

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Mathematics II		Module Delivery
Module Type	Basic learning activities		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	BCE123		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Rawa Ghassan Yousuf	e-mail	Rawa.g@kecbu.uobaghdad.edu.iq
Module Leader's Acad. Title	Doctor	Module Leader's Qualification	Ph.D.
Module Tutor	Yossur Dhafer	e-mail	yossr.zafer1105a@kecbu.uobaghdad.edu.iq
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	BCE113	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	<ol style="list-style-type: none">1. To become familiar with parts of the theoretical framework that is appropriate at this level.2. To understand the integral and its relation to the derivative.3. To master techniques of integration for simple integrals.4. To develop students' mathematical thinking, understanding, competence and confidence in the application of mathematics, their creativity, enjoyment and appreciation of the subject.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none">1. Basic mathematic subjects2. Application of derivative and integral in engineering science3. Demonstrate the knowledge and understanding of the fundamental concepts, principles and theories underpinning Biochemical Engineering with core knowledge in: engineering analysis4. Generate ideas, proposals and solutions or arguments independently and/or collaboratively in response to set scenarios and/or self initiated activity;5. Develop design briefs with clarity graphically and/or in written specifications6. Skills in solving problems.
Indicative Contents المحتويات الإرشادية	Differentiation Rules (4hr) The Chain Rule with Powers of a Function (4hr) Implicit Differentiation (4hr) Derivatives of Higher Order (4hr) Rational Powers of Differentiable Functions (4hr) Linearization and Differentials (4hr) Derivatives of Exponential and Logarithm Functions (4hr) APPLICATIONS OF DERIVATIVES (4hr) Integration (4hr) Substitution and Area Between Curves (4hr) Integration By Parts (2hr) Integration of Rational Functions by Partial Fractions (4hr) Trigonometric Integrals (4hr) Polar Coordinates (4hr) Circles in Polar Coordinate (4hr)

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.
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Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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	4	20% (20)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	20% (20)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Report				
Summative assessment	Midterm Exam		10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Differentiation Rules
Week 2	The Chain Rule with Powers of a Function
Week 3	Implicit Differentiation
Week 4	Derivatives of Higher Order
Week 5	Rational Powers of Differentiable Functions
Week 6	Linearization and Differentials
Week 7	Derivatives of Exponential and Logarithm Functions
Week 8	APPLICATIONS OF DERIVATIVES
Week 9	Integration

Week 10	Substitution and Area Between Curves
Week 11	Integration By Parts
Week 12	Integration of Rational Functions by Partial Fractions
Week 13	Trigonometric Integrals
Week 14	Polar Coordinates
Week 15	Circles in Polar Coordinate
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Finney and Thomas	Yes
Recommended Texts	Engineering Mathematics: 7th Edition	No
Websites	https://mathway.com/	

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.