



## Course Specifications

<b>Course Title:</b>	General Microbiology
<b>Course Code:</b>	140 MBIO
<b>Program:</b>	Microbiology (B.Sc.)
<b>Department:</b>	Botany and Microbiology
<b>College:</b>	Science
<b>Institution:</b>	King Saud university

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## A. Course Identification

<b>1. Credit hours:</b> 3(2+0+1)
<b>2. Course type</b>
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> 3 <sup>rd</sup> level
<b>4. Pre-requisites for this course (if any):</b> NA
<b>5. Co-requisites for this course (if any):</b> NA

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

### 7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	15
3	Tutorial	
4	Others (specify)	
	<b>Total</b>	45

## B. Course Objectives and Learning Outcomes

<p><b>1. Course Description</b></p> <p>This course focuses on the general principles of microbiology, historical review of the pioneer microbiologist and development of Microbiology. This course introduces the main microorganism's groups and their characteristics.</p>
<p><b>2. Course Main Objective</b></p> <ol style="list-style-type: none"> <li>1- To provide the students a good principal of microbiology and microorganisms.</li> <li>2- To be familiar to microorganism's structure, living, metabolism, reproduction, their application and importance.</li> <li>3- To give the students a background about basic techniques used in microbiology lab.</li> </ol>

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
1	<b>Knowledge and Understanding</b>	
1.1	At end of the course, the student will be able to define the principle of Microbiology, microbial cells, microorganisms and their environment and differentiate between Prokaryotic and Eukaryotic cells structure and functions.	K1
1.2	At end of the course, the student will be able to outline historical Review of the pioneer Microbiologist and Development of Microbiology and compare between different types of Microscopes.	K2
1.3	At end of the course, the student will be able to define microbial growth, nutrition and metabolism	K3
1.4	At end of the course, the student will be able to understand the principle of immunology and the general concept of antimicrobial agents	K4
2	<b>Skills :</b>	
2.1	At end of the course, the student will be able to collect different samples and manipulate basic microbiology approaches	S1
2.2	At end of the course, the student will be able to design and write lab report	S2
3	<b>Values:</b>	
3.1	At end of the course, the student will be able to Work independently and as a part of a team.	V1

### C. Course Content

No	List of Topics	Contact Hours
1	Introduction and Principles of Microbiology	2+2
2	History of Microbiology and The Modern Era of Microbiology part 1	2+2
3	History of Microbiology and The Modern Era of Microbiology part 2	1+1
4	The different types of microscope	2+2
5	Eukaryotic cell	2+2
6	Prokaryotic cell	2+2
7	Nutrition and Cell Chemistry	1+2
8	Microbial growth and affecting factors	2+2
9	Microbial classification and diversity	2+2
10	Archaea	1+1
11	Fungi	1+1
12	Algae	1+1
13	Viruses	1+1
14	Antimicrobial	1+1
15	Immunity	1+1
<b>Total</b>		45

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding</b>		
1.1	At end of the course, the student will be able to define the principle of Microbiology, microbial cells, microorganisms and their environment and differentiate between Prokaryotic and Eukaryotic cells structure and functions.	Lecture	Exams (Final written exam, midterms, quizzes)
1.2	At end of the course, the student will be able to outline historical Review of the pioneer Microbiologist and Development of Microbiology and compare between different types of Microscopes.		
1.3	At end of the course, the student will be able to define microbial growth, nutrition and metabolism		
1.4	At end of the course, the student will be able to understand the principle of immunology and the general concept of antimicrobial agents		
<b>2.0</b>	<b>Skills</b>		
2.1	At end of the course, the student will be able to collect different samples and manipulate basic microbiology approaches	Practical lessons	Practical exam Performance based assessment using rubrics
2.2	At end of the course, the student will be able to design and write lab report		
<b>3.0</b>	<b>Values</b>		
3.1	At end of the course, the student will be able to Work independently and as a part of a team.	Lecture and practical lessons	Performance based assessment using rubrics

### 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework	2,4,6 ,8,10	5%
2	Lab evaluation	Every week	10 %
3	M1	5	15%
4	M2	9	10%
5	Practical exam	13	20%
6	Final exam	16	40%

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

### E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

5 office hours\week

2 hours for the academic advice

Email

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	Madigan, M. T., Martinko, J. M., Bender, K. S., Buckley, D. H., & Stahl, D. A. (2018). <i>Brock biology of microorganisms</i> (Fifteenth edition.) ISBN-13: 978-0134261928 ISBN-10: 9780134261928
<b>Essential References Materials</b>	
<b>Electronic Materials</b>	
<b>Other Learning Materials</b>	

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms laboratories
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	data show, Smart Board
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	specific laboratory equipment such as microscope – media – tools – dyes – microorganisms

## G. Course Quality Evaluation


Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students- course coordinator	– questioners – indirect
Extent of achievement of course learning outcomes	Faculty	Exam and quizzes- direct
Teaching strategy	Peer Reviewer – faculty - students	Direct - questioners
End of term college evaluation of course by students	Faculty - students	questioners

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

<b>Council / Committee</b>	<b>Academic Accreditation and Evaluation Committee</b> 
<b>Reference No.</b>	Update-1443
<b>Date</b>	17/09/1443