



# Jerash University

Faculty of Pharmacy  
Department of Pharmaceutical Sciences

(Course Syllabus)

Subject Name	Credit Hours	Course No.	Prerequisite
Pharmaceutical Microbiology	3	1101333	0302101

Coordinator Name	Lecturer/s	Room No.	E-mail	Office Hours	Lecture time
Dr. Haitham Tumah	Dr. Haitham Tumah	403	<a href="mailto:haithamtu@yaho.com">haithamtu@yaho.com</a>	Check the schedule	M+W 08:00-09:30

The student is introduced to the diversity of life forms at the microscopic level with particular emphasis on the bacterium as a model using microscopes. Differentiate between prokaryotic and eucaryotic cells  
The basic principles of microbial metabolism, growth and how to control the microbial growth and an infectious diseases of human organ systems. The student acquires a basic knowledge, an understanding and an appreciation of the microbial world .  
They introduced to the most important infectious diseases of human systems

### Course Objectives:

This course intends:

to make the students introduced to the basic information about microorganisms, their basic structure and

### Course Description:

- 1) mode of growth and the
- 2) Impact of such characteristics on causing a diseases
- 4) How we can prevent it or reduce the recurrent infections,
- 3) Also this course provides the students with the the classification and naming of funji and viruses.

### Intended Learning Outcomes:

Following the successful completion of this course, the student should be able to:

A. **Knowledge and understanding:** Student is expected to

**A1. Differentiate between different types and parts of Microscopes**

**A2. Differentiate between prokaryotic and eucaryotic cells**

**A3. Familiar with the optimum bacterial growth condition**

**A4. Familiar with the most physical and chemical methods used to control the microbial growth**

**A5. Classify the bacteria and be familiar with the main infectious diseases caused by it.**

**A6. Familiar with the types of fungi and viruses.**

**B. Subject specific skills:** Student is expected to

**B1. How to Differentiate between prokaryotic and eucaryotic cells**

**B2.** Perform and select the preferred method to control the microbial growth by using either physical or chemical methods.

**C. Cognitive and Intellectual skills:** Student is expected to

**C1.** Build up knowledge and scientific skills regarding factors that affect the microbial growth.

**C2.** Understand the importance to identify the bacteria which causes the infectious disease using microscope and different growth media.

**D. Transferable Skills:** Student is expected to be able to

**D1.** Recognize the importance of *disinfect and sterilize places where we live*.

**D2.** Acquire knowledge about the identification and isolation of bacteria in order to describe proper antibiotics.

**D3.** Recognize the proper storage conditions for food to prevent food poisoning

**Teaching and Learning Methods:**

Development of ILOs is promoted through the following **teaching and learning methods:**

ILOs	Learning Methods	Evaluation Methods
A,B,C and D	Lectures (to explain the theoretical knowledge for each topic) this is accompanied with oral questions and discussions about the topic based on thinking	Exams first, second, final

**Learning skills:**

1. Critical thinking
2. Connecting the topics with each others
3. Problem-solving skills

**Course Content:**

Week	Date	Lecture number / hours	Topic's Details	Exams/ /quizes/holidays	Main Reference (chapter)	ILOs achieved
1.	July	2 hours	History of microbiology, Naming and Classification of microorganisms	Exam	Tortora G.J, Funke B.R.,Case,C.L. (2007). Microbiology An Introduction ( 11 <sup>th</sup> edition )	Lectures
2.	July	2 hours	Types and parts of Microscopes	Exam	Chapter 3 (main refrence)	Lectures A1
3.	July	2 hours	Functional anatomy of the prokaryotic cells	Exam	Chapter 4 (main refrence)	A2
4.	July	2 hours	Functional anatomy of the eucaryotic cells	Exam	Chapter 4 (main refrence)	A2
<b>FIRST EXAM</b>						
5.	August	2 hours	Osmosis, osmotic pressure, isotonic, hypo- and hypertonic, passive & active transportation	Exam	Chapter 4&6 (main refrence)	A3
6.	August	2 hours	The physical	Exam	Chapter 6	A3 ,A4 and

