

Course Title: Poultry and Egg Processing
Course Code: FT-204
Resource Person: Aqsa Akhtar
Department: Food Science and Technology

School of Food and Agricultural Sciences (SFAS) Vision

SFAS endeavors to be a premier center of excellence, offering innovative, high-quality education and professional programs aimed at achieving academic and research excellence, enriching the lives of individuals and making a difference in the world of academia and industry, and to develop a society of professionals, who can contribute towards the betterment of their respective communities.

SFAS Mission

SFAS Mission SFAS provides an intellectually rich, collaborative, research-focused and dedicated learning environment for students, faculty, and staff, while serving the community at various levels. SFAS at UMT has been established with the aim to integrate recent advances in food sciences/technology and agricultural innovations.

Program Learning Objectives (PLO's)

Students graduating with BS Food Science and Technology shall be able to:

1. *Explain the basic principles of food sciences, and its multidisciplinary scope.*
2. *Explain the physical, chemical and biological properties of food and their effects on food safety, and sensory and nutritional quality.*
3. *Apply analytical techniques to characterize composition, and to identify physical, chemical and biological changes in foods.*
4. *Explain the effects of food processing, engineering, preservation, packaging, and storage on food safety and quality.*
5. *Identify the importance of food laws and regulations in ensuring safety and quality of the processed/manufactured foods.*
6. *Conduct applied research and use statistical tools in experimental design and data analysis.*
7. *Apply acquired knowledge to real world situations in food systems, components, production, and processes.*
8. *Apply critical thinking to professional problems.*
9. *Communicate effectively in both oral and written forms.*
10. *Develop organizational, teamwork, and leadership skills.*
11. *Demonstrate professional skills and thoughts of ethical, social integrity, and respect for diversity.*
12. *Demonstrate preparedness for continued reflective practice, and lifelong learning relevant to careers in food sciences.*

Course Objectives (CLO's)

After the completion of this course, a student will be able to:

1. Explain different techniques involve in the processing of poultry meat and eggs.
2. Demonstrate the effect of diet and environmental conditions on the nutritional profile of poultry meat and eggs.
3. Deliver information on different biochemical and microbial quality indicators of meat and eggs.
4. Find out the current issues in the processing and preservation of poultry meat and eggs.
5. Identify the importance of different food quality and safety standards for the safe production of poultry meat and egg products.

Learning Objectives

Sr#	Course Learning Objectives	Link with Program Learning Objectives
1.	Explain different techniques and their effect on the processing of poultry meat and eggs.	Students will be easily understanding the different techniques used for the processing and preservation of the meat and their effect on the quality of the meat.
2.	Demonstrate the effect of diet and environmental conditions on the nutritional profile of poultry meat and eggs.	Students are expected to know about the techniques to understand the composition of the different food products and responsible factors which lowers the quality of the meat.
3.	Deliver information on different biochemical and microbial quality indicators of meat and eggs.	Students must be able to explain the physical, chemical and biological properties of food and their effects on food safety, and sensory and nutritional quality.
4.	Find out the current issues in the processing and preservation of poultry meat and eggs.	Students will be able to explain the effects of food processing, engineering, preservation, packaging, and storage on food safety and quality.
5.	Identify the importance of different food quality and safety standards for the safe production of poultry meat and egg products.	Students will be able to Identify the importance of food laws and regulations in ensuring the safety and quality of the processed/manufactured foods.

Course Learning Outcomes

After successful completion of the course work, students have the skills to:

1. Differentiate between different poultry breeds of meat and eggs.
2. Comprehend the nutritional profile of poultry meat and eggs.
3. Identify the biochemical changes that occur during the processing and storage of poultry meat and eggs.
4. Utilize the different poultry meat and egg processing and preservation techniques on the quality and safety of meat and eggs
5. Evaluate the freshness of poultry meat and eggs by using different analytical techniques.

