



Course Specifications

Course Title:	General Biology
Course Code:	23071101-4
Program:	BSc Biology
Department:	Biology
College:	Aljumum University College
Institution:	Umm Al-Qura University

Table of Contents

A. Course Identification	3
6. Mode of Instruction (mark all that apply)	3
B. Course Objectives and Learning Outcomes	4
1. Course Description	4
2. Course Main Objective	4
3. Course Learning Outcomes	4
C. Course Content	5
D. Teaching and Assessment	6
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods.....	6
2. Assessment Tasks for Students	7
E. Student Academic Counseling and Support	7
F. Learning Resources and Facilities	7
1. Learning Resources	7
2. Facilities Required	8
G. Course Quality Evaluation	8
H. Specification Approval Data	9

A. Course Identification

1. Credit hours: 4hrs
2. Course type a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/> b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: Level 2/ 1st year.
4. Pre-requisites for this course (if any): None
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	√	70%
2	Blended		
3	E-learning	√	10%
4	Correspondence	√	10%
5	Other	√	10%

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	28
2	Laboratory/Studio	42
3	Tutorial	6
	Practical/Field work/Internship	6
4	Others (specify)	10
	Total	92
Other Learning Hours*		
1	Study	
2	Assignments	
3	Library	
4	Projects/Research Essays/Theses	
5	Others (specify)	
	Total	

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

The course will cover the principle of eukaryotic cell structure and function. This course will provide a conceptual and experimental background in biology sufficient to enable students to take courses that are more advanced in related fields.

2. Course Main Objective

After completing this course student should be able to:

- Define the principles and concepts of the living cells.
- Differentiate between animal and plant cells.
- Aware of the protoplasmic and non-protoplasmic cell contents and its structure and function.
- Study the different types of animal and plants tissues (structure and function).
- Understand the biological activities of the living cells.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge:	
1.1	Student will be familiar with the general characters of plant cells.	
1.2	Student will be aware with the differences between plant and animal cells.	
1.3	Student will be familiar with protoplasmic and non protoplasmic contents of plant cell.	
1.4	Student will be familiar with the different types of plant tissues, their functions and distribution within plant body	
1.5	Describe the fine structure and functions of all living organelles.	
1.6	Explain biological activities of the animal cells	
1.7	Detect the difference between animal tissues.	
1.8	Explain the function of animal tissues	
1.9	Discuss the distribution of all animal tissues in the body organs	
2	Skills :	
2.1	Explain the structure and function of the plant and animal cells	
2.2	Understand the ultrastructure and function of living organelles	
2.3	Follow some of the biological activities of the cell	
2.4	List types of plant and animal tissues	
2.5	Differentiate between plant and animal tissues	
2.6	Explain specific characters of each tissues.	
2.7	Classify the plants and animal tissues	
2.8	The student will be able to detect the plant and animal tissues in the selected organs examined under the microscope	
3	Competence:	
3.1	Ability to work in a team to conduct a specific project.	
3.2	Conducting a specific project with minimal supervision	
3.3	Communicating results of work to others	

C. Course Content

#	List of Topics	No. of Weeks	Contact Hours
1	❖ Introduction: <ul style="list-style-type: none"> - The living cells. - Basis of cytology and histology. - Major differences between Eukaryotic and Prokaryotic cells. - Major differences between plant and animal cells 	1	3
2	❖ Plant cell morphology and structure I <ul style="list-style-type: none"> - Cell wall, middle lamella, types of pits. - Structure and function. - Cytoplasmic ultra-structure and function: Endoplasmic reticulum; mitochondria; Golgi apparatus, ribosomes 	1	3
3	❖ Plant cell morphology and structure II <ul style="list-style-type: none"> - Plastids, chloroplasts, chromoplast, leucoplast types, morphology, ultra structure and function, distribution. - Non protoplasmic contents of plant cell (cell vacuole – carbohydrates – proteins – fats and oils – crystals glycosides – latex – alkaloids – tannins – organic acids) 	1	3
4	❖ Animal cell morphology and structure I <ul style="list-style-type: none"> - Fine structure of the Cell membrane and Cell junctions - Functions of cell membrane (cell transport) - Mitochondria, Peroxisomes, - Lysosomes (phagocytosis, autocytosis and pinocytosis - Centrioles, cytoskeleton, microtubules and microfilaments. 	1	3
5	❖ Animal / Plant cell morphology and structure: The Nucleus <ul style="list-style-type: none"> - Nucleus, nuclear envelope, nucleopores, nucleoplasm, chromatin and nucleolus - Chromosomes, chromatids, centromere, chronema, nucleoproteins - Molecular structure of nucleic acids (DNA and RNA) - Basis of transcription and translation - Exercises, transcription of DNA sequence to RNA, translation of mRNA to a peptide chain of amino acids 	1	3
6	❖ Plant / Animal cell morphology and structure: Cell division <ul style="list-style-type: none"> - Cell cycle (Growth (G1), Synthesis (S), Gap (G2) and Mitose (M) phases) - Replication of DNA during S phase) - Cell Division (Mitosis and Meiosis). 	1	3
7	❖ Plant Histology I <ul style="list-style-type: none"> - Meristematic tissues in plants – classification of meristematic tissues – Apical and lateral meristems – 1^{ty} and 2^{ty} meristems. - Permanent tissues – Epidermis – Types of epidermis and their functions – Types of stomata – Hairs and trichomes. 	1	3
8	❖ Plant Histology II <ul style="list-style-type: none"> - Parenchyma tissues – Characters of parenchyma cells and their types – Collenchyma tissues - Characters of collenchyma cells and their types. 	1	3

