KNOWLEDGE UNIVERSITY

Ministry of Higher Education and
Scientific Research
Kurdistan Region – Iraq

A COURSE MODULE DESCRIPTOR FORM

(Course Book)

Module Information			
Course Module Title	Food Microbiology		
ناوي كۆرس مۆديول	میکرۆبایۆلۆجی خۆراک		
عنوان الوحدة	**علم الاحياء الدقيقة الغذائي**		
Course Module Type	Compulsory	**Module Code**	MM402
ECTS Credits	5	**Module Level**	2
Semester of Delivery	4	**Dept. Code**	MMD
College (Code)	College of Science MMD		
Module Website (CMW)	https://knu.edu.iq/sms/getAClass.php?stg=2&depCode=DPMM&courseCode=MM402&lecModId=1103		
Module Leader (ML)	M.S.c Shilan Farhad Mamand		
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ML Acad. Title	Assistant Lecturer	**ML Qualification**	M.S.c
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ML Google Scholar Acc.	https://scholar.google.com/citations?user=gET5wlcAAAAJ&hl=en		

Course Module Tutor	Assistant Lec. Shilan F. Mamand		
Module Tutor email	Shilan.mamand@knu.edu.iq		
Date Approved	DD/MM/YYYY	**Version Number**	1.0

Relation with Other Modules	
Pre-requisites	
Module Aims, Learning Outcomes and Indicative Contents	
Module Introductory Description	The course will cover important aspects of microbial physiology, with respect to food borne pathogens and important considerations for food production and the detection and control of microbial hazards. Particular attention will be given to both food borne illnesses that (i) require microbial multiplication in foods and (ii) do not require multiplication in foods and to the epidemiology of food related outbreaks. Modern assays for detecting the microbial content of foods will be discussed, including molecular methods and differentiation techniques (which are used to monitor both microbial hazards and functional cultures, such as starter cultures and probiotics).
Module Aims	The course aims to provide basic information on the nature of food borne illnesses and their significance in the food industry, with specific interest in microbial hazards, microbial detection assays, food microbiology and health.
Module Learning Outcomes	On successful completion of this module, students should be able to explain: 1. the nature of important micro-organisms of food borne illnesses 2. methods to control microbial hazards in foods

	3. epidemiology of food borne outbreaks and how to identify their probable source 4. methods for detection and identification of food micro-organisms
Learning and Teaching Strategies	
Strategies	Students will attend lectures and laboratory practical on food microbiology (with particular emphasis on microbial hazards), write scientific reports of their laboratory experimental work and participate in group tutorials related to Case studies - culminating in presenting flow diagrams and Group presentations of said Case studies. Finally, a revision test will be given at the end of the course.

Module Delivery	
Structured workload (h/w)	
Unstructured workload (h/w)	
Total workload (h/w)	

Module Assessment

	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Quizzes	1 or 2	6% (6)	5 or 5, 10	
Assignments	2	6% (6)	At the start	
Projects / Lab.	1	12% (12) / 18% (18)	Continuous	
Midterm Exam	2 hr	36% (36) / 30% (30)	8	
Final Exam	3 hr	40% (40)	16	All
Total		100% (100 Marks)		

Learning and Teaching Resources		
	Text	**Available in the Library?**

Required Texts	1- Ray, Bibek Fundamental food microbiology / Bibek Ray. --3rd ed. p. cm. Includes bibliographical references and index. ISBN 0-8493-1610-3 1. Food--Microbiology. I. Title 2- Food Microbiology Laboratory for the Food Science Student by Cangliang Shen • Yifan Zhang	Yes
Recommended Texts	Microorganisms in food 7 Microbiological Testing in Food Safety Management (Second Edition)	No
Websites		

Delivery Plan (Syllabus)	
	Material Covered
Week 1	Introduction to food microbiology and food safety
Week 2	Intrinsic and Extrinsic factors affecting microbial growth and survival in food
Week 3	Principles of food preservation and significance
Week 4	Preservation of food by chemical methods
Week 5	Spoilage of canned food
Week 6	Microbiology of milk and milk products
Week 7	Newer methods for controlling spoilage of food
Week 8	Food borne outbreaks- Bacterial agents for foodborne illnesses
Week 9	Principles of hygiene and sanitation in food service establishment.
Week 10	Principles and guidelines for conducting microbiological risk of food
Week 11	Fermented meat
Week 12	Fermented fish products

Week 13	Yeast-lactic fermentation in food
Week 14	Modified environment for storage of food
Week 15	Bio preservation of food
Week 16	**Final Exam**

Course Keywords
food microbiology, food safety, preservation, fermentation in food

APPENDIX: (Help and Information)

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GRADING SCHEME				
Group	**ECTS Grade**	**% of Students/Marks**	**Definition**	**GPA**
Success Group (50 - 100)	**A** - Excellent	Best 10%	Outstanding Performance	**5**
	B - Very Good	Next 25%	Above average with some errors	**4**
	C - Good	Next 30%	Sound work with notable errors	**3**
	D - Satisfactory	Next 25%	Fair but with major shortcomings	**2**
	E - Sufficient	Next 10%	Work meets minimum criteria	**1**
Fail Group (0 – 49)	**FX** – Fail	(45-49)	More work required but credit awarded	
	F – Fail	(0-44)	Considerable amount of work required	
Note:				

Useful Resource:

Designing Learning, From module outline to effective teaching