Course Title: Principles of Human Nutrition
Course Code: FST-1105
Resource Person: Waqas Asghar
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.

BS Food Science and Technology (Program) Objectives

Students graduating with a B.Sc. Food Science & Technology degree would be able to:

1. *Explain the basic principles of food and its multidisciplinary scope*
2. *Describe the physical, chemical, and biological properties of food and their effects on food safety, 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 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, products and processes.*
8. *Apply critical thinking to professional problems.*
9. *Develop organizational, team work, and leadership skills.*
10. *Demonstrate professional skills and thoughts of ethical, society, integrity, and respect for diversity.*
11. *Demonstrate preparedness for continued reflective practice and lifelong learning relevant to careers in food science.*

Course Objectives

The main objectives of this course include:

1. *Provide an overview of the major macro and micronutrients relevant to human health.*
2. *Discuss the scientific rationale for defining nutritional requirements in healthy individuals and populations, with reference to specific conditions such as pregnancy, lactation, and older age.*
3. *Present current evidence for the role of key nutrients in the prevention of chronic diseases.*
4. *Discuss major nutrition-related diseases in a global context.*

Learning Objectives

Sr.#	Course Learning Objectives	Link with Program Learning Objectives
1.	Provide an overview of the major macro and micronutrients relevant to human health	Describe the physical, chemical, and biological properties of food and their effects on food safety, sensory and nutritional quality
2.	Discuss the scientific rationale for defining nutritional requirements in healthy individuals and populations, with reference to specific conditions such as pregnancy, lactation, and older age	Apply acquired knowledge to real world situations in food systems, components, products and processes
3.	Present current evidence for the role of key nutrients in the prevention of chronic diseases	Conduct applied research, and use statistical tools in experimental design and data analysis.
4.	Discuss major nutrition-related diseases in a global context	Apply acquired knowledge to real world situations in food systems, components, products and processes

Learning Outcomes

1. *Understanding, critically assessing and knowing how to use and apply information sources related to nutrition, food, lifestyle and health.*
2. *Interpreting and using food composition tables and databases properly.*
3. *Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.*
4. *Examining and evaluating the relationship between food and nutrition in health and/or illness.*

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 study-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 deadlines.

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 weigh 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 punctual.

You need to be in class at the assigned time. No entry after 10 minutes past the assigned time. You will be marked absent.

Mobile Phone Usage 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: FST-1105 **Course title:** Principles of Human Nutrition

Program	BS Food Science and Technology
Credit Hours	2 (2-0)
Duration	16 weeks
Prerequisites (If any)	
Resource Person Name and Email	Waqas Asghar Waqas.asghar@umt.edu.pk
Counseling Timing (Room#)	
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:	**5%**
Mid Term Exam:	**25%**
Assignment/Project:	**10%**
Presentation:	**10%**
End Term Exam:	**50%**
Total:	**100%**

Recommended Textbooks:

1. Boyle, M.A. and Holben, D.H. 2013. Community nutrition in action: an enterprenueal approach. Wadsworth, 20 Davis Drive, Belmont, CA 94002-3098, USA.
2. Coulston, A.M. and Ferruzi, M. 2013. Nutrition in the prevention and treatment of disease. Academic press, USA.
3. Edelstein, S. 2010. Nutrition in public health. Jones and Bartlett Learning International, UK.
4. Frank G.C. 2008. Community nutrition. Jones and Bartlett Publishers, Canada.
5. Margetts, B.M. and Nelson, M. 1997. Design concepts in nutritional epidemiology. Oxford University Press, UK.
6. Nnakwe, N.E. and Nnakwe, N. 2012. Community Nutrition: Planning Health Promotion and Disease Prevention. Jones and Bartlett Learning, USA.
7. Vir, S.C. 2011. Public health nutrition in developing countries. Woodhead Publishing, India.

Course: Principles of Human Nutrition **Course code: FST-1105**

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: Nutrition, dietetics and nutritional epidemiology	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion,	Class Participation	Within a Week
2	Health and nutritional status of Pakistani population	Provide an overview of the major macro and micronutrients relevant to human health.	Examining and evaluating the relationship between food and nutrition in health and/or illness.	Lecture, discussion	Class participation	Within a Week
3	Recent nutrition indicators in National Nutritional Survey 2018	Present current evidence for the role of key nutrients in the prevention of chronic diseases.	Examining and evaluating the relationship between food and nutrition in health and/or illness.	Lecture, discussion	Class participation	Within a Week
4	Physiological role of carbohydrates: Digestion and absorption	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion	Class participation	Within a Week
5	Physiological role of carbohydrates: Transport and metabolism	Provide an overview of the major macro and micronutrients relevant to human health.	D Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstration	Class participation and Quiz	Within a Week
6	Physiological role of proteins: Digestion and absorption	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of	Lecture, discussio practical demonstration	Class participation	Within a Week

			energetic and nutritional balance.			

7	**Revision**	**Midterm**				Within a Week
8	Physiological role of proteins: Transport and metabolism	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstration	Class participation	Within a Week
9	Physiological role of lipids: Digestion and absorption	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstration	Class participation	Within a Week
10	Physiological role of lipids: Transport and metabolism	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstration	Class participation	Within a Week
11	Physiological role of vitamins: Water-soluble vitamins I	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstration	Quiz and class participation	Within a Week
12	Physiological role of vitamins: Water-soluble vitamins 2	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstration	Class participation	Within a Week
13	Physiological role of vitamins: Lipid-soluble vitamins I	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstration	Class participation	

14	Physiological role of vitamins: Water-soluble vitamins 2	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Lecture, discussion, practical demonstratio n	Class participation	Within a Week
15	Physiological role of body fluids	Provide an overview of the major macro and micronutrients relevant to human health.	Being familiar with nutrients, their function in an organism, bioavailability, requirements and recommended quantities, as well as the bases of energetic and nutritional balance.	Class Participation	Presentation, Project submission and Viva	Within a Week
16	Assessment of nutritional status: anthropometry, biochemical, clinical and dietary methods assessment	Discuss the scientific rationale for defining nutritional requirements in healthy individuals and populations, with reference to specific conditions such as pregnancy, lactation, and older age.	Understanding, critically assessing and knowing how to use and apply information sources related to nutrition, food, lifestyle and health.	Class Participatio n	Presentation, Project submission and Viva	Within a Week