Teaching Methodology

Interactive classes:

1. Use media to increase student engagement and improve learning outcomes.
2. Try adding metaphors to help students remember details.
3. Give students a real-world context with extra projects to reinforce skills.
4. Provide practical practice within your lessons. Making it relatable will do wonders.

Case-based teaching:

Class Participation

Positive, healthy and constructive class participation will be monitored for each class. Particular emphasis will be given to participants during the presentation sessions. How the question is asked or answered will also be noted. Your behaviour, as business executives in the class will contribute to the class participation marks.

Word of Advice

Assignments/ projects are very demanding and time-consuming. Since you might be exposed to the real corporate environment, the ensuing reality checks could be demoralizing and frustrating. So, you must learn to handle intragroup conflicts and any clash of interests. Unless you start working on the assignments/ projects right away from the very first day you are likely to miss the deadlines.

Participant Responsibilities:

Students should be responsible enough to practice whatever they have learned during class sessions. They should also implement it in other subjects as well. They are expected to come prepared in the class.

Class activities:

Presentations

After careful analysis, the resource person will constitute the groups to achieve balanced heterogeneity among groups, for group assignments/projects and will have the final decision in this regard. Every member of the group is expected to be able to handle all aspects of the assignments. Groups are not allowed to choose presenters for various parts of the presentations; instead, resource person will nominate them. Individuals will be judged for their understanding of the topic through question handling. Q/A section of the presentations will weigh heavily for grading of assignments/ projects.

Class Discussions:

During class, each student will work in a team on discussion questions. Teams will be assigned questions, allowed ten minutes for Internet research, and permitted five minutes to present their results. Points are earned by active participation with your team.

Applied Projects:

This is a practical-based course. Regular attendance is the best predictor of success. Students will perform different practices with detailed instructions, teacher demonstrations, and video tutorials.

STUDENTS ARE REQUIRED TO READ AND UNDERSTAND ALL ITEMS OUTLINED IN THE PARTICIPANT HANDBOOK

Class Policy:

Be on Time

You need to be at class at the assigned time. After minutes past the assigned time, you will be marked absent.

Mobile phone Policy

TURN OFF YOUR MOBILE PHONE! It is unprofessional to be texting or otherwise.

Email Policy

READ YOUR EMAILS! You are responsible if you miss a deadline because you did not read your email. Participants should regularly check their university email accounts regularly and respond accordingly.

Class Attendance Policy

A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddings are absences and will not be counted as present. You have the opportunity to use 6 absences out of 30 classes. Participants with less than 80% of attendance in a course will be given a grade 'F' (Fail) and will not be allowed to take end-term exams. International students who will be leaving for visas during the semester should not use any days off except for visa trips. Otherwise, they could reach short attendance.

Class Attendance Policy

A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddings are absences and will not be counted as present. You have the opportunity to use 6 absences out of 30 classes. Participants with less than 80% of attendance in a course will be given a grade 'F' (Fail) and will not be allowed to take end-term exams. International students who will be leaving for visas during the semester should not use any days off except for visa trips. Otherwise, they could reach short attendance.

Withdraw Policy

Students may withdraw from a course till the end of the 12th week of the semester. Consequently, grade W will be awarded to the student which shall have no impact on the calculation of the GPA of the student. A student withdrawing after the 12th week shall be automatically awarded an "F" grade which shall count in the GPA.

Moodle

UMT –LMS (Moodle) is an Open-Source Course Management System (CMS), also known as a Learning Management System (LMS). Participants should regularly visit the course website on MOODLE Course Management system and fully benefit from its capabilities. If you are facing any problem using Moodle, visit <http://oit.umt.edu.pk/moodle>. For further query send your queries to moodle@umt.edu.pk.

Harassment Policy

Sexual or any other harassment is prohibited and is constituted as a punishable offense. Sexual or any other harassment of any participant will not be tolerated. All actions categorized as sexual or any other harassment when done physically or verbally would also be considered as sexual harassment when done using electronic media such as computers, mobiles, internet, emails, etc.

