

جامعة كل العرب

Faculty : Pharmacy

Department: Clinical Nutrition and Dietetics

Academic Year: 2020-2021

Semester : First

(Course Syllabus)

Subject Name	Credit Hours	Course No.	Prerequisite	Concurrent course
Food Microbiology	2	908214	1501141	

Coordinator Name	Lecturer/s	Room No.	E-mail	Course website	Office Hours
Manal Ayyash; MSc	Manal Ayyash; MSc		m_ayyash@asu.edu.jo		

Course Description:

This course includes the study of important groups of microorganisms related to food quality, safety, treatment, spoilage and fermentation and the sources of organisms present in food; factors (internal and external) related to microbial growth.

Course objectives:

1. To Provide the students with the basic information about microorganisms related to food, their basic structure and mode of growth.
2. To Help the student to differentiate between different staining techniques and different types of microscopes used in examining microbes presented in food.
3. To provide the students with primary sources of microorganisms (bacteria, molds and yeasts) found in foods .
4. To introduce the students with the different methods used in food preservation.

Intended Learning Outcomes:

Following the successful completion of this course, the student should be able to:

A. Knowledge and understanding:

- A1. Know the history and the basic of food microbiology
- A2. Understand the importance of staining techniques in food microbiology.
- A3. Identify intrinsic and extrinsic parameters of foods that affect microbial growth
- A4. Nominate methods of food protection and preservations.
- A5. Identify the primary sources of microorganisms found in foods



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B. Subject specific skills:

B1. *Describe Structure of food microbes .*

B2. *Show Functions of pH, Moisture Content, Nutrient Content, Antimicrobial Constituents, Biological Structures in microbial growth in food*

B3. *Describe methods of food protection.*

C. Cognitive and Intellectual skills:

C1. *Numerate the factors that effect microbial growth in food.*

C2. *List names of microbes that cause food spoilage .*

C3. *Indicate functions of probiotics*

D. Transferable Skills:

D1. *Differentiate between prokaryotic and eukaryotic cells*

D2. *Recommend an appropriate methods and conditions in food protection and storage.*

Teaching and Learning Methods:

Development of ILOs is promoted through the following teaching and learning methods:

ILOs	Learning Methods	Evaluation Methods
Eg. A, B, C	Eg. Lectures (to explain the theoretical knowledge for each topic)	Exams and homework

Course Content:

Week	Date	Lecture number	Topic's Details	Exams/ /quizes/ holiday s	Main Reference (chapter)	ILOs achieved
1	Oct		-History of microbiology, Naming and Classification of microorganisms -Staining techniques		-Introduction to microbiology - Fundamental food microbiology 1	A1 & A2



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2	Oct		Functional anatomy of the prokaryotic and eukaryotic cells		Introduction to microbiology	D1
3	Nov		Growth of bacteria (bacterial division), phases of growth and measurement of microbial growth		Fundamental food microbiology	B2
4	Nov		Primary Sources of Microorganisms Found in Foods Common Foodborne Bacteri, Molds and Yeasts		Modern Food Microbiology	5A
5	Nov		Intrinsic Parameters of Foods That Affect Microbial Growth: pH, Moisture Content, Oxidation-Reduction Potentia, Nutrient Content, Antimicrobial Constituents, Biological Structures		Modern Food Microbiology	A3 & B2
6,7	Nov/Dec		Extrinsic Parameters of Foods That Affect Microbial Growth: Temperature of Storage, Relative Humidity of Environment, Presence and Concentration of Gases in the Environment , Presence and Activities of Other Microorganisms .		Modern Food Microbiology	A2
7	Dec		Intestinal Bacteria and Probiotics Beneficial Effects of Probiotics		Fundamental food microbiology	C3
8	Dec		MICROORGANISMS IN FOODS: -Fresh Meats and Poultry, -Processed Meats and Seafoods. -Vegetable and Fruit Products		Modern Food Microbiology	C2
9,10	Dec		MICROORGANISMS IN FOODS: -Milk, Fermentation, and Nonfermented Dairy Products - Nondairy Fermented Foods and Products - Miscellaneous Food Products		Modern Food Microbiology	C2



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11,12	Jan		DETERMINING MICROORGANISMS AND/OR THEIR PRODUCTS IN FOODS: Culture, Microscopic, and Sampling Methods.		Modern Food Microbiology	B1 & C2
13	Jan		-Food Protection with Chemicals, and by Biocontrol		Modern Food Microbiology	A4,B3 & D2
14	Jan		- Food Protection with Modified Atmospheres.		Modern Food Microbiology	A4,B3 & D2
15	Jan		- Protection of Foods with Low and high -Temperatures Protection of Foods by Drying		Modern Food Microbiology	A4,B3 & D2

Grade Distribution:

Your course grade will be determined by the following:

Assessment Method	% of Final Grade	Due Date
Quizes/ projects	15	To be announced
Mid exam	35	To be announced
Final exam	50	To be announced

* Provisional dates are scheduled in the course schedule. Each instructor will announce the exact date for the quizzes of each section at the beginning of the semester.

Distribution of examination material (may vary depending on material included):

Example:

Course Policies:

A- Attendance policies:

Attendance: Mandatory.

First warning – with 6 absences

Last warning – with 8 absences

Failing in the subject – with 10 absences

B- Absences from exams and handing in assignments on time:

Will result in zero achievement unless health report or other significant excuse is documented.

C- Health and safety procedures: NA

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The participation, the commitment of cheating will lead to applying all following penalties together

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Form code: UF 130/1

24/233 Resolution number

Accreditation date: 31/01/2018



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1. Failing the subject he/she cheated at
2. Failing the other subjects taken in the same course
3. Not allowed to register for the next semester. The summer semester is not considered as a semester

E- Grading policy:

Exams and Quizzes.

Quiz/projects	15 points
Mid term exam:	35 points
Final Exam:	50 points
Total:	<u>100 points</u>

F- Available university services that support achievement in the course:

Classrooms, internet classes, ASU online web site (messages, assignment, and notes)

24. Required equipment:

Make-up Exam Policy:

Make-up exams will be offered for valid reasons. They may be different from regular exams, both in content and format.

Textbooks information:

Main Reference: Modern Food Microbiology 7th edition

Other References:

Fundamental food microbiology 5th edition; Bibek Ray • Arun Bhunia

Introduction to microbiology Tortora

Additional information:

No side talks during lecture

No mobile phones during lecture

Entering the lecture theatre after the instructor is not permitted.

Homework should be done by students independently and will be asked at the exams

Course Material and Announcements

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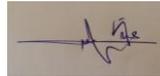


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Students need to use the e-learning page at the ASU website in order to get all lecture handouts and guidelines which will be uploaded there.

In addition, course related announcements and exam results will be posted on the ASU online AND/OR course website and is the responsibility of each student to check the sites regularly.

Name of Course Coordinator: Manal Ayyash; MSc Signature: 

Date: 15th

Head of curriculum committee: Reem Abutayeh Signature: 

د. ريم ابوتايه

Head of Department: 

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التغذية السريرية والحميات

Signature:

Dean: Dr. Iman Al Bashiti

Signature: 

Copy to:
Head of Department
Head of curriculum committee
Course File