هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	*Bacteriology*
Course Code:	*BIO1303*
Program:	*Bachelor of Science in Biology*
Department:	*Department of Biology*
College:	*Faculty of Science*
Institution:	*University of Tabuk*
Version:	***Course Specification Version Number***
Last Revision Date:	*September 2023*

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours:					
3 Credit (2 theoretical + 1 practical) hours					
2. Course type					
A.	☐University	☐ College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (5th Level / 3rd year)					
4. Course general Description:					
This course covers topics on the morphology and structure of bacteria, their different forms and arrangement, bacterial identification, classification, and taxonomy; a different group of Gram (–ve) (aerobic rods and cocci and facultative anaerobic) and Gram (+ve) (Endospore and non-spore-forming bacteria) bacteria and their role in our life, nutrition in bacteria and its effect on their growth, the filamentous bacteria and their importance to the environment.					
5. Pre-requirements for this course (if any)**:**					
General Microbiology (BIO1206).					
6. Co-requirements for this course (if any)**:**					
None					
7. Course Main Objective(s):					
By the end of this course, the students should be able to: - Identify and describe the term bacteria. - Identify the forms, shapes, and structure of bacterial cells. - Distinguish Gram-Positive and Gram-Negative Bacteria. - Identify the plasma membrane, cell wall, cytoplasm, nuclear area of bacteria. - Describe aerobic, anaerobic, and facultative anaerobic bacteria. - Describe endospore-forming and non-spore-forming bacteria. - Describe the mode of nutrition in bacteria.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%

No	Mode of Instruction	Contact Hours	Percentage
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		
5	**Others (Lab work)**	2	50%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		**60**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Recognize the basic shapes, structure, and function of the bacterial cell.	K1	-Lectures. -Class discussion. -Group discussion. -Case studies.	-Quizzes -Midterm examination. -Final examination. -Class discussion and participation. - Homework (Problem-solving).

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.2	Describe Gram-positive and Gram-negative bacteria.	K2	-Lectures. -Class discussion. -Group discussion. -Homework assignments. -Case studies.	-Quizzes -Midterm examination. -Final examination. -Class discussion and participation. -Homework assignments.
2.0	**Skills**			
2.1	Differentiate taxonomically between the different groups of bacteria.	S1	-Lectures. -Lab work. -Short essay -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.2	Develop practical skills in sterilization, microscopy, and handling techniques, and staining procedures.	S2	-Lectures. -Short essay - Lab work. -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.3	Demonstrate the various methods for the identification of	S2	-Lectures.	-Quizzes

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	unknown microorganisms.		-Short essay -Class discussion. -Group discussion. -Brainstorming.	-reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
3.0	**Values, autonomy, and responsibility**			
3.1	Work in a team to conduct a specific project with minimal supervision.	V1	-Short essay -Class discussion. -Group discussion.	-Class discussion and participation. -Homework (Problem-solving).

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction, Distribution, Shapes & Morphology and Arrangement.	2
2.	Structure of Bacterial Cell, Cell Wall, Plasma Membrane, Cytoplasm and Nuclear Area.	2
3.	Classification & Different Groups of Bacteria.	2
4.	Bacterial groups (G-ve bacteria & G+ve bacteria).	2
5	Endospore & Non -endospore forming rods (Part1).	2
6.	Endospore & Non -endospore forming rods (Part2).	2
7.	Bacterial growth and Reproduction.	2
8.	Bacterial Nutrition & Interrelationship.	2
9.	Temperature &Oxygen requirements.	2
10.	PH, Osmotic & Radiation.	2
11.	Anaerobic Bacteria.	2
12.	Economic importance of bacteria (Part1).	2
13.	Economic importance of bacteria (Part2).	2

14.	Actinomycetes (Part1)	2
15.	Actinomycetes (Part2)	2
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Class Participation	During whole teaching period	5
2.	Homework (Problem-solving)	3 to 13	5
3.	Short Exams (Quizzes)	During whole teaching period	5
4.	Midterm Theoretical Examination	8-9	20
4.	Reports (For Practical)	During whole teaching period	10
5.	Final Practical Examination	15	15
6.	Final Theoretical Examination	17	40

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	- Willey, J. M., Sherwood, L., Prescott, M. L. and Woolverton, C. J. (2008). Prescott, Harley, and Klein's Microbiology, McGraw-Hill Higher Education.
Supportive References	- Madigan, M. T., Martinko, J. M., Bender, K. S., Buckley, D. H., Stahl, D. A. and Brock, T. (2014). Brock Biology of Microorganisms, 14th edition. Pearson, USA. ISBN: 9781292018317.
Electronic Materials	- http://www.textbookofbacteriology.net/kt_toc.html - On-line textbook of Bacteriology: Kenneth Tobar, U. of Wisconsin-Madison, Department of Bacteriology. URL (http://www.textbookofbacteriology.net/)

	- Websites on the internet that are relevant to the topics of the course - www.sciencedirect.com.
Other Learning Materials	- Multimedia associated with the textbook and the relevant websites. - American society of microorganisms.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	- A sufficient number of classrooms, well equipped Practical laboratories are available to accommodate students.
Technology equipment (projector, smart board, software)	- Data show. - Wireless connection in the building for students and faculties.
Other equipment (depending on the nature of the specialty)	- Well-equipped microbiology laboratory. - Instruments required for conducting the experiments such as: light microscope, incubator, autoclave, water bath, balance, UV, spectrophotometer.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	- Students. - Faculty members.	Indirect & direct: - Questionnaires. - Meetings.
Effectiveness of Students assessment	- Quality and development committee. - Department chair.	- Course report. - Program annual report.
Quality of learning resources	- Plan and program committee. - Students. - Staff members.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
The extent to which CLOs have been achieved	- Quality and development committee. - Peer Reviewer. - Program leaders.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	PROGRAMS AND STUDY PLANS COMMITTEE
REFERENCE NO.	
DATE	SEPTEMBER 2023