



Course Specifications

Course Title:	Cell Biology
Course Code:	BIO222
Program:	Bachelor of Science in Biology
Department:	Department of Biology
College:	Faculty of Science
Institution:	University of Tabuk

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A. Course Identification

1. Credit hours:	3 (2 Theoretical + 1 Practical) hours		
2. Course type			
a.	University <input type="checkbox"/>	College <input type="checkbox"/>	Department <input checked="" type="checkbox"/>
b.	Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>	Others <input type="checkbox"/>
3. Level/year at which this course is offered:	Level 4/ Second semester/ Second year		
4. Pre-requisites for this course (if any):	General Biology (BIO101)		
5. Co-requisites for this course (if any):	None		

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other (Lab work)	2	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	26
2	Laboratory/Studio	
3	Tutorial	
4	Others (specify)-Practical	26
	Total	52

B. Course Objectives and Learning Outcomes

1. Course 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 of cell organelles, Chromosomes; in Prokaryotes and Eukaryotes, its special types, cell cycle and cell division.

2. Course Main Objective

- To make students able to understand basic and fundamental concepts of cell biology - To provide knowledge about the structure and function of cells.
- To give an idea about the history and doctrines related to cell biology.
- To identify the prokaryotic and eukaryotic cells with the help of microscopy/laboratory techniques and using images/charts.
- To prepare students with the detailed description of structure and function of cell and cell organelles.



3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	To define comprehensive and fundamental concepts of cell biology.	K1
1.2	To recognize different types of cells cell division, cell organelles, chromosomes, chromosomes aberrations, etc...	K1
2	Skills :	
2.1	To differentiate Prokaryotic and Eukaryotic cells, cell organelles, Plant cells and Animal cells.	S1
2.2	To compare the stages of cell division under the microscope or using printed diagram of cell division.	S2
2.3	To use of internet and specifically MS office	S3
3	Values:	
3.1	To work in a team to conduct a specific project.	V1

C. Course Content

No	List of Topics	Contact Hours
1	Introduction, History and Background of Cell Biology, Cell Theory	2
2	Tools and Techniques in Cell Biology (Microscopy, Cell Fractionation, Centrifugation)	2
3	Molecules of the Cell (Carbohydrates, Lipids, Proteins, Nucleic Acids)	2
4	Prokaryotic and Eukaryotic cell	2
5	Structure of Bacterial Cell	2
6	Structure of Plant Cell	2
7	Structure of Animal Cell	2
	Midterm Exam	
8	Structure of Cell Organelles-I	2
9	Structure of Cell Organelles-I	2
10	Chromosomes (Prokaryotic and Eukaryotic, Special types of chromosomes)	2
11	Cell Cycle	2
12	Cell Division: Binary Fission in Bacteria, Mitosis	2
13	Cell Division: Meiosis and revision	2
	Final Exam	
	Total	26

No	(List of Topics (Laboratory part	Contact Hours
1	Light Microscope - training	2
2	Eukaryotic & Prokaryotic Cells	2
3	Preparation and examination of plant and animal cells	4
4	Eukaryotic cell organelles	2

5	Examining a Prokaryotic Cell (Bacteria).	2
6	Stained Temporary Mount of Onion Peel	4
	Mid Term Exam	
7	Human cheek cells	4
8	Mitosis In Onion Root Tips	4
9	Stages of Meiosis	2
	Final Practical Exam	
Total		26

D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	To define comprehensive and fundamental concepts of cell biology	- Lectures. - Case studies and articles.	- Quizzes. - Homework.
1.2	To recognize different types of cells cell division, cell organelles, chromosomes, chromosomes aberrations, etc	- Activities and homework.	- Final exams.
2.0	Skills		
2.1	To differentiate Prokaryotic and Eukaryotic cells, cell organelles, Plant cells and Animal cells.	- Lectures. - Individual and small group tasks.	- Assessment of lab reports and practical examinations.
2.2	To compare the stages of cell division under the microscope or using printed diagram of cell division	- Short essay. - Individual presentation and working as a part of group	- Individual and group presentations.
2.3	To use of internet and specifically MS office		
3.0	Values		
3.1	To work in a team to conduct a specific project.	- Essay writing. - Lab demonstration. - Individual presentation or group.	- Oral and written scientific report. - Interactive discussion and participation. - Work in groups.



2. Assessment Tasks for Students

#	*Assessment task	Week Due	Percentage of Total Assessment Score
1	Quizzes	1-13	10%
3	Midterm Theoretical Exam	8	25%
4	Midterm Practical Exam	8	10%
5	Final Practical Exam	14	15%
6	Final Theoretical Exam	15	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:

- Office hours: 6 hours / week.
- Academic Guidance for about 30 students as determined by admission and registration.
- Direct supervision of staff for lab works.
- Electronic communication through university web page and e-mail.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	- Thomas DP and William CE (2002) Cell Biology, WB Saunders Company, First Edition. ISBN-10- 0721639976, ISBN-13-9780721639970)
Essential References Materials	Thomas DP and William CE (2002) Cell Biology, WB Saunders Company, First Edition. ISBN-10- 0721639976, ISBN-13-9780721639970)
Electronic Materials	- Websites on the internet that are relevant to the topics of the course www.sciencedirect.com - Saudi Digital Library
Other Learning Materials	Multimedia associated with the text book and the relevant websites

2. Facilities Required

Item	Resources
Accommodation Classrooms, laboratories, demonstration) (.rooms/labs, etc)	-Lecture halls, containing white boards and electronic monitors -The seats fit the number of students Laboratories equipped with tables and water sources,- microscopes, slides, plant and animal samples
Technology Resources AV, data show, Smart Board, software,) (.etc)	Data show wireless connection in the building for students and- faculties
Other Resources Specify, e.g. if specific laboratory) equipment is required, list requirements or (attach a list	-Light Microscope

G. Course Quality Evaluation

Evaluation	Evaluators	Evaluation Methods
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Areas/Issues		
Effectiveness of teaching and assessment.	- Students.	Indirect - Questionnaires.
The extent of achieving the course learning outcomes.	- Program committee. - Staff members. - Students.	Direct - Questionnaires. - Reports. - Meetings
Quality of learning resources.	- Program leaders. - Peer Reviewer.	Direct & Indirect - Questionnaires. - Reports. - Meetings

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

Council / Committee	Biology department council
Reference No.	
Date	1/6/2022

