	وزارة التعليم العالي والبحث العلمي **جامعة المستقبل** كلية العلوم قسم الكيمياء الحياتية	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Mathematics			**Module Delivery**	
Module Type	Basic			☒**Theory** ☐**Lecture** ☐**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	UOMU036114				
ECTS Credits	4				
SWL (hr/sem)	100				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Dept. of Biochemistry		**College**	College of Science	
Module Leader			**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	.10	

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	1. Introduce basic definitions and introductory concepts of the Mathematic including the basic understanding of Functions and their Domain and Range 2. To become familiar with parts of the theoretical framework that is appropriate at this level. 3. To understand the integral and its relation to the derivative. 4. To master techniques of integration for simple integrals. 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	Basic mathematic subjects Relationship between variables and responses. Demonstrate the knowledge and understanding of the fundamental concepts, principles and theories underpinning Biochemical Engineering with core knowledge in: engineering analysis Generate ideas, proposals and solutions or arguments independently and/or collaboratively in response to set scenarios and/or self-initiated activity; Develop design briefs with clarity graphically and/or in written specifications Skills in solving problems.
Indicative Contents المحتويات الإرشادية	Real and Complex numbers (8 hr) Functions and Their Graphs (8hr) Inequalities (8hr) Trigonometric Functions (8hr) Limits (8hr) Conic Sections (8hr) Differentiation (12 hr) Exam (3 hr)

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.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	5% (10)	5, 10	LO #3,4, 8 and 9
	Assignments	2	5% (10)	2, 12	LO # 2,11and 12
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	6	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	14	LO # 1-13
	Final Exam	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Real and Complex numbers, Complex number algebra, complex number in polar coordinates
Week 2	Complex numbers in polar coordinates, complex numbers in exponential forms.
Week 3	Functions and Their Graphs**.**
Week 4	Functions: Domain and Range
Week 5	Inequalities
Week 6	Inequalities: Solving quadratic inequalities, Solving rational inequalities
Week 7	Trigonometric Functions**.**

Week 8	Trigonometric Functions**.**
Week 9	Limits
Week 10	Limits: L'Hôpital's rule**.**
Week 11	Conic Sections: Circle, Parabola, Ellipse, and Hyperbola**.**
Week 12	Conic Sections: Circle, Parabola, Ellipse, and Hyperbola**.**
Week 13	Differentiation: The definition of the derivative, Basic derivative rules**.**
Week 14	Differentiation: Higher order derivative, Chain rule, Implicit differentiation**.**
Week 15	Differentiation: Applied problems**.**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Thomas Calculus: 13th edition	Yes
Recommended Texts	Engineering Mathematics: 6th Edition	Yes
Websites	https://mathway.com/	

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.