

# ANS 4635C MEAT PROCESSING 2022

## SYLLABUS

|                      |  |
|----------------------|--|
| <b>Lecture:</b>      | Tuesday and Thursday, period 2, 8:30-9:20 a.m., Room ANS 156   |
| <b>Laboratory:</b>   | Thursday, periods 3-4 (9:35 a.m. – 11:30 a.m.), Room ANS 156, Meat Research Lab Room 249 and/or Meat Processing Facility |
| <b>Instructor:</b>   | Kyle M. Mendes<br>Office: 224B Animal Science<br>Cell: 209-556-7499<br>E-mail:kmenes15@ufl.edu                           |
| <b>Instructor</b>    | Tuesday, 10:00 a.m. - 11:00 a.m.   |
| <b>Office Hours:</b> | Thursday, 10:00 a.m. - 11:00 a.m. or by Appointment  |
| <b>Assistant:</b>    | Amy Bass, Room 251 Meat Research Lab, Animal Sciences Bldg. 459, Phone: 352-392-8511                                     |

### Course Description:

ANS 4635C/6932 includes two lectures and one laboratory exercise per week emphasizing principles for use of meat and poultry as food, process technology, culinary technology, meat/poultry inspection regulations and labeling, quality control procedures and marketing aspects.

**Course Objectives:** After completion of this course, students will have acquired:

- Hands-on experience in the manufacturing of meat and poultry products.
- Knowledge of quality control functions performed in meat and poultry processing facilities.
- Knowledge of culinary technology applications for meat and poultry products.
- Knowledge of the governmental agencies, inspection regulations and labeling policies associated with meat and poultry processing.

### Required Class Materials:

Meat and Poultry Processing PowerPoint Presentations  
Meat and Poultry Processing Laboratory Manual  
The PowerPoint presentations and lab manual will be provided online by the instructor.

### Suggested References

1. Codes of Federal Regulations (CFR). 2017. Title 21. Food and Drug, Parts 100 – 190 (food labeling, food claims, food additives, etc.). Access at <https://www.ecfr.gov/cgi-bin/ECFR?page=browse>
2. Codes of Federal Regulations (CFR). 2014. Title 9. Animals and Animal Products, Chapter III Food Safety and Inspection Service, Parts 300-592. Access at <https://www.ecfr.gov/cgi-bin/ECFR?page=browse>
3. Hedrick, H., Forrest, J., Aberle, E. D. and Judge, M. D. 2001. Principles of Meat Science. W. H. Freeman and Co.
4. Stadelman, W. J., Olson, V. M., Shemwell, G. A. and Pasch, S. 1988. Egg and Poultry- Meat Processing. VCH Publishers.
5. Romans, J. R., Costella, W. J., Carlson, W. W., Greaser, M. L. and Jones, K. W. 2000. The Meat We Eat. 14<sup>th</sup> ed. Prentice Hall.
6. Pearson, A. M. and Tauber, F. W. 1984. Processed Meats. 2<sup>nd</sup> ed., Van Nostrand Reinhold Co.

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## Course Structure

This course will involve two lectures and one laboratory activity per week. Students will be divided into groups as designated by the instructor, and each group will prepare a laboratory report for each of the 8 laboratory exercises using the information provided in the Meat and Poultry Processing Laboratory Manual. Laboratory attendance is **mandatory, and 2.5 points for each laboratory exercise** will be given for attendance.

**Special Project:** Students will work in groups to develop a new meat, poultry or seafood product utilizing USDA and USFDA regulations. Students will determine packaging, marketing strategies, cost, storage conditions and food safety guidelines for the product.

## Evaluation of Grades

| Assignment   | Total Points |
|--|--------------|
| Exams 3@ 100 points each   | 300          |
| Lab reports 8 @ 20 points each   | 160          |
| Special Project 1 @ 100 points each  | 100          |
| TOTAL  | 560          |
| <b>POP QUIZZES: There will be pop quizzes to insure that students are studying and are prepared for the major exams.</b> |              |

## Grading Policy:

| Points  | Grade | %            |
|---------|-------|--------------|
| 532-560 | A     | 95.0 to 100  |
| 504-531 | A-    | 90.0 to 94.9 |
| 476-503 | B+    | 85.0 to 89.9 |
| 448-475 | B     | 80.0 to 84.9 |
| 420-447 | B-    | 75.0 to 79.9 |
| 392-419 | C+    | 70.0 to 74.9 |
| 364-391 | C     | 65.0 to 69.9 |
| 336-363 | C-    | 60.0 to 64.9 |
| 308-335 | D+    | 55.0 to 59.9 |
| 280-307 | D     | 50.0 to 54.9 |
| 252-279 | D-    | 45.0 to 49.9 |
| <252    | E     | <45.0        |

## Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## Attendance and Make-Up Work

Laboratory attendance is mandatory, and 2.5 points for each laboratory exercise will be given for attendance. The university recognizes the right of the individual professor to make attendance mandatory. After due warning, professors can prohibit further attendance and subsequently assign a failing grade for excessive absences. Please read attendance information found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

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| DATE           | LECTURE  | LABORATORY ACTIVITY  | Lab Due Date |
|----------------|--|--|--------------|
| 1-9-18         | Introduction and lecture   |  |              |
| 1-11           | Food Safety, Sanitation and Preservation   | Lab 1a Quality Control - Good Manufacturing Practices; Lab tour            | 1/16         |
| 1-16           | Food Safety, Sanitation and Preservation   |  |              |
| 1-18           | Methods for Product Evaluation   | Lab 1b Quality Control - Plant Sanitation Procedures                       | 1/25         |
| 1-23           | Nonmeat ingredients, Labeling and Governmental Regulations   |  |              |
| 1-25           | Allergens  | Lab 2a - Production of Ground Beef Patties                                 | 2/8          |
| 1-30           | Meat Chemistry: Water holding Capacity of Muscle Protein   |  |              |
| 2-1            | Muscle Color   | Lab 2b – Evaluation of Ground Beef Patties                                 | 2/8          |
| 2-6            | Marination Technology  |  |              |
| 2-8            | <b>EXAM I</b> (Food Safety, Nonmeat Ingredients, Meat Chemistry, Marination; Muscle Color, Poultry Processing) | Lab 3a - Production of Marinated Chicken Breast                            | 2/22         |
| 2-13           | Packaging and Casings  |  |              |
| 2-15           | Allergens in Meat and Poultry Processing   | Lab 3b - Evaluation of Marinated Chicken Breast                            | 2/22         |
| 2-20           | Smoking Technology; Curing Technology  |  |              |
| 2-22           | Calculations for cooked sausage and cured hams:  | Lab 4a – Production of Pork and Turkey Bacon                               | 3/13         |
| 2-27           | Special Project Introduction   |  |              |
| 3-1            |  | Lab 4b – Evaluation of Pork and Turkey Bacon                               | 3/13         |
|                |  |  |              |
| <b>3/5-3/9</b> | <b>SPRING BREAK</b>  |  |              |
| 3-13           | Poultry Processing: Conventional and Pastured Poultry  |  |              |
| 3-15           | <b>EXAM II</b> (Packaging and Casings, Smoking, Curing, Allergens, Fermentation, emulsion)                     | Lab 5a - Production of Fermented products: Beef, and Turkey Summer Sausage | 3/27         |
| 3-20           | Lab 5b. Evaluation of Summer Sausage   |  | 3/27         |
| 3-22           | Emulsion Technology  | Lab 6a – Production of Meat, and Poultry Frankfurters                      | 4/3          |
| 3-27           | Lab 6b. Evaluation of Frankfurters   |  | 4/3          |
| 3-29           | Lab 8 - Poultry Plant Tour, Live Oak, FL; Special project ingredient list due                                  |  | 4/5          |
| 4-3            | Organic and Natural Foods  |  |              |
| 4-5            | Lab 7 - Independent Lab – Final Formulation and ingredient list for special project                            |  | 4/10         |
| 4-10           | <b>EXAM III</b> (Culinology, Organic and Natural Foods, Special project)                                       |  |              |
| 4-12           | Culinary Arts Demonstration  |  |              |
| 4-17           | Special Project Preparation  |  | 4/19         |
| 4-19           | Lab 9a and Lab 9b - Special Project PowerPoint Presentation and Product Evaluation;                            |  | <b>4/19</b>  |
| 4-24           | <b>Final written project due April 24 on or before 5:00 p.m.</b>   |  | <b>4/24</b>  |

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## GUIDELINES FOR PREPARING LAB REPORTS

