

Poultry Processing (Syllabus and Class Schedule)
PO/FNH 4514/6514

Class time: Monday 1:00 -1:50 PM – Lecture
Wednesday 1:00 -1:50 PM – Lecture
Friday 1:00 -1:50 PM – Lecture
Wednesday 2:00 – 3:50 PM – Laboratory

Location: 117 Poultry Science

Instructor:

Dr. Chander Shekhar Sharma
Assistant Professor
113 Hill Poultry Science
662-325-2017
Email: csharma@poultry.msstate.edu
Office hours: 10:00 to 12:00 Friday or by appointment

Course Description:

PO 4514 includes three hours lectures and two hours laboratory emphasizing on the principles of operation and study of modern poultry processing; first, second and further processing including poultry inspection, regulations and marketing of poultry products. This course also comprises comprehensive understanding of various processing techniques used in manufacturing of further processed poultry products.

Course Objectives and learning outcomes:

The basic objective of this course is to provide the students with a comprehensive understanding of fundamentals and practical applications of modern poultry processing and working knowledge of processing of poultry meat, manufacturing of different commercial poultry products, regulatory issues related to processing and shell egg processing.

Textbook:

Textbooks are NOT required, all essential material will be provided. However, the following textbooks and journals are recommended for information during the semester

- Poultry Meat Processing (1st ed. Sams, 2001 or 2nd ed. Owens, Alvarado and Sams, 2010)
- Poultry Products Technology – An Industry Guide (Shai Barbut, 2002)
- Poultry Products Technology (Mountney and Parkhurst, 1995)
- Processed Meats (Pearson and Gillett, 1996)
- **Journals:** Poultry Science, Journal of Applied Poultry Research, World's Poultry Science Journal, Journal of Food Protection

Evaluation Criteria:

Students in this class will be graded based on exams, quizzes, lab reports, class attendance, and participation. It is not required to submit a lab report for all laboratory sessions, instructor will notify well in advance for submission of lab reports. As a part of the laboratory evaluation, students will select and analyze two recent peer-reviewed research articles (approved by the instructor) related to this class. Students will review and analyze those articles and prepare a short oral presentation (group presentation) including the introduction, brief methodology, results, and discussion. The topics should be approved by mid-point of semester.

Exam-I	15%
Exam-II	15%
Exam-III	15%
Exam-IV	15%
Final exam	15%
Class/lab attendance and participation	5%
Laboratory reports/quizzes	15%
Laboratory topic presentation (group project)	5%

Examination questions will come from lecture and text material. Each exam is designed to cover the material covered since the previous exam. A full lecture period will be allowed for completion. Questions may be in any form.

Grading Scale:

Grades will be assigned on a 10 point scale

A	90 – 100
B	80–89
C	70–79
D	60–69
F	<60

Graduate Student evaluation

Graduate students will be required to submit a term paper (10-15 pages), in the form of a scientific review paper on a particular topic relevant to poultry processing in addition to the all the requirements mentioned above. All topics must be approved by the instructor. Additionally, you will be asked to present your topic as a brief lecture. Please adhere to the stated deadlines. This written term paper and oral presentation will count 10% and 5% of the final grade, respectively. So the weightage for Exam-I, II, III and IV will be 12.5% each instead of 15% as mentioned above for rest of the class.

Attendance

Attendance is essential to your success in this class. Excused absences include university approved field trips, competitive events, illnesses, and other reasons as per university rules. For university activities a note is required IN ADVANCE in order to receive an excused absence. You are responsible for missed assignments due to absences. Please make sure that you are on time on the scheduled examination time

and date. No extra time will be allowed for the examination. There will be **NO MAKE UP EXAMS.**

Processing plant tours:

Students will be visiting commercial poultry processing plant as a part of this course. All travel arrangements will be made for the students and the final tour details will be finalized after discussing the schedule with the students.

Laboratory Safety Procedures and rules

As few labs may include microbiological testing of the poultry products. The following rules must be followed for individual and others safety.

1. No sandals or open-toe shoes and no short pants. Proper attire should be worn in the laboratory (close-toed shoes, no loose clothes or jewelry)
2. Students should wear personal protective equipment as directed by the instructor such as laboratory coat, safety goggles, gloves etc.
3. All laboratory waste should be properly disposed of in appropriate designated areas: biohazard waste, sharps and broken glass etc.
4. No eating, drinks or use of tobacco products in the laboratory.
5. If you see other students, staff or faculty not adhering to these rules, it is your duty to remind them of their responsibility to safety.
6. Above all, use common sense around the meat lab to protect yourself and the others around you.

MSU Honor Code

"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Special Needs

Those students requiring special assistance are encouraged to talk to the instructor early on to make special arrangements involving tests, assignments, etc.

Instructor contact information: Room No. 113, Hill Poultry Science. Office phone number is 662-325-2017. Office hours: 10:00 to 12:00 Friday or by appointment. Email: csharma@poultry.msstate.edu

Please turn off your cell phones during class and laboratory sections!!!

Tentative Lecture Schedule

- Introduction, Class Orientation and Expectations
- Poultry Processing Overview/Poultry Industry
- Pre-slaughter phase/factors affecting poultry meat
- First Processing: Slaughter to chilling
- First Processing: Slaughter to chilling
- First Processing: Slaughter to chilling
- Second processing
- **Progress Exam I**
- Conversion of muscle to meat
- Mechanical separation of poultry meat
- Poultry Inspection and Grading
- Packaging
- Spoilage and Shelf life of poultry
- Microbial pathogens: live poultry
- **Progress Exam II**
- Poultry borne pathogens
- Antimicrobial interventions: poultry processing
- Further processing: Meat processing equipment
- Marination
- Curing and smoking
- Meat emulsions and protein gelation
- Sausages and casings

- **Progress Exam III**
- Coated products
- Canning and canned poultry products
- Meat color and flavor
- Sensory evaluation of poultry products
- Quality control of poultry products (guest lecture)
- Processing plant tour
- **Progress Exam IV**
- Nutritive value of poultry meat
- Shell Egg processing
- Shell egg quality and safety
- HACCP application in poultry processing
- Rendering and waste water treatment
- Kosher and Halal laws for poultry
- Animal Welfare, free range and organic poultry
- Final Review
- **Final Exam Dec. 12, 2013**

Tentative Laboratory Schedule

- Introduction to laboratories and laboratory safety
- Growout farms and poultry processing plant tour/equipment (on-campus)
- Poultry processing: first processing and yield calculation
- Poultry processing: second processing and yield calculation
- Microbiological testing of fresh poultry (spoilage microflora)
- Microbiological testing of fresh and ready-to-eat poultry products (pathogens)
- Marination techniques and evaluation of marinated product
- Product design and manufacturing: formed product
- Product design and manufacturing: emulsion product
- Poultry processing plant tour
- Plant sanitation
- HACCP (in class exercise)
- Lab presentation
- Lab presentation