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:
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Office Hours: By appointment

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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):

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