هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	*General Microbiology*
Course Code:	*BIO1206*
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: (4th Level / 2nd year)					
4. Course general Description:					
The course includes the systems of classification of living organisms, sources of microorganisms. Importance of microorganisms, metabolism of microorganisms, growth of microorganisms and reproduction, factors affecting growth, control of microbial activity, viruses (structure, classification, bacteriophage, cultivation, purification, and reproduction), Bacteria (structure, shape, motility, staining, spores in bacteria), Fungi (general characters, structure of fungal cell, sexual and asexual reproduction, classification, different group of fungi and Algae (general characteristics, morphology, diversity, structure, classification and reproduction).					
5. Pre-requirements for this course (if any):					
Fundamentals of Biology (BIO1101).					
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 microorganisms. - Identify the systems of classification of microorganisms. - Distinguish Bacteria, Viruses and Fungi. - Identify the sources and importance of microorganisms in relation to biology and environment. - Describes different growth patterns in microorganisms and the factors affecting microbial growth. - Describes structure, function and reproduction in Bacteria and Fungi. - Describes structure and replication in Viruses. - Describe different group of Algae.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
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	Describe the different groups of microorganisms.	K2	-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	List the general characters of the different groups of microorganisms.	K1	-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	Examine the different groups of microorganisms.	S2	-Lectures. - Lab work. -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.2	Differentiate taxonomically between the different genera of each group.	S1	-Lectures. - Lab work. -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
3.0	**Values, autonomy, and responsibility**			

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.1	Work independently in a team.	V1	- Essay writing - Lab demonstrations. - Discussion.	- Homework. - Participation and reports.
3.2	Conduct a specific project with responsibility and autonomy	V2	- Essay writing - Lab demonstrations. - Discussion.	- Homework. - Participation and reports.

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Microbial World & Taxonomy and Microbial Diversity	2
2.	Microbial Ecology & Ecosystems	2
3.	Metabolism of Microorganisms	2
4.	Factors Affecting Microbial Activity and Growth	2
5	Microbial Growth and Reproduction	2
6.	Control of Microbial Activity	2
7.	Viruses (General Characteristics, Structure and Classification)	2
8.	Viruses (Cultivation and Replication)	2
9.	Bacteria (General Characteristics, Cell Shape and Arrangement)	2
10.	Bacteria (Structure, Motility and Staining)	2
11.	Fungi (General characters, Structure of Fungal cell, and Reproduction)	2
12.	Different Groups of Fungi (Oomycota and Zygomycota)	2
13.	Different Groups of Fungi (Ascomycota, Basidiomycota and Deuteromycota)	2
14.	Algae (General Characteristics, Morphology, Diversity and Distribution)	2
15.	Algae (Structure, Classification and Reproduction)	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	- M. T. Madigan, J M. Martinko, and Jack Parker Brock biology of microorganisms. 16th edition. Benjamin Cummings, (2020). ISBN: 978-0134874401 - H. G. Schlegel. General Microbiology, 7th edition. Cambridge University Academic, UK (1993). ISBN: 9780521439800.
Supportive References	- Supportive References - Gamaluldin and Malavyia, N (2007). General Microbiology. - Scientific Publishers, New Delhi, India. ISBN: 987-81-7233-420-8. - List Essential References Materials (Journals, Reports, etc.) - General microbiology journals. - International Journal of General Microbiology.
Electronic Materials	List Electronic Materials, Web Sites, Facebook, Twitter, etc.
Other Learning Materials	Other learning material such as computer-based programs/CD

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	- Classrooms accommodate about 60 students/ room - Laboratories accommodate about 30 students/ Lab
Technology equipment (projector, smart board, software)	- Well-equipped lab and lecture room with computers and display screens installed with curtains on the windows are required
Other equipment (depending on the nature of the specialty)	- Laboratory instruments such as: autoclave- oven- microscope- spectrophotometer- incubator-air laminar flow-shaking incubator- distillatory- ultrabalance-refrigerator- deep freezer-bunsen burner flame.

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