Course Title: Food safety and Quality Management
Course Code: FQ-501
Resource Person: Nauman Khalid
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 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.

MS Food Quality Management (Program) Objectives

MS Food Quality Management has the following main objectives;

1. *To develop a comprehensive understanding of food quality issues faced by the food industries*
2. *To provide a comprehensive knowledge of recent tools that are developed to tackle food quality and safety issues*
3. *To train on various analytical instruments and equipment*
4. *To develop research and analytical skills for effective evaluation of quality and safety issues*
5. *To develop effective scientific writing skills for effective dissemination of research outputs.*

Course Objectives

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

1. *To understand different concept of quality and quality philosophy*
2. *To understand the significance between safety and quality management systems;*
3. *To provide explanation on the systems approach to the management of product safety and quality;*
4. *To formulate innovate proposals for Safety and Quality Management Systems;*
5. *To demonstrate an understanding of GFSI standards*
6. *To formulate innovative proposals in relation to Risk analysis and Food Safety Objectives*

Learning Objectives

Sr#	Course Learning Objectives	Link with Program Learning Objectives
1.	To understand different concept of quality and quality philosophy	To provide a comprehensive knowledge of recent tools that are developed to tackle food quality and safety issues
2.	To understand the significance between safety and quality management systems;	To provide a comprehensive knowledge of recent tools that are developed to tackle food quality and safety issues
3.	To provide explanation on the systems approach to the management of product safety and quality	To develop research and analytical skills for effective evaluation of quality and safety issues
4.	To formulate innovate proposals for Safety and Quality Management Systems;	To develop effective scientific writing skills for effective dissemination of research outputs
5.	To demonstrate an understanding of GFSI standards	To develop research and analytical skills for effective evaluation of quality and safety issues
6.	To formulate innovative proposals in relation to Risk analysis and Food Safety Objectives	To develop effective scientific writing skills for effective dissemination of research outputs

Learning Outcomes

1. *Critically evaluate the factors that are constraining the quality of food products and use the concept of Process Quality Management to achieve and maintain high quality and safe outputs throughout food production systems;*
2. *Implement quality systems including, ISO 9001- 2015, ISO 22,000, ISO 17025, total quality management and Hazard Analysis Critical Control Point (HACCP) systems;*
3. *Critically analyze the requirements of private standards and related standards;*
4. *Reflect upon risk analysis and its role in the development of Food Safety Objectives;*

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 participation during the presentation sessions. The manner in which the question is asked or answered will also be noted.

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 the intra group 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 dead lines.

Participant Responsibilities:

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

Class activities:

Presentations

After careful analysis, 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 way heavily for grading of assignments/ projects.

Team 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.

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 10 minutes past the assigned time, you will be marked absent.

Mobile 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 emails 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 grade 'F' (Fail) and will not be allowed to take end term exams. International students who will be leaving for visa during semester should not use any days off except for visa trip. 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 "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 punishable offence. 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 tin" report on every assignment, big or small. Any student who attempts to bypass "Turn tin" will receive "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 student attempts to cheat "Turn tin", 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: FQ-501 **Course title:** Food safety and Quality Management

Program	MS Food Quality Management
Credit Hours	3
Duration	16 weeks
Prerequisites (If any)	-
Resource Person Name and Email	Dr. Nauman Khalid nauman.khalid@umt.edu.pk
Counseling Timing (Room#)	6:30 pm to 8:45 pm STD 502
Contact no.	
Web Links:- (Face book, Linked In, Google Groups, Other platforms)	

Chairman/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
Quizzes:	**10%**
Mid Term Exam:	**20%**
End Term Exam:	**30%**
Project/Case study	**40%**
Total:	**100%**

Recommended Textbooks and Papers:

