



Course Syllabus Bacteria of Food and water

Faculty: Medicine and health sciences
Department: Health Sciences
Program: Bachelor in Medical laboratory

I. General information about the course instructor:							
Name	Dr. Ibrahim AL-Sabal	Office Hours(3 Hours Weekly)					
Location & phone number	Sana'a: 775999446	Sat	Sun	Mon	Tue	Wed	Thu
Email	alsabalibrahim@gmail.com			1		1	

II. General information about the course:						
1.	Course Title :	Bacteria of Food and water				
2.	Course Code and Number :	BMLL 02				
3.	Credit Hours :	Credit Hours				Total
		Theoretical	Seminar/Tutorial	Practical	Training	
		2				2
4.	Study Level and Semester:	Elective				
5.	Pre-requisites :	None				
6.	Co-requisites :	None				
7.	Program in which the course is offered:	Bachelor in Medical laboratory				
8.	Teaching Language:	English				
9.	Instruction location:	University of Science and Technology, Sana'a ,Yemen				



عميد الكلية:
د. عبد الله المخلافي

رئيس القسم:
د. عبد الحبيب ريدمان

المراجع:
د. اروى عثمان
د. مجاهد نصار

الموصف:
د. ابراهيم السبل

III. Course Description

Food and water microbiology course provides students with a knowledge on waterborne and foodborne diseases. Course covers pathogenic and spoilage microorganisms in foods, their control and microbial food safety aspects. It emphasizes on the influences of food system on growth and survival of microorganisms as well as principles of culturing. The practical part focuses on isolation, enumeration, and identification of different microbes in food, water and milk. Lectures, lab classes and other teaching strategies are used. The students will be evaluated through report and written exam .

IV. Course Aims: This course is aimed to:

1. Provide students with a basic knowledge about food/water microbiology including source of contamination, growth factors of micro-organisms in foods, pathogens transmitted via food and water and their related diseases.
2. Make them able to understand the significant role of microbes in food production and in food spoilage.
3. Improve the skills of the student to distinguish between different types of microbial food poisoning.
4. Provide students with lab skills to evaluate the quality of food and water before consumption by people .
5. Enable students to understand the objectives of food and water sanitation.

V. Course Intended Learning Outcomes (CILOs) :

1. Describe sources of food, milk and water contamination and the principles of common methods used for isolation and identification of pathogens from them.
2. Define indicator microorganisms and enumerate criteria that should be considered in their selection.
3. Discuss the significance of psychrophilic, thermophilic and aciduric bacteria in food spoilage.
4. Describe different types of food/waterborne diseases ,measures for their prevention and the role of microorganisms in food production.
5. Analyze the sources of microbial contamination for water supply or during food production and processing.
6. Compare and contrast between spoilage of different types of foods and techniques used for water analysis.
7. Choose the suitable media and tests for isolation pathogens in food and water samples and interpret the results of laboratory tests.
8. Collect and prepare water and food samples for lab investigations and report the common laboratory tests used to identify pathogens isolated form food and water samples.
9. Apply measures to control microbial growth in food via affection the intrinsic and extrinsic growth factors.
10. Respect academic/medical staff and colleagues and patient privacy and participate in public health education about risks of consumption of contaminated foods and water

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الموصف :
د. ابراهيم السيل

VI. Course Contents				
Theoretical and analytical Aspect:				
No.	Course Units	Sub-topics	Week due	Contact Hours
1	Introduction to water microbiology	- types of water environments - source of water contamination - Types of microorganisms in Water	1 st	2
2	Indicator organisms	- criteria for ideal indicators - coliforms and fecal coliforms - <i>E. coli</i> - enterobactereaceae group - fecal enterococcus	2 nd	2
3	Analysis of water quality	- water sampling and transportation - direct examination methods - indirect examination methods - chlorine residual and other physicochemical test	3 rd , 4 th , 5 th , 6 th	8
4	Introduction to food microbiology Factors affecting microbial growth in food	- Definitions; food spoilage, food preservation, food production, sources of food contamination - Intrinsic growth factors - extrinsic growth factors	7 th	2
5	Mid exam	- Written exam	8 th	2
6	Microbial foodborne diseases	- foodborne intoxication - foodborne infections - foodborne toxicoinfection	9 th , 10 th	4
7	Analysis of food quality	- food sampling and transportation - Methods for food analysis	11 th , 12 th , 13 th	6
8	Analysis of milk and milk products	-milk sampling - methylene reduction test - phosphatase test - turbidity test	14 th	2
14	Final exam	Written exam	15 th	2
Total number of weeks and hours			15	30

جامعة العلوم والتكنولوجيا
إدارة ضمان الجودة والاعتماد
مستند
APPROVED
المراجع:
د. اروى عثمان
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