|  |  |  |
| --- | --- | --- |
|  | **Mutah University**  **Detailed Syllabus Form** | Description: C:\Users\lamasat.lamasat-PC\Pictures\Picture1.png |

**First :** Course Information**:**

|  |  |
| --- | --- |
| * Course Number: 0308242 | * Course Title: General Microbiology |
| * Credit Hours: 3 | * College: Science |
| * Pre-requisite Biology/0305101 | * Department: Medical Laboratory Sciences |
| * Instructor: Dr. Haitham Qaralleh | * Semester & Academic Year: |
| * the time of the lecture: | * Office Hours: |

**Second:** General Course Description

The course introduces the students into prokaryotic and eukaryotic microorganisms in term of the classification, the structures and functions of prokaryotic and eukaryotic microbes and viruses but will emphasize bacteria. It also deals with the microbial growth, nutrition and metabolisms.

**Third :** Course Objectives

* The Course designed to provide the students with the basic knowledge of the microbiology and microorganisms.
* To introduce the students with recent scientific methodologies applied in various microbiology fields.
* To provide the students with basic knowledge about the interaction between the structure and functions of the microbial cells.

**Fourth:** Expected Learning Outcomes

1. Compare and distinguish the basic groups of microbes, including prokaryotic microbes (Archaea, Bacteria), and Viruses, and eukaryotic microbes.
2. Describe the structures and functions of the microbial cell.
3. Draw a typical microbial growth curve, and predict the effect of different environmental conditions on the curve.
4. Compare and contrast major pathways of catabolism, specify the relative energy yield from each pathway, list the key products of each pathway, and describe biochemical pathways used for microbial taxonomy.
5. Summarize common features of microbial pathogens, with emphasis on bacterial pathogens.

**Fifth :** Course Plan Distribution & Learning Resources

|  |  |  |
| --- | --- | --- |
| **Learning Resources** | **Topics to be Covered** | **Week**  **No.** |
| **Textbooks (print and digital)** | The evolution of microorganisms and microbiology, Microscopy |  |
| **Textbooks (print and digital)** | Bacterial cell structure |  |
| **Textbooks (print and digital)** | Bacterial cell structure |  |
| **Textbooks (print and digital)** | Archaeal cell structure |  |
| **Textbooks (print and digital)** | Eukaryotic cell structure |  |
| **Textbooks (print and digital)** | Viruses and others acellular infectious agents |  |
| **Textbooks (print and digital)** | Microbial growth |  |
| **Textbooks (print and digital)** | Microbial growth |  |
| **Textbooks (print and digital)** | Control of microorganisms in the environment |  |
| **Textbooks (print and digital)** | Antimicrobial chemotherapy |  |
| **Textbooks (print and digital)** | Introduction to metabolisms |  |
| **Textbooks (print and digital)** | Catabolism: energy release and conservation |  |
| **Textbooks (print and digital)** |  |  |
|  | Anabolism: the use of energy in biosynthesis |  |

**Sixth :** Teaching Strategies and Methods

|  |  |
| --- | --- |
| **Teaching Strategies and Methods** | No |
| **Lectures: Students are expected to take notes, records, or absorb information.** | **1** |
| **Demonstration: Lectures will includes multimedia presentations, activities, and demonstrations** | **2** |
| **The following Teaching methods will be used in class room:**   1. **Lectures** 2. **Question and Answer** 3. **Discussions** 4. **Multimedia** | **3** |

**Seventh :** Methods of Assessment

|  |  |  |  |
| --- | --- | --- | --- |
| **Proportion of Final Evaluation** | **Evaluation Methods of** | **Week & Date** | **No.** |
| **25%** | **First Exam** | **Sixth Week** | **1.** |
| **25%** | **Second Exam** | **Eleventh Week** | **2.** |
| **50%** | **Final Exam** | **Fifteenth Week** | **3.** |
|  |  |  | **4.** |
|  |  |  | **5** |
|  |  |  | **6** |
| **(100%)** |  | **Total** | |

**Eighth :** Required Textbooks

**- Primary Textbook:**

Microbiology Prescott Harley Kline ninth edition 2005 Published by MC Graw. Hill Martin J. Lang.

Microbiology Richard Harvey, Pamela, Champe Bruce D. Fisher 2007 PP438 2. Burton’s Microbiology Paul Engel Kirk, Gwendolyn Buroon 2007 390PP.

Microbiology, Geraral Tortora, Berdell Funke Christin Case 1000PP. 2007.

**-** **Secondary References**

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**Ninth :** General Instructions

|  |  |
| --- | --- |
| **Additional Notes, Office hours, Incomplete Exams, Reports, Papers, …etc** | **No** |
| **Office Hours:** | **1** |
| **Incomplete Exam:** | **2** |
| **Students might be required to present a seminar in one specific biotechnological application in enzyme technology / plant biotechnology / animal biotechnology or environmental biotechnology.** | **3** |
| **The students allowed to be absent (with or without solid reason) up to 4 classes (1 hour class).** | **4** |