Science</u> , Ensminger & Parker, The Interstate Printers & Publishers. ISBN 0-8134-2289-2. <u>Pork Report</u> , & <u>National Hog Farmer</u> , Magazines	
Statewide Articulation: Formally CAN AG 24, CPSLO-ASCI 222, CPP-not articulated, CSUF-A SCI 31, CSUC-ANSC 173, other universities as lower division elective	
FDRG Lead Signature:	Date:
Mark E. Bender, PhD CSU Stanislaus	
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