			requirements for growth, temp. ,pH The Chemical requirements ,C,N,S P & O2		(main reference)	<b>C1</b>
<b>7.</b>	August	2 hours	Culture media, Culture techniques, growth of bacteria (bacterial division), phases of growth and measurement of microbial growth	Exam	Chapter 6 (main reference)	<b>A4 and D2</b>
<b>8.</b>	August	2 hours	Culture media, Culture techniques, growth of bacteria (bacterial division), phases of growth and measurement of microbial growth	Exam	Chapter 6 (main reference)	<b>A4</b>
<b>SECOND EXAM</b>						
<b>9.</b>	August	2 hours	Chemical methods;Disinfection & Antiseptics	Exam	Chapter 7 (main reference)	<b>A4 and D1</b>
<b>10.</b>	August	2 hours	Chemical methods;Disinfection & Antiseptics	Exam	Chapter 7 (main reference)	<b>A4 and D1</b>
<b>11.</b>	August	2 hours	Classification of Bacteria, the diseases caused by bacteria	Exam	Chapter 11 (main reference)	<b>A4 and D3</b>
<b>12.</b>	August	2 hours	Classification of Bacteria, the diseases caused by bacteria	Exam	Chapter 11 (main reference)	<b>A4 and D3</b>
<b>13.</b>	August	2 hours	Characteristics of fungi, fungal disease	Exam	Chapter 12 (main reference)	<b>A6</b>
<b>14.</b>	August	2 hours	Characteristics of Viruses,taxonomy, multiplication of bacteriophages	Exam	Chapter 13 (main reference)	<b>A6</b>
<b>FINAL EXAM</b>						

**Grade Distribution:**

Your course grade will be determined by the following:

<i>Assessment Method</i>	<i>% of Final Grade</i>
First Exam	20 %
Second Exam	20 %
Final Exam	40 %
Quizzes, home works & reports	20 %

\* Provisional dates are scheduled in the course schedule.

***Distribution of examination material (may vary depending on material included ):***

- 45 % - questions based on critical thinking , connecting the topics and successful conclusions .
- 25% - questions based on memorizing ( if available )
- 30% - calculations and questions based on using laws presented in the course

**23. Course Policies:**

**A- Attendance policies:**

Attendance: Mandatory.

First warning – with 4 absences  
Last warning – with 5 absences  
Failing in the subject – with 6 absences

**B- Absences from exams :**

Will result in zero achievement unless health report or other significant excuse is documented.

**C- Health and safety procedures: NA**

**D- Honesty policy regarding cheating, plagiarism, misbehavior:**

The participation, the commitment of cheating will lead to applying all following penalties together

1. Failing the subject he/she cheated at
2. Failing the other subjects taken in the same course
3. Not allowed to register for the next semester. The summer semester is not considered as a semester

**E- Grading policy:**

Exams and Quizzes.

First Exam:	<b>20 points</b>
Second exam:	<b>20 points</b>
Assignments/quizzes:	<b>20 points</b>
Final Exam:	<b>40 points</b>
Total:	<b><u>100 points</u></b>

**F- Available university services that support achievement in the course:**

Classrooms, internet classes

**24. Required equipment:**

Data show and internet connection

**Make-up Exam Policy:**

*Make-up exams will be offered for valid reasons. They may be different from regular exams, both in content and format.*

**Textbooks information:**

**Main Reference:** Tortora G.J, Funke B.R.,Case,C.L. (2007). Microbiology An Introduction ( 11<sup>th</sup> edition )

**Other References:** Pharmaceutical Microbiology 7<sup>th</sup> edition ; Hugo and Russel

Micobiology A Systems Approach; 3<sup>rd</sup> edition Marjorie Cowan

**Additional information:**

***No side talks during lecture***

***No mobile phones during lecture***

***Entering the lecture theatre after the instructor is not permitted.***

***Homework should be done by students independently and will be asked at the exams***

**Course Material and Announcements**

Students need to use the e-learning page at the ASU website in order to get all lecture handouts and guidelines which will be uploaded there.

In addition, course related announcements and exam results will be posted on the ASU online AND/OR course website and is the responsibility of each student to check the sites regularly.