Use of Unfair Means/Honesty Policy

Any participant found using unfair means or assisting another participant during a class test/quiz, assignments or examination would be liable to disciplinary action.

Plagiarism Policy

All students are required to attach a “Turn in” report on every assignment, big or small. Any student who attempts to bypass “Turn in” will receive an “F” grade which will count towards the CGPA. The participants submit the plagiarism report to the resource person with every assignment, report, project, thesis, etc. If a student attempts to cheat “Turn in”, he/she will receive a second “F” that will count towards the CGPA. There are special rules on plagiarism for final reports etc. all outlined in your handbook.

Communication of Results

The results of quizzes, midterms, and assignments are communicated to the participants during the semester and answer books are returned to them. It is the responsibility of the course instructor to keep the participants informed about his/her progress during the semester. The course instructor will inform a participant at least one week before the final examination related to his or her performance in the course.



Course Outline

Course code: FT-204

Course title: Poultry and Egg Processing

Program	BS Food Science and Technology
Credit Hours	3
Duration	16 Weeks
Prerequisites (If any)	Meat Science Food Processing and preservation Food Chemistry
Resource Person Name and Email	Aqsa Akhtar aqsa.akhtar@umt.edu.pk
Counseling Timing & Room #	6 hours per week (STD 502)
Contact no.	-
Web Links	-

Director Programme Signature _____

Date _____

Dean's signature _____

Date _____

Grade Evaluation Criteria

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

Marks Evaluation	Marks in percentage
Class Project/Presentation	15%
Quizzes	10%
Assignments	10%
Lab	20%
Mid-Term	20%
Final exam	25%
Total	100%

Recommended Text Books:

1. Hester, P. (2017). Egg Innovations and Strategies for Improvements: Elsevier Science.
2. Manafi, M. (2017). Poultry Science: IntechOpen.
3. Barbut, S. (2016). Poultry Products Processing: An Industry Guide: CRC Press.
4. Berlow, A. and Grandin, T. 2013. The mobile poultry slaughterhouse: building a humane chicken-processing unit to strengthen your local food system. Storey Publishing, LLC., USA.
5. Gwin, L., Thiboumery, A., & Stillman, R. (2013). Local Meat and Poultry Processing: The Importance of Business Commitments for Long-Term Viability: DIANE Publishing Company.
6. Russell, S. M. (2012). Controlling Salmonella in Poultry Production and Processing: Taylor & Francis.
7. Owens, C.M., C. Z. Alvarado and A. R. Sams. 2010. Poultry meat processing. CRC Press, Taylor & Francis Group, Boca Raton, Florida, USA.

Course: Poultry and Egg Processing

Course code: FT 204

No	Topics to be covered in the course	Learning Objective of this topic	Expected Outcomes from Students	Teaching Method	Assessment Criteria	Deadlines and Homework
1	Introduction to meat and different types of meat specifically poultry meat and importance of poultry meat	To differentiate between different types of meat. To explain the importance of poultry meat.	Describe the term poultry and its importance.	Lecture Class Discussion	Class Assignment Question/ Answer session	Within a Week
2	Overview of the poultry industry in Pakistan, developmental stages, and current status	To describe the developmental changes which occur in the poultry industry in past years. To explain the factors responsible to affect the stability of the poultry industry.	Discuss the changes that evolved in the poultry industry and the current status of this industry.	Lecture Literature Review	Case Study Class Discussion	Within a Week
3	Factors affecting poultry quality: breed, age, sex, genotype, rearing conditions, and practices Bird selection: weight, quality	To learn different factors responsible for the changes in the quality of meat. To demonstrate the criteria used for the bird's selection and grading.	Understand the effect of different environmental and growth factors responsible for the bird's meat quality.	Lecture Literature Review	Short Quiz Case Study	Within a Week
4	Ante-mortem and Post-mortem examination of poultry birds- principles of judgment	To describe the importance of antemortem and postmortem inspection of the live bird and carcass, respectively. To earn the categorize the birds and meat-based on antemortem and postmortem inspection, respectively.	Understand the basics of the antemortem and postmortem inspection at the time of processing.	Lecture Video Tutorial	Class Discussion Assignment	Within a Week

