Philadelphia University
Faculty of Science
Department of Biotechnology & Genetic Engineering
First semester, 2010/2011

Course Syllabus

Course Title: Microbiology	**Course code:** 240216
Course Level: Second year	**Course prerequisite (s) and/or corequisite (s): 240102/240107**
Lecture Time: **Section1 :9:45 -11:15 Monday , Wednesday**	**Credit hours: 3**

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Nabil A.S. NIMER	**Assisstant Professor**	**1114S**		n_nimer@philadelphia.edu.jo

Course module description:

Introduction to the microbial world. Diversity of prokaryotes, their development, structure and function. Prokaryotic metabolism, nutrition and growth. Microbial genetics and control. Fundamental principles of the .interrelationship of microorganisms and man, and their role in the environment

Course module objectives and knowledge outcome:

:By the end of the course students should be able to

Differentiate between the structure and gene organization in prokaryotic and* .eukaryotic cell
Describe the differences between the cell wall structure for Gram + and Gram * .–ve cells
Describe the shapes, gram reaction and procedures to identify the major * .groups of bacteria and the use of different types of media for that purpose
Describe the requirements for bacterial growth, bacterial growth and growth* .curve

Define the environmental parameters that affect growth and microbial * .adaptation to extreme environment
.Describe the diversity in microbial world *
Describe the different physical and chemical methods for controlling microbial * .growth
.Define genetic material transfer and recombination in prokaryotes *

Course/ module components

- **Text Book**

Microbiology, 2006 6th edition
Prescott, L. *etal*
McGrow hill publication

Teaching methods:

The 45 hours in total will be mainly lectures with few tutorials and including two .one hour exams

Learning outcomes:

- Cognitive skills (thinking and analysis).

The capacity to identify different perspectives, theories and models potentially relevant to different subject matter and to appraise their strengths and weaknesses.

The capacity to be aware of the limitations of existing knowledge and understanding and to recognize the relevance of developing new approaches to situations and problems.

Learning logical thinking through taking the important ideas, facts and conclusions involved in a problem and arranging them in a chains like progression that takes on a meaning in and of itself.

- Communication skills

Speak with more confidence and listen carefully to build rapport.

Students will be encouraged to express themselves more effectively

Assessment instruments

Allocation of Marks	
Assessment Instruments	**Mark**
First examination	**15**
Second examination	**15**
Three ten minute short exams	**20**
Final examination: 50 marks	**50**
Total	**100**

Course/module academic calendar

week	Basic and support material to be covered
(1)	Introduction to microbiology
(2)	Prokaryotic cell structure and function
(3)	
(4)	Microbial nutrition
(5)	Microbial growth
(6) **First examination**	Control of Microorganisms by physical agents
(7)	Control of Microorganisms by chemical agents
(8)	Microbial genetics
(9)	Plasmids
(10)	Microbes and Genetic Engineering
(11) **Second examination**	Microbial Taxonomy
(12)	
(13)	Archea
(14)	Viruses
(15)	The Fungi and Slime molds
(16) **Final Examination**	Medical Microbiology

Expected workload:

On average students need to spend 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:
Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the faculty of science shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references
Books

Biology of Microorganisms 1997 8th edition
Madigan, M *etal*
Microbiology An Introduction 2002 7thedition
Tortora,G.T *eta*
ISBN 0-8053-7597-*X*