

Module(Course Syllabus)Catalogue 2022-2023

College/ Institute	Khabat Technical Institute	
Department	Food Security	
Module Name	General Microbiology	
Module Code	GEM204	
Semester	2	
Credits	6	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	4	
Weekly hours (Theory)	(1)hr Class	(30)hr Workload
Weekly hours (Practical)	(3)hr Class	(90)hr Workload
Lecturer (Theory)	Nazar Mohammed Samein	
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Lecturer (Practical)	Karwan Tlat	
E-Mail & Mobile NO.	07504530313	

Course Book

<p>Course Description</p>	<p>Importance of microorganisms; prokaryotic and eucaryotic cells; sterilization procedures; culture media: preparation, types of culture media; smearing and staining: simple staining, negative staining, differential staining, Ziehl-Neelsen staining, special staining; microscopy; microbial growth: factors affecting growth, growth pattern, determination of microbial growth; morphology and classification of major groups of microorganisms: fungi, bacteria, viruses, protozoa, algae, nematodes .</p>
<p>Course objectives</p>	<ol style="list-style-type: none"> 1. To familiarize with the apparatus and equipment used in a microbiology laboratory. 2. To gain knowledge and skills in maintenance of aseptic conditions in microbiological procedures 3. To prepare culture media, isolate and culture bacteria and fungi and to extract nematodes. 4. To study the general morphological features of different microorganisms.
<p>Student's obligation</p>	<p>Students are asked to do mandatory the following duties during the 12 weeks of the semester:</p> <ol style="list-style-type: none"> 1- Quiz. 2- Weekly practical report. 3- Homework. 4- Seminars. 5- Semester report. 6- Lab. activity.
<p>Required Learning Materials</p>	<p>Use white board Data show Power point Internet Use parts of plant The lectures are presented in classes to students in different ways including data show, PowerPoint, manual papers and white boards. However, they are presented to student via lecturers' portal in university's website.</p>
<p>Assessment scheme</p>	<p>16% Mid Term (Theory and practical) 6% Quiz 50% Assignment (report, paper, homework, seminar..) 15% final practical 15% final theory</p>

Specific learning outcome:	<p>By the end of the course, the students will be able to:</p> <ol style="list-style-type: none"> 1. Identify and describe the uses of basic apparatus and equipment used in a microbiology laboratory 2. Carry out basics aseptic procedures used in the handling and study of microorganisms 3. Isolate or extract and culture microorganisms 4. Understand the general characteristics of different groups of microorganisms 	
Course References:	<ol style="list-style-type: none"> 1 -Microbes and People by Neeraja Sankaran Call Number: QR9. S26 2000 2 - Microbes and People by Neeraja Sankaran Call Number: QR9. S26 2000 3 - Bergey's Manual of Systematic Bacteriology by John G. Holt (Editor); Noel R. Krieg (Editor) Call Number: QR81 .B46 1984 c.2 4 - Medical Microbiology by Patrick R. Murray; Ken S. Rosenthal; Michael A. Pfaller 5 - Joanne Willey, Stanley Fischer, and Richard Startz. 2010. Prescott's Microbiology 8th edition. McGraw-Hill Higher Education 	
Course topics (Theory)	Week	Learning Outcome
1. Scope and History of Microbiology	1	
2 -Introduction to Microbiology	2	
3 - Classification of Microorganisms	3	
4-- structure of Bacterial cell	4	
5 structure of Bacterial cell	5	
6 - Shape and size of Bacterial cell	6	
7 – Bacterial growth	7	
8 – Factors affect the Bacterial growth	8	
9 –Physical factors	9	
10 – Normal Microbial Flora	10	

11 – Antimicrobial Agents	11	
12- Antibiotic Resistance	12	
Course topics (Practical)	Week	Learning Outcome
1. Microscope	1	
2. Microbiology Laboratory Instruments	2	
3. General Laboratory Directions	3	
4. Orientation to The Microbiology Laboratory	4	
5. Sterilization and disinfection microbiology 2	5	
6. Methods of Sterilization	6	
7. Microbiology and Types of symbiotic	7	
8. Parts of the Microscope and Their Function	8	
9. EUKARYOTIC CELL STRUCTUREA	9	
10. Water Activity (AW)	10	
11. Sterilization and disinfection microbiology	11	
12 Factors affecting microbial growth	12	

Questions Example Design

Q1/ Define the following phrases?

1- Microbiology 2- Prokaryotic Cell 3- Eukaryotic Cell 4 - Bacteria

Q2/ What are Microbiology Branches ?

Q3/ Classification of Microorganisms?

Extra notes:

External Evaluator