	<ul style="list-style-type: none"> - Sclerenchyma – Fibers – Sclereids – Their structure, types, and distribution in plant body. - Secretary tissues 		
9	❖ Plant Histology III <ul style="list-style-type: none"> - Conducting tissues – Xylem structure – 1ry and 2ry xylem. - Phloem tissue (structure – function) – 1ry and 2ry phloem. - Types of vascular bundles – Some 2ry structures in plants – Annual rings – Periderm – lenticles. 	1	3
10	❖ Animal Histology I <ul style="list-style-type: none"> - Introduction to Animal tissues difference and distribution of the animal tissues in the human body - Epithelial tissues, simple and stratified epithelia, glandular epithelia 	1	3
11	❖ Animal Histology II <ul style="list-style-type: none"> - Connective tissues - Types of Cartilages. - Types of Bones. - Blood components 	1	3
12	❖ Animal Histology III <ul style="list-style-type: none"> - Muscular tissues - Nervous tissues 	1	3
Total		14 weeks	42 hrs

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		
1.1	The student should know the precise structure of the cell	Weekly lectures Interactive presentations -Video Shows (Educational Videos)	the exams - Group discussions
1.2	The student should remember the structure and function of the cellular organs	Weekly lectures Interactive presentations -Video Shows (Educational Videos)	Weekly oral test - Periodic tests - Group discussions
1.3	The student should know the animal and plant tissues of all kinds and their classification	Weekly lectures Interactive presentations -Video Shows (Educational Videos)	- Examinations
2.0	Skills		
2.1	The student should clearly explain all parts of the cell	- Weekly lectures - Collective discussion	Oral test
2.2	Students should choose appropriate methods for interpreting cellular	- Provide illustrations	- final exam Periodic

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	divisions		examinations
2.3	The student should practice leadership of the group in different situations and participate in the proposed discussions	- Active Education	-Collective discussion
3.0	Competence		
3.1	The student should choose a simplified method to explain a scientific experiment that serves the topics	- Lectures - Illustrations	Applied theoretically (practical paper test)
3.2	The student should specify the appropriate method for displaying the modules that she has learned	- Lectures and illustrations	
...			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Midterm exam	8	30%
2	Final Exam (Practical)	14	20%
3	Final Exam (theoretical)	17	40%
4	Participation	All weeks	10%
5			
6			
7			
8	Total		100%

*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 :

4 hours

Sunday(1-2), and Monday (1-2)

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	- Mader S. and Windelspecht M. (2018). Biology. 13 th edition. Mc Graw Hill. - Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V.
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	Minorsky, and Jane B. Reece. (2016). Campbell Biology. 11 th edition. Pearson.
Essential References Materials	Websites to explain all images
Electronic Materials	-
Other Learning Materials	-

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> Class rooms are already provided with data show Equipped laboratories. Reduce the number of students in class rooms.
Technology Resources (AV, data show, Smart Board, software, etc.)	Projectors
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	The practical part of the course is theoretically done in conjunction with illustrations, instruction and group discussion

G: Course Quality Evaluation

Evaluation Methods	Evaluators	Evaluation Areas/Issues
Oral questions The last lecture. (directly)	Professor of the course	Feedback from students on the effectiveness of teaching
Quick review of the vocabulary of the previous lecture before the start of the new lecture (directly)		
Giving different vital compounds and searching for their interactions as an optional homework to develop research and inquiry among students. (directly)	Professor of the course	Teaching Development
Checking the correction of a sample of students' tests by independent faculty members (direct)	Students	Procedures for verifying student achievement criteria
Conducting exams and group discussions for students (direct)	Faculty members of the same specialization Students	Planning for periodic review of the effectiveness of the course

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	
Reference No.	
Date	

Head of Department



Dr. Wessam M. Filfilan

Stamp

