MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Cytology**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Che-12010**				
ECTS Credits	**8**				
SWL (hr/sem)	**200**				
Module Level		1	**Semester of Delivery**		2
Administering Department		Chem	**College**	CoS	
Module Leader	Najwa Jameel Hameed		**e-mail**	dr.najwajameel@uodiyala.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		01/06/2023	**Version Number**		1.0

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 Objectives أهداف المادة الدراسية	Preparing specialists who are familiar with the basics of cytology, theoretically and practically, who are able to meet the needs of the labor market, in addition to teaching cytology to students of other departments in the Faculty of Science and some other faculties at the university. Conducting scientific research and trying to keep pace with the scientific development of cytology. Cooperating with state institutions and the private sector by providing advice and scientific advice and conducting cytology.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Enable students to gain knowledge and understanding of the intellectual framework of cytology, enable students to acquire knowledge and understanding of international cytology standards, enable students to acquire knowledge and understanding of the laws of cytology ,enable students to acquire knowledge and understanding of cytolog analysis standards, enabling students to obtain knowledge and understanding of the law of the wrong use of cytological . skills goals special to the programme scientific skills , reminding and analyzing skills and uses , development skills .
Indicative Contents المحتويات الإرشادية	Biochemistry and cell membranes, Application of biochemistry , Biomolecules, cell membrane and cell wall contents , Plasma membranes , Endocytosis , Exocytosis , Alkaline buffer solutions ,

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Clarification and explanation of the study materials by the academic staff through the blackboard, smart board and computer. Providing students with knowledge through homework assignments for academic vocabulary Asking students to visit the library to obtain additional knowledge of the study materials .Improving students' skills by visiting websites to obtain additional knowledge of the study subjects .

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	106	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Biochemistry and cell membranes Application of biochemistry

Week 2	Biomolecules, cell membrane and cell wall contents
Week 3	Cellular transport across cell membranes , mechanisms of transfer materials through cell membranes
Week 4	Active transport, passive transport, carrier proteins
Week 5	proteins channels transport , potassium channels , Sodium potassium pump
Week 6	Endoplasmic reticulum, Golgi apparatus
Week 7	Plasma membranes
Week 8	**Midterm Exam**
Week 9	Endocytosis , Exocytosis
Week 10	Function of water in the body and cell , the solubility of compounds in water, buffer solutions
Week 11	Principal of buffering, acidic buffer solutions , adding acid or base to this buffer
Week 12	Alkaline buffer solutions , adding acid or base to this buffer
Week 13	Calculations involving buffer solutions, acidic buffer solutions ,
Week 14	alkaline buffer solutions
Week 15	Blood buffer
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Biochemistry and cell membrane ,Application to Biochemistry , Biomolecules, Cell membrane, Content of cell wall
Week 2	Cellular activities, Transport Across cell Membrane, Mechanism of transfer of materials through cell membrane
Week 3	Active transport, Passive transport, Carrier Protein, Channel Protein , Channel Protein Transport ,Potassium Channels, Sodium Potassium Pump
Week 4	Endoplasmic Reticulum Golgi apparatus , Plasma Membrane
Week 5	Endocytosis ,Exocytosis , The function of water in the body and cell, the solubility of

	compounds in water, Buffer solutions
Week 6	Principle of buffering, Acidic buffer solutions adding an acid to this buffer solution, adding an alkali to this buffer solution
Week 7	Alkaline buffer solutions, adding an acid to this buffer solution , adding an alkali to this buffer solution, Calculations Involving Buffer Solutions, Acidic Buffer Solutions, Alkaline Buffer Solutions , Buffer Solution in Blood
Week 8	Non-Living Cellular Components1
Week 9	Non-Living Cellular Components1
Week 10	Cell Shape and Size
Week 11	Cell Cycle- Cell Division-Mitosis
Week 12	Cell Cycle- Cell Division-Meiosis
Week 13	Cytogenetics
Week 14	Plant Cytogenetics
Week 15	Human and Cancer cytogenetic
Week 16	**Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	1- Essentials of Medical Biochemistry by N.V Bhagavan &Chung Eun-Ha 2- Lehninger Principles of Biochemistry by David L. Nelson & Michael M. Cox	Yes
Recommended Texts		No
Websites		

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	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks 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.