

**FACULTY OF AGRICULTURAL SCIENCES**  
UNIVERSITY OF THE PUNJAB, LAHORE

<b>Programme</b>	<b>BS-Agribusiness</b>	<b>Course Code</b>	<b>AB-102</b>	<b>Credit Hours</b>	3(2-1)
<b>Course Title</b>	<b>INTRODUCTORY FOOD TECHNOLOGY</b>				
<b>Course Introduction</b>					
<p>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.</p>					
<b>Learning Outcomes</b>					
<p>On the completion of the course, the students will:</p> <ol style="list-style-type: none"> <li>1. New food technological skills</li> <li>2. Concept of food science</li> </ol>					
<b>Course Content</b>				<b>Assignments/Readings</b>	
<b>Week 1</b>	<b>Unit-I</b>				
	1.1 Introduction to Food Science				
	1.2 Food technology				
	1.3 relationship with other disciplines				
	1.4 career opportunities.				
<b>Week 2</b>	<b>Unit-II</b>				
	2.1 Significance of food science and technology				
	2.2 Global & national food and nutrition situation				
<b>Week 3</b>	<b>Unit-III</b>				
	3.1 Food industry:				
	3.2 history,				
	3.3 developments.				
	3.4 Important food industries in Pakistan.				
<b>Week 4</b>	<b>Unit-IV</b>				
	4.1 Food sources:				
	4.2 plants, animals, marine.				
	4.3 Food constituents and their functions: water.				
<b>Week 5</b>	<b>Unit-V</b>				
	5.1 Food constituents and their functions: carbohydrates				

	5.2 Food constituents and their functions: lipids,.	
<b>Week 6</b>	<b>Unit-VI</b> 6.1 Food constituents and their functions: proteins	
	6.2 Food constituents and their functions: vitamins (Fat Soluble)	
<b>Week 7</b>	<b>Unit-VII</b> 7.1 Food constituents and their functions: vitamins (Water Soluble)	
	7.2 Food constituents and their functions: vitamins (Water Soluble)	
<b>Week 8</b>	<b>Unit-VIII</b> 8.1 Food constituents and their functions: minerals	
	8.2 Food constituents and their functions: minerals	
<b>Week 9</b>	<b>Unit-IX</b> 9.1 Classification of foods: perishability	
	9.2 Classification of foods: pH.	
<b>Week 10</b>	<b>Unit-X</b> 10.1 Food spoilage agents: enzymes	
	10.2 Food spoilage agents: microorganisms	
<b>Week 11</b>	<b>Unit-XI</b> 11.1 Food spoilage agents: insects, rodents, birds, physical factors	
	11.2 Principles of food preservation:	
<b>Week 12</b>	<b>Unit-XII</b> 12.1 prevention or delay of autolysis,	
	12.2 microorganisms, pests, physical defects.	
<b>Week 13</b>	<b>Unit-XIII</b> 13.1 Food poisoning:	
	13.2 causes and remedies.	
<b>Week 14</b>	<b>Unit-XIV</b> 14.1 Quality factors in foods: appearance	
	14.2 Quality factors in foods: texture	
<b>Week 15</b>	<b>Unit-XV</b> 15.1 Quality factors in foods: flavor etc.	
	15.2 Food risks and hazards: Hunger	
<b>Week 16</b>	<b>Unit-XVI</b> 16.1 Food risks and hazards: technology	
	16.2 Food risks and hazards: world food needs	

<b>PRACTICAL</b>		
<b>Week 1</b>	Use of laboratory equipment	
<b>Week 2</b>	Estimation of moisture in food samples	
<b>Week 3</b>	Estimation of fat in food samples	
<b>Week 4</b>	Estimation of carbohydrates in food samples	
<b>Week 5</b>	Estimation of carbohydrates in food samples	
<b>Week 6</b>	Estimation of fiber in food samples	
<b>Week 7</b>	Estimation of ash in food samples	
<b>Week 8</b>	Determination of proteins in food samples	
<b>Week 9</b>	Determination of specific gravity	
<b>Week 10</b>	Determination of soluble solids	
<b>Week 11</b>	Determination of Ph	
<b>Week 12</b>	Determination of total solids	
<b>Week 13</b>	Determination of refractive index	
<b>Week 14</b>	Determination of peroxide value.	
<b>Week 15</b>	Determination of peroxide value.	
<b>Week 16</b>	Laboratory performance overview	
<b>Textbooks and Reading Material</b>		
<ol style="list-style-type: none"> <li>1. Awan, J.A. 2011. Food science and technology. Unitech Communications, Faisalabad-Pakistan.</li> <li>2. Awan, J.A. and Rehman, S.U. 2014. Food analysis manual. Unitech Communications, Faisalabad-Pakistan.</li> <li>3. Campbell-Platt, G. 2009. Food science and technology. Wiley-Blackwell, USA.</li> <li>4. Penfield, M.P. and Campbell, A.M. 2014. <a href="#">Experimental food science (Food Science and Technology)</a>. Academic Press, USA.</li> <li>5. Potter, N.N. and Hotchkiss, J.H. 2007. Food science. The AVI Pub. Co. Inc., USA.</li> </ol>		
<b>Teaching Learning Strategies</b>		
<ol style="list-style-type: none"> <li>1. Lectures</li> <li>2. Discussions</li> <li>3. Presentations</li> <li>4. Quiz</li> <li>5. Assignments</li> </ol>		
<b>Assignments: Types and Number with Calendar</b>		
<ol style="list-style-type: none"> <li>1. Food Processing Industries in Pakistan</li> <li>2. Fundamentals of Nutrition</li> <li>3. Hidden hunger solutions</li> </ol>		

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.