Ministry of Higher Education and Scientific Research - Iraq
Al-Nahrain University
College of Science
Applied Pathological Analysis Department

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	HUMAN CYTOLOGY	**Module Delivery**	
Module Type	CORE		☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☐**Practical** ☒**Seminar**
Module Code	APPA112		
ECTS Credits	9		
SWL (hr/sem)	225		
Module Level	UGx11 1	**Semester of Delivery**	
Administering Department	Applied pathological Analysis	**College**	College of Science
Module Leader	Dr. Tania Tahseen Dr. Mustafa A. Hadid	**e-mail**	tania.tahseen@nahrainuniv.edu.iq hadid.m.a@nahrainuniv.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph. D.
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Review Committee Approval		**Version Number**	1
Laboratory Staff	Dr. Ruaa Hameed, MSc. Hadeer Faris, MSc. Mays Abdulhadi, MSC. Zeena Murshed, MSc. Ahmed Jabbar, MSc. Eman Adnan Abdulmajeed, Athar Abdulrazaq Waheb, MSc. Saddam Yahya Diwan, MSc. Zainab Ali, MSC. Nada Mohammed, MSC. Alaa Mohsen.		

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	The course is designed to teach the students: 1. A comprehensive understanding of the structure, function, and process of cells and the human body. 2. Understand behavior of the cells 3. Unravel the complexities of living organisms at the cellular level. 4. Knowledge of cell biology improves understanding of the human body; how it works, and its place in the natural world.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The students will be able to: 1. Understand the cells as the smallest unit of living organisms (definition, theory, and types of cells). Also, understand that cells are grouped into tissues, and tissues are organized into organs. 2. Another learning outcome is understanding cellular organization and reproduction. 3. Understand the genes and the structure of DNA and RNA molecules. 4. Understand the development of human body cells. 5. Studying cell biology forms the foundation for advancements in medical research, biotechnology, and our comprehension of life processes.		
Indicative Contents المحتويات الإرشادية	-In cytology, lectures typically cover the study of cells, including cell structure, function, and identification. -Topics may include cell types, organelles, and cell cycle stages. -The lab's practical aspects involve slide preparation and microscopic examination to identify normal and abnormal cells. -Specific areas like cytoplasmic and nuclear features are often discussed. Cover techniques for sample collection and processing as well.		
Learning and Teaching Strategies استراتيجيات التعلم والتعليم			
Strategies	**Learning Strategies:** Encourage students to take organized notes during lectures. Provide practice questions and problem-solving exercises. Participate actively in group discussions and collaborative activities. Make use of textbooks, online resources, and supplementary materials to reinforce learning. Provide constructive feedback on assignments and assessments. Feedback helps students understand their strengths and areas for improvement.		

	Teaching Strategies: - Encourage students to actively engage with the material through discussions and group activities to promote deeper understanding. - Deliver well-structured lectures that provide a clear overview of the topic. - Incorporate videos, animations, and interactive simulations to illustrate complex biological processes. - Assign readings or video lectures as homework and use class time for discussions and activities.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	131	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	225		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5,10	LO # 1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction and definition of Cytology. An overview of the cells as they are the smallest unit of living organisms (definition, theory, and types of cells). Understand that cells are grouped into tissues and tissues are organized into organs.
Week 2	Recognize cell structures as seen with a light and transmission electron microscope.
Week 3	Study the structures and functions of the cell (Part 1), including the cell membrane, mitochondria, endoplasmic reticulum, etc.
Week 4	Study the structures and functions of the cell (Part 2), including the cell membrane, mitochondria, Golgi apparatuses, endoplasmic reticulum, etc.
Week 5	Describe the structure of DNA molecules as two strands coiled to form a double helix containing nucleotides, strands linked by complementary bases, and bases linked by hydrogen bonds.
Week 6	Know that RNA is a second type of nucleic acid that has the following features: single-stranded, contains ribose, contains uracil; and RNA is used to take information from DNA in the nucleus to the ribosomes for the synthesis of proteins.
Week 7	**Mid-Term Examination**
Week 8	Understand that a gene is a length of DNA containing a sequence of bases coding for a specific protein
Week 9	Describe the functions of the nucleus, chromosomes, and ribosomes.
Week 10	Describe the structure of cells specialized for reproduction (ovum) and (sperm) and relate their structure to their function.
Week 11	Cell division and the cell cycle. Understand that mitosis occurs during growth.
Week 12	Know the four main stages of mitosis – prophase, metaphase, anaphase, and telophase – which result in the production of two genetically identical diploid daughter cells.
Week 13	Know the main stages of Meiosis I (Reduction Division).
Week 14	Know the main stages of Meiosis II (Equational Division) – which result in the production of four haploid daughter cells.
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Weeks	Material Covered
Week 1	**Lab 1**: The students will understand the structure, types, and function of the microscope, and how the student uses the microscope and prepares laboratory slides. Introduction of practical cytology.
Week 2	**Lab 2**: The students will understand what cell structure are, cell types, and size, and comparison among prokaryotic and eukaryotic cells.
Week 3	**Lab 3**: The students will understand the cell components and organelles including the cell wall, cell membrane, cytoplasm, and nucleus, and will see some cell types under the microscope in the laboratory.
Week 4	**Lab 4**: The students will understand the cell components including Ribosomes, endoplasmic reticulum, Golgi apparatus, lysosome, peroxisome, and vacuoles.
Week 5	**Lab 5**: Comparison among plant cells and animal cells and the students will take 2 experiments including Experiment 1 (Prepare a wet mount of onion epidermal skin) and Experiment 2 (Prepare a wet mount of cheek cells).
Week 6	**Lab 6**: The students will understand the cell cycle, the mitosis type of the cell cycle, what are the main stages of mitosis including prophase, metaphase, anaphase, and telophase, and will see some stages of cell division in the laboratory under the microscope.
Week 7	**Lab 7**: The students will understand the cell division and cycle, the meiosis type of the cell cycle and what are the main stages of meiosis including meiosis 1 and meiosis 2. Gametogenesis and comparison among somatic cells (diploid) and germ cells (haploid) including egg and sperm.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	International-GCSE-Human-Biology-Student-Book	No
Recommended Texts	"Biology" by Neil A. Campbell and Jane B. Reece	No
Websites	https://ia601502.us.archive.org/24/items/cnx-org-col11903/clark-college-human-biology.pdf	

APPENDIX:

GRADING SCHEME مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي