FACULTY OF AGRICULTURAL SCIENCES
UNIVERSITY OF THE PUNJAB, LAHORE

Semester II

Programme	B.Sc. (Hons) Agriculture	Course Code	FST-102	Credit Hours	3(2-1)
Course Title	**INTRODUCTORY FOOD TECHNOLOGY**				

Course Introduction
This course is designed to provide a comprehensive understanding of food science and technology fundamentals and their application throughout the processing industry. As the science of food evolves, new and emerging global challenges are being faced that require a solid grasp of both historical context and current trends. Through this course, students will explore the essential knowledge and their roles in maintaining health, delve into the physiological processes of digestion and metabolism, and learn to manage nutrition-related disorders. By the end of this course, students will be equipped with the knowledge and skills necessary to make informed dietary choices and promote overall well-being.

Learning Outcomes

On the completion of the course, the students will:
    1. New food technological skills
    2. Concept of food science

Course Content		Assignments/Readings
Week 1	**Unit-I** 1.1 Introduction to Food Science 1.2 Food technology	
	1.3 relationship with other disciplines 1.4 career opportunities.	
Week 2	**Unit-II** 2.1 Significance of food science and technology	
	2.2 Global & national food and nutrition situation	
Week 3	**Unit-III** 3.1 Food industry:	
	3.2 history,	
	3.3 developments.	

	3.4 Important food industries in Pakistan.	
Week 4	**Unit-IV** 4.1 Food sources: 4.2 plants, animals, marine.	
	4.3 Food constituents and their functions: water.	
Week 5	**Unit-V** 5.1 Food constituents and their functions: carbohydrates	
	5.2 Food constituents and their functions: lipids,.	
Week 6	**Unit-VI** 6.1 Food constituents and their functions: proteins	
	6.2 Food constituents and their functions: vitamins (Fat Soluble)	
Week 7	**Unit-VII** 7.1 Food constituents and their functions: vitamins (Water Soluble)	
	7.2 Food constituents and their functions: vitamins (Water Soluble)	
Week 8	**Unit-VIII** 8.1 Food constituents and their functions: minerals	
	8.2 Food constituents and their functions: minerals	
Week 9	**Unit-IX** 9.1Classification of foods: perishability	
	9.2Classification of foods: pH.	
Week 10	**Unit-X** 10.1 Food spoilage agents: enzymes	

	10.2 Food spoilage agents: microorganisms	
Week 11	**Unit-XI**	
	11.1Food spoilage agents:, insects, rodents, birds, physical factors	
	11.2Principles of food preservation:	
Week 12	**Unit-XII**	
	12.1 prevention or delay of autolysis,	
	12.2 microorganisms, pests, physical defects.	
Week 13	**Unit-XIII**	
	13.1Food poisoning:	
	13.2 causes and remedies.	
Week 14	**Unit-XIV**	
	14.1Quality factors in foods: appearance	
	14.2Quality factors in foods: texture	
Week 15	**Unit-XV**	
	15.1 Quality factors in foods: flavor etc.	
	15.2 Food risks and hazards: Hunger	
Week 16	**Unit-XVI**	
	16.1 Food risks and hazards: technology	
	16.2 Food risks and hazards: world food needs	
PRACTICAL		
Week 1	Use of laboratory equipment	
Week 2	Estimation of moisture in food samples	
Week 3	Estimation of fat in food samples	

Week 4	Estimation of carbohydrates in food samples	
Week 5	Estimation of carbohydrates in food samples	
Week 6	Estimation of fiber in food samples	
Week 7	Estimation of ash in food samples	
Week 8	Determination of proteins in food samples	
Week 9	Determination of specific gravity	
Week 10	Determination of soluble solids	
Week 11	Determination of Ph	
Week 12	Determination of total solids	
Week 13	Determination of refractive index	
Week 14	Determination of peroxide value.	
Week 15	Determination of peroxide value.	
Week 16	Laboratory performance overview	

Textbooks and Reading Material

1. Awan, J.A. 2011. Food science and technology. Unitech Communications, Faisalabad-Pakistan.
2. Awan, J.A. and Rehman, S.U. 2014. Food analysis manual. Unitech Communications, Faisalabad-Pakistan.
3. Campbell-Platt, G. 2009. Food science and technology. Wiley-Blackwell, USA.
4. Penfield, M.P. and Campbell, A.M. 2014. Experimental food science (Food Science and Technology). Academic Press, USA.
5. Potter, N.N. and Hotchkiss, J.H. 2007. Food science. The AVI Pub. Co. Inc., USA.

Teaching Learning Strategies

1. Lectures
2. Discussions
3. Presentations
4. Quiz
5. Assignments

Assignments: Types and Number with Calendar

1. Food Processing Industries in Pakistan
2. Fundamentals of Nutrition
3. Hidden huger solutions

Assessment

Sr. No.	Elements	Weightage	Details

1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.