1. Gaze, R. and Campden BRI (ed.) (2009). HACCP: a practical guide. 4th edn. Campden BRI.
2. Luning, P. A., & Marcelis, W. J. (2020). Food quality management: technological and managerial principles and practices. Wageningen Academic Publishers.
3. Petersen, B., Nüssel, M., & Hamer, M. (Eds.). (2014). Quality and risk management in agri-food chains. Wageningen Academic Publishers.
4. Gould, W. A. (2013). Total quality assurance for the food industries. Elsevier.
5. Panghal, A., Chhikara, N., Sindhu, N., & Jaglan, S. (2018). Role of food safety management systems in safe food production: A review. Journal of food safety, 38(4), e12464.
6. Henson, S., & Hooker, N. H. (2001). Private sector management of food safety: public regulation and the role of private controls. The International Food and Agribusiness Management Review, 4(1), 7-17.
7. Jatib, I. (2003). Food safety and quality assurance key drivers of competitiveness. International Food and Agribusiness Management Review, 6(1030-2016-82620).

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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	**Module 1:** Introduction Course overview, Food Safety and Quality Basics and Importance of maintaining quality	To understand the context of Food Safety and Quality To understand different quality principles and management of quality	Improve understanding of basic concept of food safety Improve understanding of various quality definitions and quality gurus	Lecture slides as well as case study	Class Participation	Within a Week
2	**Module II:** GMPs Farm to fork concept, Good manufacturing practices	To understand the context of Good Manufacturing Practices To understand the concept of farm to fork safety	Improve understanding and picking of GMPs, GHPs and food safety from farm to fork	Lecture slides as well as case analysis	Class participation	Within a Week
3	Guest Lecture 1					Within a Week
4	**Module III:** HACCP Food Safety and HACCP basics HACCP details and implementation methods Projects and Presentations	To learn basic requirements of HACCP To learn different principles of HACCP To understand implementation criteria with suitable examples	Improve understanding of HACCP and its importance in maintaining food quality	Lecture slides as well as case analysis	Class participation	Within a Week
5	**Module IV:** ISO 22000:2018 ISO 22000 basics, importance and implementation Industrial perspectives	To learn basic information regarding ISO and its functions To increase understanding of ISO 22000 in relation to HACCP and ISO 9001	Improve understanding of ISO 22000 and its importance in maintaining food quality	Lecture slides as well as case analysis	Case studies with reference to ISO 22000	Within a Week

6	**Module IV:** ISO 22000:2018 ISO 22000 basics, importance and implementation Industrial perspectives	To learn basic information regarding ISO and its functions To increase understanding of ISO 22000 in relation to HACCP and ISO 9001	Improve understanding of ISO 22000 and its importance in maintaining food quality	Lecture slides as well as case analysis	Case studies with reference to ISO 22000	Within a Week
7	**Revision**	**Midterm**				Within a Week
8	**Module V:** ISO 17025 and BRC overview Importance Audit and methods	To learn the concept of traceability and laboratories in maintaining food quality and safety To understand basic importance of ISO 17025	To increase understanding of advanced tools in analyzing food safety and quality	Lecture slides as well as case analysis	Class participation	Within a Week
9	Guest Lecture 2					Within a Week
10	**Module VI:** Total Quality Management Total Quality Management and its importance Philosophy Statistical Process Control	To learn the concept of total quality management To learn about different statistical tools in quality management To learn 3 and 6 sigma concepts	To understand basic statistical tools used in total quality management together with TQM philosophy	Lecture	Quiz	Within a Week
11	Guest Lecture 3			Lecture		Within a Week
12	**Module VII:** Food Legistration regarding to quality and safety	To learn briefly FSMA and PFA roles in safety and quality management	To understand importance of mandatory and voluntary standards in food safety science	Lecture	Class Participation	Within a Week

13	Module IX: **Risk analysis and mitigation**	To learn risk analysis and risk mitigation in food industries	To develop effective skills in managing risks and mitigation procedures	Class Participation	Presentation and Viva	Within a Week
14	**Project Presentations**	To evaluate student's critical ability to access and estimate food safety and quality issues	Develop and effective plan and strategy to evaluate food safety and quality issues		Presentation and Viva	Within a Week
15	Final Examination	Application of all the concepts learned in food safety and quality management		On campus examination	Paper and Viva	Within a Week

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