

ANEQ 470: Meat Processing Systems (Capstone)

4 credit hours

Writing Intensive Course (Exams)

Open to undergraduate and graduate level students

Prerequisite: ANEQ 360 Animal Meat Science

Lecture: TR 12:30 – 1:45 p.m.; Animal Science Rm 031/033

Lab: Friday 2 – 3:50 p.m.; Animal Science Rm 031/033 & Field Trips

Instructor:

Dale R. Woerner, Ph.D.

Center for Meat Safety and Quality

Department of Animal Sciences

Office: Animal Science 048

Phone: 970-491-7615

Email: Dale.Woerner@ColoState.edu

Office Hours: By appointment

Graduate Teaching Assistants:

Devin Gredell, M.S.

Graduate Research Assistant

Center for Meat Safety and Quality

Department of Animal Sciences

Office: Animal Science 063

Email: Devin.Gredell@colostate.edu

Cody Gifford, M.S.

Graduate Research Assistant

Center for Meat Safety and Quality

Department of Animal Sciences

Office: Animal Science 053

Email: cgiffor3@rams.colostate.edu

Course Description:

The course will provide students with an advanced understanding of the manufacturing, packaging, distribution, storage, and cooking of meat products.

Course Objectives:

- The successful student enrolled in this course will develop an in-depth understanding of animal harvest, muscle nomenclature, meat animal anatomy, conversion of muscle to meat, meat fabrication, fresh meat processing, and processed and cured meat processing
- The successful student enrolled in this course will develop an understanding of animal protein applications for everyday muscle foods
- The successful student enrolled in this course will have experienced a hands-on opportunity for an enhanced understanding of muscle foods
- The successful student enrolled in this course will have been introduced to commercial processing environments and facilities

Course Content:

- Beef, pork, and lamb harvest: Learning the processes and procedures for the harvesting of meat animals. Hands-on harvest during laboratory sections.
- Muscle nomenclature and anatomy: Identification and naming of individual muscles found in muscle cuts.
- Beef, pork, and lamb carcass fabrication: Learning the processes and procedures for the fabrication of meat animals. Hands-on carcass fabrication during laboratory sections.
- Fresh meat processing: Students will learn and apply the manufacturing, packaging, distribution, storage, and cooking of fresh meat products.
- Meat Sensory and Cookery: Students will be introduced to the science of meat sensory and cookery.

Text and Materials:

- 1) *Bovine Myology & Muscle Profiling*. National Cattlemen's Beef Association (Required, Provided)

Grading Policies:

Grading Scale:

89.5 – 100%	A
79.5 – 89.49%	B
70 – 79.49%	C
60 – 69.49%	D
< 60%	F

* + / - grading designations will not be utilized

1,000 total points will be utilized for the course grade

- 400 points for lecture examinations and final (3 lecture exams @ 100 pts each plus 1 final exam @ 100 pts)
- 150 points for anatomy Quizzes and laboratory exercises (15 weekly quizzes @ 10 pts. each)
- 200 Product development and final project report

Excused absences must be pre-approved by the instructor or the student must provide valid justification for the absence. CSU Policy on Class Attendance and Final Exams, found in the Advising and Registration section of the University General Catalog (<http://www.catalog.colostate.edu>), applies to this course.

Academic Integrity:

CSU policy on academic integrity, found in the Student Rights and Responsibilities section of the University General Catalog (<http://www.catalog.colostate.edu>), applies to this course.

Course Schedule (Tentative):

	Lecture	Lab
Week 1	Course Introduction; Intro to Beef Fabrication	No Lab
Week 2	Animal Harvest, Offals & Rendering	Beef Plant Tour, Greeley, CO
Week 3	Conversion of Muscle to Meat	Lamb Plant Tour, Greeley, CO
Week 4	Conversion of Muscle to Meat;	Harvest Tour, Innovative Foods, Evans, CO
Week 5	EXAM I (2/17) ; Aspects of Meat Quality; Tenderness, Juiciness and Flavor	EXAM I
Week 6	Aspects of Meat Quality; Tenderness, Juiciness and Flavor	Sensory and Shear Force Laboratory
Week 7	Fresh Meat Color & Packaging	Portioning and foodservice distribution plant tours
Week 8	EXAM II (3/10) ; Specifications, Anatomy and Carcass Fabrication	EXAM II
Week 9	Carcass Anatomy and Fabrication	Fabrication- CSU Meat Lab
Week 10	Carcass Anatomy and Fabrication	Fabrication- CSU Meat Lab
Week 11	Carcass Anatomy and Fabrication	Fabrication- CSU Meat Lab
Week 12	Seasoned and Marinated Fresh Meat Products	Enhancement, Tenderization Restructured Meat Products- CSU Meat Lab
Week 13	Meat Cookery and BBQ; EXAM III (4/21)	EXAM III
Week 14	Product Development	Roasting,Grilling, and BBQ
Week 15	Product Development	Open Lab-Product Development CSU Meat Lab
Week 16	Take Home Final Examination (5/8; 2-4 pm)	Product Showcase; Monday (5/8; 2-4 pm)