



وكالة الجامعة للشؤون التعليمية  
البرامج الدراسية والتطوير

( 5 )

مختصر توصيف

علم البكتريا

(Course Syllabus)

البكتريا	:
BIOL-332	:
الأحياء الدقيقة العامة BIOL-231	:
-	:
3	:
<b>Module Title:</b>	Bacteriology
<b>Module ID:</b>	BIOL-332
<b>Prerequisite (Co-requisite) :</b>	General microbiology, BIOL-231
<b>Co-requisite :</b>	-
<b>Course Level:</b>	5 <sup>th</sup>
<b>Credit Hours:</b>	3

**:(Course Information) \***

**Module Description**

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The subject emphasis the knowledge of:

- Bacterial structure
- Cell organelles and function
- Culture media, Growth and reproduction
- Genetics and genomics
- Identification strategies
- Plant and animal association and diseases
- Diagnostic approaches
- Antibiotics
- Disinfection and Sterilization

**Module Aims**

**أهداف المقرر :**

**To learn and understand :**

1	The ubiquitous nature of the bacteria, cell structure, organelles and their functions	1
2	Autotrophic and Heterotrophic bacteria, Nutritional requirements, culture media, bacterial growth and reproduction.	2
3	The basics of bacterial genetics and genomics in reference with mutagenesis, transformation, Conjugation and Transduction.	3
4	Bacterial Identification based on Phenotypic and Genotypic characteristics	4
5	Bacterial pathogenesis and diagnostic approaches	5
6	Bacterial control, Various classes of Antibiotics, Disinfection and Sterilization	6

**Learning Outcomes:**
**مخرجات التعليم:**

1	Describe the bacterial cell structure, Morphology, cell organelle and their functions	1
2	Describe the Autotrophic and Heterotrophic bacteria, Nutritional requirements, culture media and bacterial growth and reproduction	2
3	Describe phenotypic and Genotypic identification	3
4	Describe the basics of bacterial genetics, transformation, Conjugation and Transduction	4
5	Describe definite pathogens, non-pathogens and opportunistic pathogens	5
6	Describe plant and animal association and Diseases	6
7	Describe the diagnostic approaches	7
8	Describe the classes of antibiotics, disinfection and sterilization.	8

**Course Contents:**
**:**

ساعات التدريس (Hours)	الأسابيع (Weeks)	(Subjects)
3	2	Introduction  Bacterial cell structure, Morphology, functions of cell organelles
3	2	Autotrophs, Heterotrophs, Nutritional requirements, culture media and bacterial growth (Reproduction and Multiplication )
4	3	Bacterial phenotypic and Genotypic identification  Staining, Morphology, Motility, Oxygen, pH, Temperature, Spore forming character and enzyme production.  Specific Genes and sequencing
3	2	Bacterial genetics and genomics; Mutagenesis, Transformation, Conjugation and Transduction
2	1	Bacterial pathogenesis (Definite pathogen, Non-pathogen,

		Opportunistic pathogen)
3	2	Bacterial plant and animal association and diseases.
2	1	Diagnostic approaches, (Sample collection and culture procedures)
2	1	Antibiotics
2	1	Disinfection and Sterilization

**Textbook and References:**

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No	Name of the Text Book	Author	Publisher	Year	ISBN
1	Microbiology (Fifth Edition)	E.C.S. Chan, Michael J. Pelczar, Jr., Noel R. Krieg	Tata McGraw-Hill Education Pvt. Ltd	2001	SBN 10: <a href="#">0074623206</a> / ISBN 13: <a href="#">9780074623206</a>
<b>References</b>					
2	Bailey & Scott's Diagnostic Microbiology (14th Edition)	Patricia Tille	St. Louis, Missouri Elsevier	2017	978-0-323-35482-0
3	Text book of Microbiology (8 <sup>th</sup> Edition)	Ananthanarayan and Paniker	Universities press	2010	8125028080, 9788125028086
4	Prescott's Microbiology 10th Edition	Joanne Willey Linda Sherwood Christopher J. Woolverton	McGraw-Hill Education Pvt. Ltd	2016	ISBN-13: 978-1259281594 ISBN-10: 1259281590

Online References :

<http://periobasics.com/conventional-bacterial-identification-methods.html>

<http://biology.homeomagnet.com/classification-of-bacteria/>

