

**ANSCI 153 Course Outline as of Fall 2020****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	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

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:**

This course covers the integration of livestock as part of a sustainable farming system with emphasis on small-scale production for niche markets and pasture based systems. Topics included are 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 be covered in this course.

**Prerequisites/Corequisites:****Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100 or equivalent

**Limits on Enrollment:****Schedule of Classes Information:**

Description: This course covers the integration of livestock as part of a sustainable farming system with emphasis on small-scale production for niche markets and pasture based systems. Topics included are 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 be covered in this course. (Grade or P/NP)

Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or 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:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
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<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
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<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
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<b>CSU Transfer:</b>	Effective:	Inactive:
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<b>UC Transfer:</b>	Effective:	Inactive:
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**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 it relates to land improvement.

**Objectives:**

Students will 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. Cite examples of sustainable animal agricultural models that are currently in use for any of the domestic species of livestock.
6. Describe how sustainable animal agriculture and animal management practices are inter-linked.
7. Explain the challenges faced in sustainable animal agriculture systems.
8. List principles that are critical to enhancing the profitability of sustainability in agricultural practices both locally and globally.

## 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. Public perception
- 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 vs 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

### 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. Regulations
  1. Marketing systems
  2. Processing and production

**Assignment:**

1. Reading assignments average minimum 30 pages per week
2. Writing assignments: reports, worksheets
3. Quizzes, midterm and final
4. Term paper of 1 to 2 pages
5. Field work including measuring animal management practices
6. Two term projects

**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.

Reports and term paper	Writing 20 - 30%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Worksheets	Problem solving 10 - 20%
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**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%
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**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes, mid-term and final	Exams 40 - 60%
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**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

**Representative Textbooks and Materials:**

Hahn-Niman, Nicollete, *Defending Beef*, Chelsea Green Publishing 2014

Flack, Sarah. *The Art and Science of Grazing*, Chelsea Green Publishing, 2016

Gabriel, Steve *Silvopasture: A Guide to Managing Grazing Animals, Forage Crops, and Trees in a Temperate Farm Ecosystem* Chelsea Green Publishing 2018

Dagget, Dan. *Beyond The Rangeland Conflict - Toward a West That Works*. Gibbs-Smith Publisher, Layton, UT. 1995 (Classic)

Gliessman, Stephen r. *Agroecology: Ecological Processes in Sustainable Agriculture*. Lewis Publishers. 2000 (Classic)

Peart, Robert M. and W. David Shoup. *Agricultural Systems Management: Optimizing Efficiency and Performance*. Marcel Dekker Publisher. 2004 (Classic)

Raeburn, Paul. . *The Last Harvest - The Genetic Gamble that Threatens to Destroy American Agriculture*. University of Nebraska Press, Lincoln, NE.1996 (Classic)

Sayre, Nathan F. *The New Ranch Handbook: A Guide to Restoring Western Rangelands*. 1st Edition. The Quivira Coalition books, Santa Fe, NM. 2001 (Classic)

Hawken, P. A. Lovins, & L. H. Lovins. *Natural Capitalism: Creating the Next Industrial Revolution*. 1st Edition. Little, Brown and Co. New York, NY. 2004 (Classic)