

Course title and number **ANSC 627 Carcass Composition and Quality**
Term **Spring 2017**
Meeting times and location **T R 8 to 9:15 AM, KLBG 300**

Course Description and Prerequisites

Survey of scientific literature regarding carcass composition; quality and palatability of meat animals; factors that affect differences among animals of the same species; the impact on value and usefulness.

Objectives

1. To survey the literature with respect to the current status of carcass composition and quality/palatability research;
2. To discuss the historical aspects of the development of grade standards for beef, pork and lamb carcasses;
3. To acquaint the student with important scientific methodology and the techniques necessary to be able to conduct research and interpret information on composition and quality/palatability;
4. To contrast and compare systems for carcass evaluation in the United States with systems from other countries throughout the world; and,
5. To relate how sex-class, breed and management affects carcass composition and quality/palatability of beef, pork and lamb.

Student Learning Objectives

1. The student will understand the basic scientific background behind USDA grade standards
2. The student will understand the basic statistical tools used to analyze palatability and composition research
3. The student will gain a basic understanding of the role of scientific articles in carcass composition and quality research.
4. The student will know the way that carcasses are graded/classified in major countries around the world.

Instructor Information

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Office hours **Variable**
Office location **Room 348 KLBG**

Lectures

Lectures will consist of discussions of research papers and material from the textbook and other reading assignments. Students are encouraged to enter into discussions, and, at times, will be asked to make short presentations regarding research information especially if it relates to an area they have conducted research or have a special interest in.

Tests

The tests are take-home and are designed to allow the student to gather information from many sources and answer complex questions regarding carcass composition and quality/palatability. The tests will be given to the student near the end of each module and will be due one week later. This method of testing is the best way to measure learning of this complex material. Although students are requested to do their own work, I encourage joint discussions among students regarding complex issues. This interchange improves the learning process. Students are requested to use Endnote, a bibliographic tool, to help them with citations for their tests. You can get this software at software.tamu.edu. Also, please use the Journal of Animal Science styleguide for preparing answers to the tests including citations and bibliography.

Research presentation

Students will be required to make research presentations covering some issue that is related to the subject matter material from this course. The presentation is due at the end of the class and will comprise one-fifth of the final grade. Groups will be assigned to work together on these presentations, and dates for the presentations will be determined during the first couple of weeks of class.

Examination and grading

The schedule will be as follows:

Item	Worth	Date Given	Date Due
Examination A	100 points	February 7	February 14
Examination B	100 points	March 2	March 9
Examination C	100 points	April 6	April 13
Examination D	100 points	April 22	May 4
Team presentation	100 points	TBD	
Total	500 points		

Grades will be assigned as follows: 450 points or higher = A; 400 to 449 points = B; 350 to 399 points = C; 300 to 349 = D; and less than 300 = F.

Attendance policy

Because this is a graduate course, it is difficult for graduate students to be in class every time it meets. I encourage class attendance because this is a good way to learn from the interchange of ideas. I also understand the necessity to be gone from class conducting the research that will be used in this and following semesters to help increase the knowledge-base of students. Students who miss should check with me to obtain handout materials they miss.

Lectures

Module 1--Prediction and Instrument Assessment

Lecture 1	January 17	Introduction
Lecture 2	January 19	Prediction equations in carcass evaluation
Lecture 3	January 24	Prediction equations in carcass evaluation
Lecture 4	January 26	Palatability evaluation of meat
Lecture 5	January 31	Determining carcass composition of meat animals
Lecture 6	February 2	Instrument assessment of live animals
Lecture 7	February 7	Instrument assessment of carcasses

Module 2--Pork

Lecture 8	February 9	Pork carcass quality
Lecture 9	February 14	Pork carcass quality
Lecture 10	February 16	Pork carcass composition
Lecture 11	February 21	Pork carcass composition
Lecture 12	February 23	USDA pork carcass grading
Lecture 13	February 28	Pork composition & quality as influenced by sex-class and breed
Lecture 14	March 2	Pork composition & quality as influenced by growth promotants

Module 3--Beef

Lecture 15	March 7	Beef carcass quality
Lecture 16	March 9	Beef carcass quality
Lecture 17	March 21	USDA beef quality grade development
Lecture 18	March 23	Beef carcass composition
Lecture 19	March 28	Beef carcass composition
Lecture 20	March 30	USDA beef yield grade development
Lecture 21	April 4	Beef composition & quality as influenced by sex-class and breed
Lecture 22	April 6	Beef composition & quality as influenced by growth promotants

Module 4--Lamb and World Grading/Classification Systems

Lecture 23	April 11	USDA lamb quality grade development
Lecture 24	April 13	USDA lamb yield grade development
Lecture 25	April 18	Lamb composition & quality as influenced by sex-class, breed & growth promotants
Lecture 26	April 20	Carcass grading/classification systems of the world -- EU and Canada
Lecture 27	April 25	Carcass grading/classification systems of the world -- Japan
Lecture 28	April 27	Carcass grading/classification systems of the world -- Australia and New Zealand

List of books and references

Books and Book Chapters

- Berg, R.T., and Butterfield, R.M. 1976. "New Concepts of Cattle Growth." John Wiley & Sons, New York, NY.
- Kempster, A.J., Cuthbertson, A., and Harrington, G. 1983. "Carcase Evaluation." Westview Press, Boulder, Colorado.
- Lawrie, R.A. 1998. "Lawrie's Meat Science" (6th Edition). Technomic Publishing Company, Inc., Lancaster, Pennsylvania.
- Lister, D. 1984. "In Vivo Measurement of Body Composition in Meat Animals." Elsevier Applied Science Publishers, London, England.
- National Pork Producers Council. 1991. "Procedures to Evaluate Market Hog Performance" (3rd Edition). National Pork Producers Council, Des Moines, IA
- Savell, J.W., and Cross, H.R. 1991. Reassessment of significant factors influencing carcass composition. In "Developments in Meat Science -- 5 (Lawrie, R.A., Ed.)," Elsevier Applied Science, London and New York.
- Savell, J.W., and Smith, G.C. 2009. Meat Science Laboratory Manual (8th ed.). American Press, Boston.
- Swatland, H.J. 1984. "Structure and Development of Meat Animals." Prentice-Hall, Inc., Englewood Cliffs, NJ.

Journal Articles

- Ferrell, C.L., and Cornelius, C.L. 1984. Estimation of body composition of pigs. *J. Anim. Sci.* 58:903.
- Hedrick, H.B. 1983. Methods of estimating live animal and carcass composition. *J. Anim. Sci.* 57:1316.
- MacNeil, M.D. 1983. Choice of a prediction equation and the use of the selected equation in subsequent experimentation. *J. Anim. Sci.* 57:1328.

USDA Grade Standards

United States Standards for Grades of Carcass Beef

United States Standards for Grades of Lamb, Yearling Mutton, and Mutton Carcasses

United States Standards for Grades of Pork Carcasses

Other Information

History of Meat Grading in the United States

The Role of USDA's Beef Grading Program in the Marketing of Beef by Dr. Craig A. Morris,
USDA

Journal of Animal Science Instructions for Authors

European Union COUNCIL REGULATION (EC) No 1183/2006 of 24 July 2006 concerning the Community scale for the classification of carcasses of adult bovine animals (codified version)

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

Academic Integrity

*For additional information please visit: <http://www.tamu.edu/aggiehonor>
“An Aggie does not lie, cheat, or steal, or tolerate those who do.”*