Course Title: Meat Science. (3) I, II.

Course Description:
An introduction to the red meat industry relating the fundamental properties of muscle structure, chemistry, and physiology to meat quality, composition, processing, nutritional value, and marketing. The laboratory will demonstrate the conversion of animals to meat and by-products, and meat processing technology. Two hours lec. and two hours lab a week. Pr.: BIOL. 198. ASI-350-0-0104.

Student Performance Objectives:

1. Outline and discuss the economic impact of the meat industry in Kansas and USA.
2. Sketch, label and describe muscle structure.
3. Compare and contrast the physical and biochemical properties of muscle, fat, and connective tissue as related to meat quality and palatability.
4. Describe relationships between animal traits, postmortem muscle physiology and meat physical properties.
5. List/discuss the elements of meat inspection.
6. Identify USDA beef, pork and lamb grading factors.
7. List and describe the essential processes of meat curing, sausage manufacture, and meat preservation.
8. Match the different kinds of microorganisms with meat spoilage and food illness characteristics.
9. Describe the role and uses of meat by-products.
10. Discuss the nutritional contributions of meat in the human diet.
11. Compare and contrast slaughter, inspection and fabrication procedures for beef, lamb and pork.
12. Identify wholesale and retail cuts of beef, lamb and pork based on bone and muscle structure.
13. Identify proper methods of thermal processing to maximize palatability and nutritive value.
14. Describe KSU meat teaching, research and extension.

Instructor: M.C. Hunt
I. The meat industry in Kansas and the USA.
II. Muscle structure, contraction, and metabolism.
III. Conversion of muscle to meat via postmortem changes.
IV. Meat animal growth and development.
V. Physical properties of meat.
VI. Meat palatability and its relationship to cookery.
VII. Meat processing systems
VIII. Meat grading, inspection, and humane slaughter.
IX. Meat curing and sausage manufacture.
X. Meat microbiology and preservation
XI. Nutritional value of meat products.
XII. Carcass fabrication, muscle and bone anatomy, cut identification.
XIII. Postmortem technology; science and application.

*Many of the above topics will be the subject of the laboratory demonstrations.

Grade is based on lecture and laboratory practical examinations and outside assignments.


Should follow a college biology course.

A modern meat processing facility will be used for this course.