MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

AL MUSTAQBAL UNIVERSITY

Module Information			
معلومات المادة الدراسية			
Module Title	**Stem Cell & Gene Therapy**	Module Delivery	
Module Type	**Core**	☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**UOMU0307065**		
ECTS Credits	**5**		
SWL (hr/sem)	**125**		
Module Level	3	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Sciences of college
Module Leader	Sarah Raheem Hamza	**e-mail**	Sarah.raheem.hamza@uomus.edu.iq
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date		**Version Number**	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	MBT-2317	**Semester**	2
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives	1- To understand the nature and properties of Stem Cell and Gene therapy.

أهداف المادة الدراسية	2- To provide scientific understanding of Stem Cell and Gene therapy. and Their applications related with human, and animals
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of the course, the student will be able to: 1. Familiarity with working principles, tools and techniques in the field of stem cell and gene therapy. 2. Understanding of the strengths, limitations and potential uses of stem cells and how to use of gene therapy.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Classroom lectures and discussions. 2. Case studies and examples from original research articles.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا				
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	0
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل		125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	Quizzes	3	10	4, 6, 10	#1 and#2, #3-#5, #9
	Assignments	2	10	13 and 14	#1 and #12
	Projects / Lab.	1	10	continuous	all
	Report	1	10	15	#14
Summative assessment	Midterm Exam	2h	10	7	#1-#6, #8-#14
	Final Exam	3h	50	16	all
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
Material Covered	
Week 1	Introduction to Stem Cell biology and development
Week 2	Fundamental Human Embryology & Developmental Biology
Week 3	Types of stem cells
Week 4	Adult Stem Cells and Regeneration.
Week 5	Animal model for stem cells research
Week 6	Mesenchymal stem cells in regenerative medicine
Week 7	Clinical application of stem cells
Week 8	Ethical issues in stem cell research
Week 9	Med Exam.
Week 10	Cancer Stem cells
Week 11	Hematopoietic stem cell transplantation
Week 12	Stem cell and tissue engineering
Week 13	T Cell Immunotherapies
Week 14	Techniques in stem cell research and Regulation and ethics of stem cel
Week 15	Preparatory week before final exam.
Week 16	Final Exam.

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
Material Covered	
Week 1	Introduction to stem cell lab equipment
Week 2	Basic methods in stem cell culture : Basic Cell Culture Growth Conditions
Week 3	Stem cell separation methods: Density gradient centrifugation
Week 4	Stem cell separation methods : Density gradient centrifugation-negative selection
Week 5	Stem cell separation methods: Pre-plating and Conditioned expansion media
Week 6	Med Exam.
Week 7	Stem cell separation methods: Aqueous two-phase system using temperature responsive polymer
Week 8	Identification of stem cell : Cell surface pluripotency markers -1
Week 9	Identification of stem cell : Cell surface pluripotency markers -1
Week 10	Stem Cell transcription factors
Week 11	Identification and Isolation of Cancer Stem Cells 1
Week 12	Cell surface markers for cancer stem cells
Week 13	Preparatory week before final exam.
Week 14	Final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• Frontiers in Pluripotent Stem Cells Research and Therapeutic Potentials Bench-To-Bedside, 2018, • by Kuldip S. Sidhu. • Patient-Specific Induced Pluripotent Stem Cell Models: Generation and Characterization (Methods in • Molecular Biology) 1st ed. by Andras Nagy (Editor) and Kursad Turksen (Editor) • Stem Cell and Gene-Based Therapy: Frontiers in Regenerative Medicine, Alexander Battler, • Jonathan Leo, Springer.	
Recommended Texts	• Stem Cells Handbook: Stewart Sell, Humana Press; Totowa NJ, USA; Oct. 2020. • Frontiers in Pluripotent Stem Cells Research and Therapeutic Potentials Bench-To-Bedside, 2018, by Kuldip S. Sidhu.	
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.