

# MODULE DESCRIPTION FORM نموذج

## وصف المادة الدراسية

Module Information			
Module Title	Principle of Biotechnology		Module Delivery
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOMU0307021		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Sarah Raheem Hamza		e-mail <a href="mailto:Sarah.raheem.hamza@uomus.edu.iq">Sarah.raheem.hamza@uomus.edu.iq</a>
Module Leader's Acad. Title	Assistance Lecture	Module Leader's Qualification	Ms.c
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		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1- To understand the nature and properties of principle biotechnology. 2- To provide scientific understanding of application of principles biotechnology and nanotechnology in agriculture, health and environmental conservation.
Module Learning Outcomes	After successful completion of the course, the student will be able to: 1. Familiarity with working principles, tools and techniques in the field of

تاجر خم ملعتلا قدامل قيسار دلا	principle of biotechnology. 2. Understanding of the strengths, limitations and potential uses of principle and applications of biotechnology.
<b>Indicative Contents</b> المحتويات الإرشادية	Student responsibilities: 1. Study of course materials as specified by the instructor 2. Timely submission of given class assignment

### Learning and Teaching Strategies

مخرجات التعليم والتعلم

<b>Strategies</b>	1. Classroom lectures and discussions. 2. Case studies and examples from original research articles.
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### Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اعبوسا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	86	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	2
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>150</b>		

**Module Evaluation**  
المادة الدراسية

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

**Delivery Plan (Weekly Syllabus)**

المنهاج الاسبوعي النظري

	Material Covered
<b>Week 1</b>	<b>Principles and Techniques for Deoxyribonucleic Acid (DNA):</b>
<b>Week 2</b>	<b>Principles of DNA Manipulation</b>
<b>Week 3</b>	<b>Principles of Forensic DNA technology</b>
<b>Week 4</b>	<b>Principles of Pharmaceutical biotechnology</b>
<b>Week 5</b>	<b>Principles of molecular Diagnostics for disease 1</b>
<b>Week 6</b>	<b>Principles of molecular Diagnostics for disease 2</b>
<b>Week 7</b>	<b>Mid-term Exam</b>
<b>Week 8</b>	<b>Principles of Chromosomes</b>
<b>Week 9</b>	<b>Principles of Genes and genomes</b>
<b>Week 10</b>	<b>Principles of Bioinformatics</b>
<b>Week 11</b>	<b>Roles of Nucleotide Sequence Analysis in Human Genetics and Genomics</b>
<b>Week 12</b>	<b>Principles of Cloning vectors</b>
<b>Week 13</b>	<b>Principles of Genetic engineering</b>
<b>Week 14</b>	<b>Principles of Restriction enzymes</b>
<b>Week 15</b>	<b>Last-term Exam</b>

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab safety
Week 2	Chromosome preparation 1
Week 3	Chromosomal preparation 2
Week 4	Barr body and Sex determination preparation slide
Week 5	Drum stick and Sex determination preparation slide
Week 6	Mid-term Exam
Week 7	DNA extraction methods
Week 8	DNA extraction from blood
Week 9	Principles of PCR programming and using
Week 10	Principles of Primer designing and using
Week 11	Principles of Gel electrophoresis method
Week 12	Principles of Gel preparation and documentation
Week 13	Review
Week 14	Final exam

### Learning and Teaching Resources

مصادر التعليم والتعلم

	Text	Available in the Library?
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Required Texts	Benjamin Ewa Ubi, Abdulrazak B. Ibrahim, Hajiya Mairo Inuwa, Ifeoma Maureen Ezeonu, Charles Oluwaseun Adetunji , Emmanuel Olufemi Ekundayo, .2022.Multidisciplinary Applications and Advances in Biotechnology: Contributions from the Biotechnology Society of Nigeria Working Groups.1 <sup>st</sup> ed., CRC Press is an imprint of Taylor & Francis Group, LLC	
Recommended Texts	Benjamin Ewa Ubi, Abdulrazak B. Ibrahim, Hajiya Mairo Inuwa, Ifeoma Maureen Ezeonu, Charles Oluwaseun Adetunji , Emmanuel Olufemi Ekundayo, .2022.Multidisciplinary Applications and Advances in Biotechnology: Contributions from the Biotechnology Society of Nigeria Working Groups.1 <sup>st</sup> ed., CRC Press is an imprint of Taylor & Francis Group, LLC	
Websites		

Grading Scheme				
ططم تاجردلا				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	زايتما	90 - 100	Outstanding Performance
	B - Very Good	ديج ادج	80 - 89	Above average with some errors
	C - Good	ديج	70 - 79	Sound work with notable errors
	D - Satisfactory	طسوتم	60 - 69	Fair but with major shortcomings
	E - Sufficient	لوبقم	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
<p><b>Note:</b> 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.</p>				