ANSCI 153 Course Outline as of Fall 2024

CATALOG INFORMATION

Dept and Nbr: ANSCI 153 Title: SUS ANIMAL PROD
Full Title: Sustainable Agriculture Production Systems with Animals
Last Reviewed: 2/7/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.50	17.5	Lecture Scheduled	43.75
Minimum	3.00	Lab Scheduled	1.50	6	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 87.50 Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
In this course, students will explore the integration of livestock as part of a sustainable farming system with emphasis on small-scale production for niche markets and pasture-based-systems. Students will learn appropriate breed selection, nutrition and living requirements for livestock such as goats, hogs, sheep, poultry and cattle. Current applications of sustainable animal agriculture including the challenges of animal production, animal needs, animal welfare, and protection of the environment and resources for future food supply systems will also be covered in this course.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 OR EMLS 100 (formerly ESL 100) or equivalent

Limits on Enrollment:

Schedule of Classes Information:
Description: In this course, students will explore the integration of livestock as part of a sustainable farming system with emphasis on small-scale production for niche markets and

pasture-based-systems. Students will learn appropriate breed selection, nutrition and living requirements for livestock such as goats, hogs, sheep, poultry and cattle. Current applications of sustainable animal agriculture including the challenges of animal production, animal needs, animal welfare, and protection of the environment and resources for future food supply systems will also be covered in this course. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 OR EMLS 100 (formerly ESL 100) or equivalent
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Explain consumer concerns that affect market animal production.
2. Apply concepts of niche market production to animal management strategies.
3. Explain the benefits of pasture management strategies as they relate to land improvement.

Objectives:
At the conclusion of this course, the student should be able to:
1. Define sustainable animal agriculture utilizing the philosophies relative to sustainable agriculture.
2. Explain the differences among sustainable livestock product classifications.
3. Articulate both sides of the contemporary issues affecting the animal production industries (both sustainable and the traditional animal systems) today.
4. Identify resources necessary for successful sustainable agricultural production systems with animals.
5. Identify appropriate models of sustainable animal agricultural farming..
6. Explain the challenges faced in sustainable animal agriculture systems.
7. List the principles for enhancing the profitability and sustainability in agricultural practices.

Topics and Scope:

I. Sustainable Animal Agriculture

- A. Definition of sustainable agriculture
- B. Issues facing animal production
  1. Economics
  2. Environmental
  3. Ethical
  4. Social
  5. Cultural
- C. Local vs. global perspectives

II. Niche Market Production
- A. Production systems
  1. Small scale
  2. Pasture based
  3. Carbon farm
  4. Fire mitigation
  5. Breed considerations
- B. Animal management
  1. Grassfed livestock
     a. Ruminants and grazing
        i. Nutrition
        ii. Anatomy and physiology
     b. Grazing systems
     c. Plant identification
     d. Stocking rate
     e. Rates of gain versus conventional systems
     f. Milk production and pasture
     g. Disease risk
  2. Poultry
     a. Nutrition of pasture poultry
     b. Housing considerations
     c. Rates of gain
     d. Species considerations
     e. Disease risk
- C. Processing and end products
  1. Carcass quality
  2. Growth and Development
  3. Processing
     a. Processing strategies
     b. Value added products
     c. Food safety processes

III. Agroecology
- A. Environmental considerations of animal production
  1. Soil science
  2. Water quality
  3. Invasive species management
- B. Soil science
- C. Carbon sequestration

IV. Business Management
- A. Business planning
- B. Niche marketing
  1. Definition
  2. Marketing strategies
     a. USDA systems

b. Third party systems
3. Understanding consumer concerns
C. Economics
1. Enterprise budgets
2. Cost benefit analysis
3. Where to market
D. Regulation of marketing and processing
1. Federal
2. Local

Concepts presented in lecture are applied and practiced in lab.

Assignment:

Lecture based assignments:
1. Weekly reading (20-30 pages)
2. Presentations (2- 4)
3. Worksheets (8-10)
4. Quizzes (2-3)
5. Midterm and final project

Lab based assignments:
1. Lab write ups (6-9)
2. Field work including measuring animal management practices

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Lab write ups, worksheets	Writing 10 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Worksheets	Problem solving 10 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Field work including measuring animal management practices, term projects	Skill Demonstrations 10 - 20%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes, mid-term project and final project	Exams 30 - 50%

Other: Includes any assessment tools that do not logically fit into the above categories.

Presentations	Other Category 10 - 20%

Representative Textbooks and Materials:
Defending Beef: The Ecological and Nutritional Case for Meat. 2nd edition. Hahn Niman , Nicolette. Chelsea Green Publishing. 2021
The Art and Science of Grazing. 1st edition. Flack, Sarah. Chelsea Green Publishing. 2016
Silvopasture: A Guide to Managing Grazing Animals, Forage Crops, and Trees in a Temperate Farm Ecosystem. 2nd edition. Gabriel, Steve. Chelsea Green Publishing. 2018
Beyond the Rangeland Conflict: Toward a West That Works. 2nd edition. Dagget, Dan. Good Stewards Project. 2000 (classic)
Agroecology: Ecological Processes in Sustainable Agriculture. 1st edition. Gliessman, Stephen. CRC Press. 1997 (classic)
Agricultural Systems Management: Optimizing Efficiency and Performance. 1st edition. Peart, Robert M. and W. David Shoup. CRC Press. 2004 (classic)
The Last Harvest: The Genetic Gamble That Threatens to Destroy American Agriculture. 1st edition. Raeburn, Paul. Bison Books. 1996 (classic)
The New Ranch Handbook: A Guide to Restoring Western Rangelands. 1st edition. Freeman Sayre, Nathan. Quivira Coalition. 2001 (classic)
Natural Capitalism: Creating the Next Industrial Revolution. 1st edition. Hawken, Paul. US Green Building Council. 2000 (classic)