### LABORATORY REPORT FORMAT

1. Student's Name
2. Date
3. Group Number and Group Members
4. Title of Experiment
5. Purpose: A statement of the purpose of the experiment should be made. This should be no more than one to three sentences (maximum).
6. Materials and Methods: It is not necessary to restate the materials and methods, because they are given in the lab handout. However, please state any modifications (if made) to the stated methods in the handout.
7. Results and Discussion: Include all raw data, and the final data for each experiment. Write a complete discussion of the results given in your summary tables. Your discussion should be a logical explanation of the results. Explanations can usually be found in meat, poultry or food science textbooks, journals or class notes. If you are unable to find an explanation, you may formulate your own if it is logical. Be sure to discuss all parameters calculated in your summary tables. Respond to all questions and/or requests listed by the instructor at the end of each laboratory exercise.
8. Conclusion/Summary
9. References: Use references in your discussion. List all references that you used to prepare your report. Text citation and bibliography should be in the style of the Journal of Food Science, Animal Science or Poultry Science.

### GRADING

Grading for laboratory exercises is as follows:

|   |   |
|---|---|
| Attendance                                    | 2.5 points  |
| Laboratory exercise flow chart                | 2.5 points (due each Thursday Morning at 8:30 a.m.) |
| Materials and Methods, Purpose and References | 5 points  |
| Data, Discussion and Conclusion(s)            | <u>10 points</u>                                    |
| Total Points                                  | 20  |

### THINGS TO REMEMBER

1. Except for raw data collected during lab, all lab report information must be typed. Raw data should be legibly handwritten and attached to lab reports.
2. You must discuss your data. Give reasons for your findings and compare to references.
3. Reports are due at the next lab period following the completion of each experiment, unless otherwise instructed.
4. Late reports will have **TWO (2) POINTS PER LATE DAY (INCLUDING WEEKENDS) SUBTRACTED FROM Your Total LAB SCORE** (i.e., after 5 days, the report grade will have decreased by 10 points). After the 20 points have been exhausted, two points per day will be subtracted from your final grade until the report is submitted.
5. Missing Lab Data: If your lab report is incomplete because of missing data which might be due to a group member not recording, forgetting to record the data, forgetting to check sample, or etc., each member in the group will receive - (minus) 5 points from her/his lab report as a penalty. I would advise that the group retain a sample for re-testing until the analysis is complete and all data is recorded, if necessary, to avoid this penalty.
6. Laboratory Absence: You are expected to attend and participate in all laboratory activities. Roll will be called and 2.5 points will be deducted from your laboratory score for each absentee. In the event that you miss a lab you will need to get the data from your group member(s). If you skip labs, and/or your group feels that you are not participating in the laboratory activities, then your group is not obligated to give you their lab data. Always remember that you learn by doing, and this is the purpose of laboratory activities.

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**Laboratory Policies:** Laboratory policies are designed for your safety, and the production of safe, wholesome and unadulterated food products. Our processing facilities are USDA inspected. All guidelines, policies and procedures pertaining to a USDA inspected facility are practiced and adhered to in our facilities from pre-slaughter through final product sales in our retail store. Because of the seriousness of these policies, any student violating any of the following policies will receive a **5-point penalty** (i.e., **5 points** will be deducted from your laboratory report for the penalty that occurred during that particular laboratory activity).

## Equipment Required for Laboratory

1. Rubber boots or shoes with rubber soles to avoid slipping. **NO SANDALS OR OPEN-TOE SHOES.**
2. Older clothes that will be washed each week -- no sleeveless shirts or blouses!
3. **NO SHORT PANTS!**

## Laboratory Rules for Safety and Sanitation

1. Hard hats and lab coats will be provided and must be worn when working in the meat processing and meat research laboratories. You are responsible for keeping the hard hats clean.
2. Students will use safety equipment when required. This equipment is provided.
3. Except for wedding rings/bands, no jewelry is allowed. However, be aware that rings of any sort may accidentally become entangled in equipment ridges/grooves, etc. and cause severe damage or loss of fingers. It is for this reason that the instructor recommends that all jewelry including wedding rings/bands be removed prior to entering the processing laboratory.
4. No eating or use of tobacco products in the meat processing laboratory is allowed.
5. Above all, use common sense around the meat lab to protect yourself and others around you.
6. 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.

## Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

## Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

## Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

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## **Services for Students with Disabilities**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)

## **Campus Helping Resources**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*  
Counseling Services, Groups and Workshops, Outreach and Consultation, Self-Help Library, Wellness Coaching
- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

## **Student Complaint Process**

In the event that a student wishes to file a complaint about the course, the student should access the following website for the appropriate instructions and documents:

[https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)