



Course Specification

(Bachelor)

Course Title: Food Preservation and Processing

Course Code: APFQ2108

Program: : Intermediate Diploma in Food Quality and Safety

Department: Clinical Nutrition

College: Applied Medical Sciences

Institution: Umm Al-Qura University

Version: 3

Last Revision Date: 8/10/2024 AD

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A. General information about the course:

1. Course Identification

1. Credit hours: (2)					
2. Course type					
A.	<input type="checkbox"/> University	<input type="checkbox"/> College	<input checked="" type="checkbox"/> Department	<input type="checkbox"/> Track	<input type="checkbox"/> Others
B.	<input checked="" type="checkbox"/> Required		<input type="checkbox"/> Elective		
3. Level/year at which this course is offered: (2nd Level / 1st year)					
4. Course general Description:					
This course assists the students in understanding the techniques and effects of specific food processing and preservation techniques such as pasteurization, dehydration, thermal sterilization, freezing, and chemical additives on storage, shelf-life, sensory and nutritional properties of different foods, colorants, flavors, food additives, and their effect on the quality of food and public health.					
5. Pre-requirements for this course (if any):					
None					
6. Co-requisites for this course (if any):					
None					
7. Course Main Objective(s):					
At the end of this course, the student must be able to:					
a) Know the causes of food spoilage					
b) Describe the techniques and effects of food preservation methods on food's nutritional value and quality.					
c) Identify & apply appropriate food processing and preservation methods for different food products					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	15
2.	Laboratory/Studio	30
3.	Field	



4.	Tutorial	
5.	Others (specify)	
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	List concepts and Approach of Food spoilage.	K1	Lectures	Midterm exam Rubrics for as signment Final exam
1.2	Distinguish the different methods of food preservatives.	K1	Class discussion	
1.3	Recognize the food law in using food additives, colorants, and flavors in food.	K2	Group Work	
2.0	Skills			
2.1	Explain the important chemical and physical interactions between food constituents that affect quality and nutritive value.	S1	Lectures Class discussion	Midterm exam Rubrics for as signment Final exam
2.2	Assess the effect of extrinsic factors on the reactions on food compounds occurring during processing and storage.	S1	Group Work	
3.0	Values, autonomy, and responsibility			
3.1	Employ responsibility for own learning and continuing personnel development.	V1	Group Work	Rubric for class group discussion and Group assignments
3.2	Implement working ability either alone or with team and leadership skills if required.	V3		

C. Course Content

No	List of Topics	Contact Hours
1.	Course Description and overview.	2
2.	Introduction to food processing operations and preservation technology.	2
3.	Food Preservation by Application of Heat.	2
4.	Food Preservation through Water Removal.	2
5.	Food Preservation through Temperature Reduction.	2





6.	Food Preservation by Radiation+ Midterm Exam	4
7.	Food Preservation by use of: a. Salt b. Smoking c. Sugar d. Other Chemical Additives e- Health hazards of smoking and other additives	4
8.	Food Additives	2
9.	Preservation using modern methods	2
10.	Effect of various food preservation technologies on: a- The microbiological stat of the products b- life and safety issues c- Sensory and nutritional quality of foods. d- Physical, chemical and sensory evaluation of processed foods	2
11	Food Packaging The latest food and beverage packaging machinery, materials, and trends.	2
12	Development of Fortified Infant Foods for Optimal Nutrition	2
13	Application of Hyperspectral Imaging for Quality Monitoring in Food Processing	2
Total		30

Practical content

No	List of Topics	Contact Hours
1	Course overview and lab guidelines	2
2	Introduction to food processing operations and preservation technology.	2
3	Food Preservation by Application of Heat.	2
4	Food Preservation through Water Removal.	2
5	Food Preservation through Temperature Reduction.	2
6	Food Preservation by Radiation+ Midterm Exam	2
7	Food Preservation by use of: a. Salt b. Smoking c. Sugar d. Other Chemical Additives e- Health hazards of smoking and other additives	2
8	Food Additives	2
9	Preservation using modern methods	2
10	Effect of various food preservation technologies on: a- The microbiological stat of the products b- life and safety issues c- Sensory and nutritional quality of foods.	2





	d- Physical, chemical and sensory evaluation of processed foods	
11	Food Packaging The latest food and beverage packaging machinery, materials, and trends.	2
12	Development of Fortified Infant Foods for Optimal Nutrition	2
13	Application of Hyperspectral Imaging for Quality Monitoring in Food Processing	2
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignments and class activities	15 th	20%
2.	Midterm exam	6 th	25%
3.	Practical assessment	All weeks	15%
4.	Final theoretical exam	17 th or 18 th Week	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Dryden C. E., Outlines of Chemical Technology for the 21st Century y, EastWest Press, 2017, 7 th edition STEVE W. CUI , FOOD Ramaswamy, H S. & Marcotte, M. 2014. Food processing, principles and applications. 2nd edition Taylor & Francis.
Supportive References	Norman. N. Potter and Joseph H. Hotchkiss Food Science 5thEd. Pub. by Springer Science New York. 1998.
Electronic Materials	https://sdl.edu.sa
Other Learning Materials	-

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms
Technology equipment (projector, smart board, software)	Blackboard collaborating for E Learning in emergencies
Other equipment (depending on the nature of the specialty)	-



F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, faculty, program leaders and peer reviewer	Continuous monitoring by directors of program and quality assurance unit (Direct) Applying questionnaires received from the Deanship of Academic Development for student evaluation (Indirect) Evaluation of course report (Indirect)
Effectiveness of Students assessment	Students, faculty, program leaders and peer reviewer	Applying questionnaires for student evaluation (Indirect) Evaluation of course report (Indirect)
Quality of learning resources	program leaders and peer reviewer	Continuous monitoring by directors of program and quality assurance unit (Direct) Applying questionnaires for student evaluation (Indirect)
The extent to which CLOs have been achieved	Program leaders	Evaluation of course report (Indirect)
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Umm Al-Qura University Council
REFERENCE NO.	851141114462/190392
DATE	22/11/1446