5	Poultry meat muscle composition and their functioning	To describe the poultry meat composition specifically focusing on the chicken. To understand the factors responsible for the changes in the composition of the meat.	Improve the understanding of the muscle to meat conversion and factors that affect the quality of the end meat.	Lecture Video Tutorial Book Study	Class Activity	Within a Week
6	Primary poultry processing: pre-slaughter care, live-bird supply, stunning Slaughtering, scalding, plucking, evisceration, giblet harvesting, whole-carcass and cuts packaging	To demonstrate different techniques used for the primary processing of poultry meat. identify the factors responsible for the quality changes in the meat during processing.	Improve the understanding of factors that affect the quality of the meat during primary processing.	Lecture Video tutorial Book Study	Class projects Quiz Lab Performance	Within a Week
7	Guest Lecture I	TBD				Within a Week
8	Revision of Course/ Mid Exam					
9	Portioning and deboning operations and Packaging: materials, selection	To differentiate between the different steps used in the secondary processing of the meat. To understand the effect of the different processing techniques on the quality of the end product.	Implement different processing techniques for effective portioning and deboning of poultry meat.	Lecture Video tutorial Lab Practical	Case study Lab Performance	Within a Week
10	Preservation of poultry meat: canning, freezing, drying	To familiar with the different thermal meat preservation techniques.	Improve the understanding of the chemical changes that	Lecture Video tutorial Lab Practical	Class Discussion	Within a Week

		To understand the effect of different thermal techniques on the end quality of the product.	occur in meat by applying different preservation techniques.		Lab Performance	
11	Preservation of poultry meat: chemical treatments, irradiation	To familiar with the effect of chemicals and irradiations on the quality of meat, while using to increase the shelf life of the meat.	Improve the understanding of the chemical changes that occur in meat by applying different preservation techniques.	Lecture Video tutorial Lab Practical	Class Discussion Class Assignment Lab Performance	Within a Week
12	Eggs: Structure, inspection, grading, quality characteristics, handling, storage Composition: proteins of egg white, yolk proteins, and lipids and nutritive value	To differentiate between the different parts of the egg specifically chicken egg. To describe the role of each part of the egg to maintain the quality of the egg. To understand the nutritional profile of the chicken egg.	Improve the understanding of the chemical and physical nature of the chicken egg.	Lecture Book Study Lab Practical	Quiz Lab Performance	Within a Week
13	Functional properties of chicken eggs Egg processing: cleaning, drying, freezing of whole, white, yolk	To learn the utilization of the egg in the processing of different food products. To identify the factors either chemical, physical, or biological which lowers the quality of the egg. To learn different preservation techniques used to extend the shelf life of the eggs.	Improve the understanding of the different preservation techniques used to enhance the shelf life of the eggs.	Lecture Book Study Lab Practical	Quiz Lab Performance	Within a Week

14	Guest Lecture II	TBD				Within a Week
15	Course project/ presentations	To estimate student learning and progress in beverage technology	To develop communication skills and effective communication on industrial floors.	Class Participation	Class Presentation	Within a Week
16	Final Examination	Application of all the concepts learned in beverage technology	-	On-campus examination	Paper and viva	Within a Week
Final Exam						

Lab Component

During the course students will be able to perform the following poultry meat and egg-related practical in the laboratory:

1. Slaughtering and dressing of poultry
2. Poultry standard cuts
3. Tests for the freshness of poultry and eggs
4. Grading of poultry meat and eggs
5. Preparation of poultry and egg products
6. Preservation of poultry and egg products
7. Visit poultry and egg processing plant



Any Notes or Comments

