

MODULE DESCRIPTION

Module Information			
Module Title	FOOD TECHNOLOGIES and HEALTH AGRICULTURAL PRODUCTS		Module Delivery
Module Type	Core learning activity		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	FTP2150-AM		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	UGII	Semester of Delivery	
Administering Department	AGME1986	College	AGFO1964
Module Leader	Asist. Prof. Dr. Yousif Yakoub Hilal	e-mail	yousif.yakoub@uomosul.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor	N.A.	e-mail	N.A.
Peer Reviewer Name	N.A.	e-mail	N.A.
Scientific Committee Approval Date	1/9/2025	Version Number	1.0

Relation with other Modules			
Prerequisite module	BSS1050-AM	Semester	2
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	<ol style="list-style-type: none"> 1- To provide students with the fundamental concepts of food technology and its role in reducing agricultural losses and achieving food security. 2- To enable students to understand the impact of preservation and processing techniques on the quality and safety of agricultural and animal products within the framework of good agricultural practices. 3- To introduce students to the factors affecting the health and safety of food products, including genetic modification, pesticide residues, and relevant regulations. 4- To raise awareness of the importance of sustainable development in managing natural resources, protecting the environment, and ensuring the continuity of the food supply chain.
Module Learning Outcomes LOs	<p>By the end of this course, the student will be able to:</p> <p>LO#1: Explain the fundamental concepts of food technology, including food processing and preservation methods, and their role in achieving food security and sustainable development.</p>

	<p>LO#2: Evaluate the quality of agricultural and animal products, analyze sources of contamination, and propose solutions within the framework of good agricultural practices (GAP).</p> <p>LO#3: Distinguish between food safety regulations and standards, and apply them in analyzing the production chain to ensure consumer safety.</p> <p>LO#4: Demonstrate ethical and professional responsibility toward community health and environmental protection through the adoption of sustainable and safe food production practices.</p>
Indicative Contents	<p>The guidance content includes the following:</p> <p>Guidance Content (Theoretical): Introduce students to the fundamentals of food technology and its role in food security, explain how processing and preservation techniques affect product quality and safety, and reinforce concepts of sustainability and health regulations.</p> <p>Guidance Content (Practical): Simple applications of food processing techniques, with analysis of barriers to their adoption in local communities and proposing feasible solutions.</p> <p>Total hrs = 63 = SSWL - (Exam hrs) = 63-3= 60 (Time table 4 hrs x 15 weeks)</p>

Learning and Teaching Strategies

Strategies	<ol style="list-style-type: none"> 1- Interactive Lecture and Brainstorming 2- Dialogue and Discussion 3- Case Study 4- In-Class Experiments 5- Mini Field Visits (Real or Virtual)
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Student Workload (SWL)

الحمل الدراسي المنتظم للطالب خلال الفصل	63	الحمل الدراسي المنتظم للطالب أسبوعياً	4
الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	الحمل الدراسي غير المنتظم للطالب أسبوعياً	4
الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 11	LO#1 and LO#2
	Assignments	2	10% (10)	2 and 13	LO#1 and LO#3
	Projects/ Practical	3	10% (10)	4, 8 and 12	All

	Report	1	10% (10)	14	LO#1, LO#2 and LO#4
Summative assessment	Midterm Exam	3hr	10% (10)	7	LO#1, LO#2 and LO#3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Introduction to Food Technology and its objectives. The role of food processing in reducing post-harvest losses and achieving food security. Concepts of Sustainable Development in the agricultural and food sectors.
Week 2	Traditional and modern food preservation methods (drying, canning, refrigeration, smart packaging). Impact of preservation techniques on the sustainability of natural resources and product quality.
Week 3	Food processing technologies for field crops (grains, legumes) with a focus on sustainability and loss reduction. Extraction of vegetable oils and techniques for improving production efficiency.
Week 4	Processing horticultural products (fruits and vegetables): canning, juices, jams. The relationship between horticultural product quality and food security.
Week 5	Dairy and meat technology: preservation, processing, sustainable practices. Management of animal industrial waste according to environmental sustainability standards.
Week 6	Modern technologies in food industries (smart packaging, functional foods). The impact of the food industry on Sustainable Development Goals (SDGs).
Week 7	Mid-term Exam
Week 8	Introduction to the health and safety of food products (plant and animal origin). Regulations and standards to ensure food safety.
Week 9	Safety of animal products (dairy, meat, eggs): sources of contamination, zoonotic diseases. Management of animal supply chains within the framework of environmental and health sustainability.
Week 10	Safety of plant products: chemical and biological contamination (pesticides, fungi, mycotoxins). Good Agricultural Practices (GAP) to achieve sustainable quality and safety of agricultural products.
Week 11	Genetic modification (GMOs) in agricultural crops: objectives, risks, opportunities. The relationship between biotechnology and achieving food security within sustainability frameworks.
Week 12	Quality management of horticultural products from farm to consumer. Applications of modern technologies in monitoring the health of plant products.
Week 13	The concept of agricultural protection as an entry point to ensure the quality and safety of agricultural products. Impact of Integrated Pest Management (IPM) on reducing pesticide residues in products. How sound preventive practices help maintain product characteristics (color, texture, flavor, and absence of contaminants).
Week 14	Types of agricultural pesticides and their direct effects on product quality. Methods to reduce pesticide residues in food products (washing, thermal treatments,

	<p>biotechnological techniques).</p> <p>Regulations and controls to limit pesticide residues in foods (standards, Good Agricultural Practices - GAP).</p> <p>The relationship between environmental sustainability and food product safety in pesticide use.</p>
Week 15	<p>Managing natural resources (water, soil, energy) to ensure healthy and safe agricultural products.</p> <p>The impact of sustainability in agricultural practices on food product health (low-impact technologies).</p> <p>Sustainable food security: the relationship between (product health – environmental protection – resource conservation).</p> <p>Practical examples (International projects, case studies from Iraq).</p>
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Practical Syllabus)

	Material Covered
Week 1	Introductory tour of the food laboratory (or theoretical explanation supported by images/videos) + discussion of basic practical skills
Week 2	Food preservation experiment using drying (with local vegetables or fruits)
Week 3	Preservation using salt or sugar (making jam or pickles)
Week 4	Oil extraction from sesame seeds (preparing tahini)
Week 5	Sensory evaluation of natural juice or preserved horticultural product
Week 6	Inspection of preserved meat or dairy products (sensory analysis + spoilage signs)
Week 7	Hands-on application: reading nutrition labels and health data of canned food products
Week 8	Visual inspection and analysis of contamination residues in a plant-based product (comparing market samples)
Week 9	Case study on a genetically modified product (video presentation or booklet + scientific discussion)
Week 10	Educational field visit to a food or dairy factory
Week 11	Theoretical and practical classification of spoilage types in plant and animal food products
Week 12	Interactive assessment: linking preservation methods to environmental impact (sustainability perspective)
Week 13	Practical model of quality control in the production chain (from farm to consumer)
Week 14	Student mini-project presentations (e.g., idea for a safe food product + packaging design)
Week 15	Final practical exam + self-assessment of the practical course

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	N.A.	-
Recommended Texts	<ul style="list-style-type: none"> - <i>Principles of Food Industries</i> - Food Safety – Printed Lectures 	Yes
Websites		

Grading Scheme

Group	Grade	Marks %	Definition
Success Group (50 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	(45-49)	More work required but credit awarded
	F – Fail	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



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