I. **OVERVIEW**
The following information will appear in the 2012 - 2013 catalog

**ANSC 202  Swine Science**  3 Units

A study of the principles and practices of purebred and commercial pork production throughout California, the United States, and the world. Emphasis to be placed on importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing, and recordkeeping to ensure scientifically-based management decisions and consumer product acceptance.

Field trips are required.  (A-F Only) Lecture /Lab
Transfer: (CSU, UC)

II. **LEARNING CONTEXT**
Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. **COURSE CONTENT**

1. **Required Content:**

   a. The swine industry
      i. History and development
      ii. Distribution
      iii. Advantages and disadvantages
      iv. Industry outlook and trends

   b. Production and marketing systems for swine
      i. Types of purebred and commercial production enterprises
      ii. Market classes and grades
      iii. Types of markets in California and the United States
      iv. Ethnic influence

   c. Establishing and maintaining a swine herd
      i. Major breeds of swine in the United States
         a. Identification
         b. Advantages
         c. Disadvantages
ii. Genetic and physical basis for selection

iii. Reproductive efficiency
   a. Carcass characteristics
   b. Performance testing measures

iv. Purebred and crossbreed mating systems

d. Care and management of the swine herd
   i. Feeding and management of boars
   ii. Feeding and management of gilts and sows
      a. Prior to breeding
      b. Estrus
      c. Gestation

iii. Farrowing
      a. Lactation
      b. Weaning feeder pigs

iv. Feeder to finish

v. Reproduction management
   a. Artificial insemination
   b. Semen handling
   c. Estrus synchronization

e. Facilities and equipment
   i. Farrowing
   ii. Nursery
   iii. Growing-finishing
   iv. Breeding
   v. Feed processing, storage and delivery systems
   vi. Waste management
   vii. Harvesting/processing

f. Feeding swine
   i. Nutrient requirements for various stages of growth and maintenance
ii. Common feedstuffs for swine

iii. Forms of feed

iv. Ration formulation

v. Feed additives

vi. Feed efficiency

g. Environmental management and disease control

i. Sanitation and waste management

ii. Ventilation and air quality

iii. Temperature and humidity control

iv. Symptoms, prevention, and control of common diseases

v. Specific pathogen free (SPF) herds

h. Economics of pork production

i. Supply and demand factors/consumption trends

ii. Costs of production

iii. Market niches

i. Issues and regulations in the swine industry

i. Animal rights/welfare

ii. Food safety regulations

iii. Environmental issues

2. Required Lab Content:

a. Facilities and equipment

i. Farrowing Crates / Pens

ii. Nursery room management

iii. Growing-finishing phases

iv. Breeding - boars and sows

v. Feed processing, storage and delivery systems

vi. Waste management

vii. Harvesting/processing

b. Environmental management and disease control
i. Sanitation and waste management

ii. Ventilation and air quality

iii. Temperature and humidity control

iv. Symptoms, prevention, and control of common diseases

v. Specific pathogen free (SPF) herds

c. Handling and health management of the swine herd

i. Feeding and management of boars

ii. Feeding and management of gilts and sows
   a. Prior to breeding
   b. Estrus
   c. Gestation

iii. Farrowing
   a. Lactation
   b. Weaning feeder pigs

iv. Feeder to finish

v. Reproduction management
   a. Artificial insemination
   b. Semen handling
   c. Estrus synchronization

d. Issues and regulations in the swine industry

i. Animal rights/welfare

ii. Food safety regulations

iii. Environmental issues

B. HOURS AND UNITS

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<th>Inst Method</th>
<th>Term Hours</th>
<th>Units</th>
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<tr>
<td>Lect</td>
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<td>2.00</td>
</tr>
<tr>
<td>Lab</td>
<td>54</td>
<td>1.00</td>
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C. METHODS OF INSTRUCTION (TYPICAL)
Instructors of the course might conduct the course using the following method:

1. Lecture and discussion.
2. Assigned reading from text and current periodicals.
3. Demonstration and use of PowerPoint presentations.
4. Assign written laboratory reports.
5. Field study tours and individual visitation assignments.
6. Facilitate student completion of laboratory activities.

D. ASSIGNMENTS (TYPICAL)

1. EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS
   Time spent on coursework in addition to hours of instruction (lecture hours)
   a. Weekly written laboratory reports highlighting field trips, laboratory activities and projects.
   b. Study and preparation outside of class for quizzes, exams and laboratory practical exams.
   c. Development of scientific reports used in evaluation of the results of feed trial experiments.
   d. Preparation of swine management reports.

2. EVIDENCE OF CRITICAL THINKING
   Assignments require the appropriate level of critical thinking
   a. Students will summarize in a laboratory report format, tours to local swine producers highlighting unique production and management practices, facts learned and concluding with a critical analysis of each operation visited.
   b. Identify the 5 most important swine breeds in the US and explain unique qualities and breed characteristics and identify breeding programs where each breed would be useful.
   c. Given a scenario with a litter of pigs that are performing poorly, students will analyze the situation, provide suggestions for improvement and explain their suggestions.

E. TEXTS AND OTHER READINGS (TYPICAL)

2. Other: Instructor generated handouts

III. DESIRED LEARNING

A. COURSE GOAL
   As a result of satisfactory completion of this course, the student should be prepared to:

   describe the significance of the swine industry locally and globally, explain production and management strategies used in swine production and discuss current issues affecting the swine industry in the US.
B. STUDENT LEARNING GOALS
Mastery of the following learning goals will enable the student to achieve the overall course goal.

1. **Required Learning Goals**
Upon satisfactory completion of this course, the student will be able to:

   a. Describe the factors influencing the development of the swine industry.
   b. Identify the swine breeds and their characteristics, adaptations, strengths, and weaknesses including defects and disqualifications.
   c. Define and outline principles of selecting and maintaining a swine-breeding herd.
   d. Explain and practice procedures needed in handling sows before, during, and after farrowing.
   e. Discuss the principles of feeding the breeding herd and growing finishing pigs for market.
   f. Identify procedures and specifications for the Pork Certification programs.
   g. Analyze the most important swine diseases and parasites as well as the principles of their control including prevention and treatment.
   h. Name the market classes and grades of swine.
   i. Explain the key measures of carcass cutability and quality.
   j. Discuss the common types of production/marketing systems for swine in California and the United States.
   k. Review the essential equipment and facilities for a complete farrow-to-finish swine production unit.
   l. Identify and discuss animal welfare issues in the swine industry.
   m. Describe career opportunities and requirements for successful employment.
   n. Identify cultural influences and ethnic contributions to the swine industry.

2. **Lab Learning Goals**
Upon satisfactory completion of the lab portion of this course, the student will be able to:

   a. Recognize 5 major swine breeds and explain their attributes.
   b. Demonstrate proficiency in common swine production and management practices.
   c. Identify common tools and equipment used specifically for swine management.
   d. Explain various swine management strategies as observed during field trips to local producers.
   e. Operate swine equipment including automated feeders, scales, heaters and curtains.
   f. Explain how to conduct a feed trial using principles of the scientific method.

IV. METHODS OF ASSESSMENT (TYPICAL)

A. FORMATIVE ASSESSMENT

1. Weekly quizzes
2. Evaluation of proficiency and performance skills
3. Appraisal of written reports of laboratory exercises
4. Application, attitude, and performance considerations
5. Participation

B. **SUMMATIVE ASSESSMENT**
1. Lab practical final exam
2. Midterm examination
3. Final Exam