هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	*Cell and Tissue Biology*
Course Code:	*BIO1203*
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: (3rd Level / 2nd year)					
4. Course general Description:					
This course provides information on general introduction and history of cell biology, Cell theory, tools and techniques in cell biology, molecules of the cell, types and structures of cells, structure & function of cell organelles, chromosomes; in Prokaryotes and Eukaryotes, cell cycle and cell division and cell cycle control. Also, the mechanism of integrating cells into tissues, and introduction on the types and morphology of tissues.					
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: - Make students able to understand basic and fundamental concepts of cell biology & tissues. - Provide knowledge about the structure and function of cells & tissues. - Give an idea about the history and doctrines related to cell biology. - Identify the prokaryotic and eukaryotic cells with the help of microscopy/laboratory techniques and using images/charts. - Prepare students with the detailed description of structure and function of cell and cell organelles.					

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 (specify) 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	Define comprehensive and fundamental concepts of cell biology.	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	Recognize different types of cells, cell division, cell organelles,chromosomes, chromosomes aberrations, etc... and tissues.	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	Differentiate Prokaryotic and Eukaryotic cells, cell organelles, Plant cells and Animal cells	S1	-Lectures. -Lab work. -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.2	Compare the stages of cell division under the microscope or using printed diagrams of cell division.	S2	-Lectures. - Lab work. -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.3	Investigate the tissues types	S4	-Lectures.	-Quizzes

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	applying laboratories techniques.		-Short essay -Class discussion. -Group discussion. -Brainstorming. - Lab work.	-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	V1	-Class discussion. -Group discussion. -Lab demonstration.	-Class discussion and participation. -Homework (Problem-solving).

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction, History and Background of Cell Biology, Cell Theory, tools in cell biology (microscopy)	2
2.	Molecules of the Cell (Carbohydrates, Lipids, Proteins, Nucleic Acids) (Part1)	2
3.	Molecules of the Cell (Carbohydrates, Lipids, Proteins, Nucleic Acids) (Part2)	2
4.	Prokaryotic cells: organelles structures & functions, reproduction & genetic exchange mechanisms	2
5	Eukaryotic cells: overall structure & organelles in plant/animal cells, comparison between plant & animal cells	2
6.	Cell membrane and cell transport	2
7.	Endomembrane system & cell trafficking: Secretory apparatus & endocytosis, Endoplasmic reticulum, Golgi Apparatus, Lysosome, Peroxisome	2
8.	Cell Energy & cellular respiration: function of mitochondria and chloroplasts and their role in metabolism	2
9.	Cytoskeleton & cellular motility	2

10.	Cell cycle: mitosis, meiosis & cell growth control (checkpoints)	2
11.	Integrating Cells into Tissues & types & morphology of tissues (epithelial tissue) nerve tissue)	2
12.	Integrating Cells into Tissues & types & morphology of tissues (connective tissue).	2
13.	Integrating Cells into Tissues & types & morphology of tissues (blood tissue).	2
14.	Integrating Cells into Tissues & types & morphology of tissues (muscle tissue)	2
15.	Integrating Cells into Tissues & types & morphology of tissues (nerve tissue)	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	- Thomas DP and William CE (2002) Cell Biology, WB Saunders Company, First Edition. ISBN-10- 0721639976, ISBN-13-9780721639970).

	- Thomas Dean Pollard, William C. Earnshaw, Jennifer Lippincott Schwartz, Graham T. Johnson (2017): Cell Biology, 3rd edition.
Supportive References	- Websites on the internet that are relevant to the topics of the course, www.sciencedirect.com. - Saudi Digital Library.
Electronic Materials	None
Other Learning Materials	Multimedia associated with the text book and the relevant websites

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Well-equipped classrooms and laboratories that accommodate a sufficient number of students
Technology equipment (projector, smart board, software)	Multimedia projectors and smart boards.
Other equipment (depending on the nature of the specialty)	NA

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