MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	Mathematics		**Module Delivery**
Module Type	C		• ☒ **Theory** • ☐ **Lecture** • ☐ **Lab** • ☐ **Tutorial** • ☐ **Practical** • ☐ **Seminar**
Module Code	UOMU021011		
ECTS Credits	8		
SWL (hr/sem)	240		
Module Level	1	**Semester of Delivery**	1
Administering Department	Air-conditioning and Refrigeration Eng. Tech. Dep.	**College**	UOMU
Module Leader	Hussein K. Halwas	**e-mail**	hussein.kadhim@uomus.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	15/07/2023	**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 Aims أهداف المادة الدراسية	Teaching of the students the basic and advanced principles of calculus and its applications to develop the students' mental abilities to solve problems and make use of available information in the other scientific materials.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	To apply the knowledge of mathematics, science and engineering fundamentals.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	Assessment is based on hand-in assignments, written exam, Case study, Quizzes, seminars, Practical testing and Online testing.

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	87	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	153	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	10
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	240		

Module Evaluation **تقييم المادة الدراسية**					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	Quizzes	2	10% (15)	5, 10	LO #1, 2, 7 and 9
	Assignments	4	10% (15)	2, 8	LO #3, 4, 5 and 6
	Projects / Lab.	0	0	0	
	Report	2	10% (10)	7, 14	LO #5, 6 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO #1 - 7
	Final Exam	2 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
	Material Covered
Week 1	Determinants, properties, Cramar's rule, application of determinant

Week 2	Vectors, vectors in space, unit vector, Scalar product, vector product
Week 3	Trigonometric functions& relation, Graphing of functions, Trigonometric equations
Week 4	Function of limits, Algebraic limit, Trigonometric limit, Infinity as limit
Week 5	Derivative rule, Algebraic& Trigonometric derivative, Chain rule, velocity& acceleration
Week 6	Inverse trigonometric functions& its derivative, Logarithm& Exponential functions& its derivative
Week 7	Hyperbolic functions& its derivative, Inverse hyperbolic functions& its derivative
Week 8	Integration, integrals of trigonometric& inverse functions, Integrals of logarithm& Exponential functions
Week 9	Integrals of logarithm& Exponential functions, Integrals of hyperbolic functions& its derivative, L'Hopitals's rules
Week 10	Integration methods; Integration by parts, Integration by partial fraction
Week 11	Integration by trigonometric substitution, Integration of ax2 + bx + c
Week 12	Application of Integration, Area under the curve& between two curves
Week 13	Surface area generated, Length of the curve
Week 14	Volume generated by rotation of curve, Simple differential equations
Week 15	Simpson rule for area, Trapezoidal rule for area, applications
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	Advanced *Engineering Mathematics*	Yes
Recommended Texts	Calculus	Yes
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.