

CATALOG INFORMATION

Dept and Nbr: ANSCI 52

Title: MEAT SCIENCE

Full Title: Meat Science

Last Reviewed: 2/25/2019

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	8	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:
This course is an introduction to the meat industry with a special emphasis on meat products and value added meat processing techniques. It includes concepts of food safety and sanitation, grading and inspection along with preservation and marketing strategies to meet current consumer demands.

Prerequisites/Corequisites:

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

Limits on Enrollment:

Schedule of Classes Information:
Description: This course is an introduction to the meat industry with a special emphasis on meat products and value added meat processing techniques. It includes concepts of food safety and sanitation, grading and inspection along with preservation and marketing strategies to meet current consumer demands. (Grade or P/NP)
Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 OR EMLS 100 (formerly ESL 100) or equivalent
Limits on Enrollment:
Transfer Credit: CSU;
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:	Transferable	Effective: Fall 2019	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. Determine the quality and yield grades for beef, sheep and pork carcasses utilizing current United States Department of Agriculture (USDA) grading standards.
2. Evaluate live animal characteristics and correlate them to carcass traits.
3. Demonstrate safe and sanitary methods for maintaining and utilizing meat processing tools, equipment, and facilities.

Objectives:

At the conclusion of this course, the student should be able to:

1. Explain safe and sanitary techniques for processing beef, sheep and pork carcasses into wholesale cuts and retail products.
2. Discuss current trends, challenges and issues impacting the meats industry.
3. Outline industry-approved procedures for harvesting beef cattle, sheep and swine.
4. Identify the wholesale and retail cuts of beef, sheep and swine carcasses.
5. Demonstrate safe and sanitary methods for maintaining and utilizing meat processing tools, equipment, and facilities.
6. Explain the application of Hazard Analysis Critical Control Point (HACCP) plans in the meat science industry.

Topics and Scope:

- I. The Meat Processing Industry
 - A. Historical perspective
 - B. Purpose and economic importance
 - C. Future trends and technologies
- II. Regulations and Compliance
 - A. Food safety and inspection
 - B. State and Federal laws

- C. Policies and trade unions
- III. Equipment and Facilities
 - A. Safety procedures and conditions
 - B. Maintenance and operation of food processing equipment
 - C. Sanitation
- IV. Food Safety Considerations
 - A. Disease Risk
 - B. Contaminants
 - C. Prevention
- V. Meat and Edible By-Products
 - A. Composition and nutrition value
 - B. Health and consumer awareness
- VI. Meat Processing
 - A. Handling and cutting techniques
 - B. Fabrication and specification
 - C. Wholesale cuts
 - D. Retail Cut
 - C. Packaging and preservation
- VII. Process Meat Products
 - A. Curing and smoking
 - B. Meat cookery, canning and drying
 - C. Sausage and seasonings
 - D. Additives and preservatives
- VIII. Storage and Distribution
 - A. Shelf life and deterioration
 - B. Freezing and refrigeration
 - C. Handling and transportation
- IX. Marketing Research
 - A. Consumer acceptance
 - B. New and artificial meat products
 - C. Product development
 - D. Market considerations
- X. Introduction to Evaluation
 - A. Live Animal
 - B. Carcass
 - C. Grading
 - D. Performance Data
- XI. Growth, Development and Fattening Meat Animals

Lab Outline:

- I. Safety in the Meats Lab
 - A. Attire & Footwear
 - B. Knife Selection, Sharpening & Care
 - C. Safety Procedures
 - D. Sanitation Procedures & Protocol
- II. Harvesting Livestock
- III. Evaluation and Processing Carcasses
- IV. Retail and Wholesale Cut Identification
- V. Meat Handling and Storage
- VI. Meat Product Preparation
 - A. Thawing Procedures
 - B. Seasoning Methods & Ingredients

- C. Cooking Methods
- D. Meat Processing
- F. Product Evaluation
- VII. Live Animal Evaluation
- VIII. Carcass Evaluation
- IX. Growth, Development and Fattening Meat Animals
- X. Food Safety and HACCP plan development

Assignment:

Lecture-Related Assignments:

1. Reading Assignments average 30 pages per week
2. Writing Assignments: reports, worksheets, and written essay exams
3. Quizzes (6 - 10), midterm and final

Lab-Related Assignments:

1. Lab Projects including recipe development and carcass grading problem sets
2. Skill demonstrations - Lab practicals

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.

Laboratory reports and worksheets

Writing 20 - 25%

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

Projects

Problem solving 15 - 25%

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

Lab Practical

Skill Demonstrations 5 - 15%

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

Quizzes, midterm, final exam

Exams 40 - 50%

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

None

Other Category 0 - 0%

Representative Textbooks and Materials:

Principles of Meat Science. 5th ed. Aberle, Elton and Forrest, John and Gerrard, David. Kendall

Hunt. 2012 (classic)

Meat Science Laboratory Manual. 8th ed. Savell, Jeff and Smith, G. American Press. 2009
(classic)