

COURSE OUTLINE

Meat Science Fundamentals

Course Description

AG 212. Meat Science Fundamentals. 2 hours credit. This class is designed to give the student an outline, in detail, of the meat industry from the basic concepts of how tissue structures develop into a carcass, to the final marketing channels of retail meat cuts. This class will also include the influence society can place on this cycle.

Course Relevance

This course is designed for students with an interest in the livestock industry. Students who complete this course will have an in depth understanding of the meat industry. They too should gain the knowledge necessary to produce and market product for the ever-changing meat consumer.

Required Materials

Hedrick, H.B., Aberle, E.D., Forrest, J.C., Judge, M.D., Merkel, R.A. (2002). *Principles of Meat Science*. (4th ed.). Dubuque, IA: Kendall/Hunt Publishing

Learning Outcomes

The intention is for the student to be able to

1. Understand the meat industry in a historical perspective
2. Understand the basics of carcass and muscle tissue breakdown
3. Calculate numerous grades for slaughter animals
4. Communicate an understanding of current inspection standards
5. Communicate an understanding of current issues in the meat industry

Primary Learning PACT Skills that will be DEVELOPED and/or documented in this course

Through the student's involvement in this course, he/she will develop his/her ability in the following primary PACT skill areas:

1. Critical Thinking
 - The student will develop critical thinking skills through assignments, exams and in class activities.
2. Speaking
 - The student will develop oral speaking skills through a combination of individual and team exercises.

Secondary skills (developed but not documented):

Teamwork
Self-Concept
Problem Solving

Ethical Conduct
Writing
Reading
Listening
Coping with Change

Major Summative Assessment Task(s)

These learning outcomes and the primary Learning PACT skills will be demonstrated by

1. Completion of a numerous assignments related to a meat industry trends, issues and technologies (critical thinking)
2. Completion of several individual and group oral presentations (speaking)

Course Content

- I. Themes – Key recurring concepts that run throughout this course:
 - A. Carcass composition
 - B. Nutritional value of muscle foods
- II. Issues – Key areas of conflict that must be understood in order to achieve the intended outcome:
 - A. History of USDA requirements
 - B. History of consumer trends
 - C. Muscle composition
- III. Concepts – Key concepts that must be understood to address the issues:
 - A. Differences between red meats, poultry, seafood and game meat
 - B. Muscle types and location
 - C. Fat types and location
 - D. Basic animal anatomy
 - E. Terminology related to carcass composition
- IV. Skills/Competencies – Actions that are essential to achieve the course outcomes:
 - A. Problem solving
 - B. Speaking
 - C. Reading
 - D. Writing
 - E. Critical thinking
 - F. Application of concepts

Learning Units

- I. History of the meat industry
 - A. Pre-historic times
 - B. Mosaic laws
 - C. Early US industry
 - D. Current trends
- II. Today's inspection and grading systems
 - A. Requirements of the industry
 - B. USDA involvement
 - C. Beef grading

- D. Sheep grading
- E. Swine grading

III. Carcass breakdown

- A. Beef
- B. Sheep
- C. Swine
- D. Poultry

IV. Nutritive value of muscle foods

- A. Properties of meat
- B. Nutritional breakdown
- C. Species comparisons
- D. Consumer influence

Learning Activities

Lecture, instructor-led class discussions, group study, field trips, student and group presentations.

Grade Determination

The student will be graded on completion of exams, quizzes, homework and in-class assignments, class participation, and other methods of evaluation at the discretion of the instructor.