	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al_Anbiyaa.... College of Engineering Oil and Gas Department	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Calculus I			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	ENG113				
ECTS Credits	**5**				
SWL (hr/sem)	**150**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	OGE		**College**	Engnieering	
Module Leader	Hawraa majeed		**e-mail**	hawraa.majeed@uowa.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MS.c	
Module Tutor	2		**e-mail**	E-mail	
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	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-Developing and strengthening students' problem-solving skills. In particular, students 2- Teaching them to read, write, speak, and think in the language of mathematics. 3- Learning how to apply calculus tools to a variety of problem situations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Developing and strengthening students' problem-solving skills. In particular, students 2- Teaching them to read, write, speak, and think in the language of mathematics. 3- Learning how to apply calculus tools to a variety of problem situations.
Indicative Contents المحتويات الإرشادية	• The area of mathematics known as calculus is primarily concerned with limits, functions, derivatives, trigonometric functions, and infinite series. An important component of modern mathematics education in this subject. Using derivatives to solve related rates problems • Using derivatives to approximate points (linearization) • Evaluating limits using L'Hopital's law • Locating critical points using the first derivative • Identifying increasing/decreasing values using the first derivative • Locating critical points using the second derivative • Identifying concavity and inflection points using the second derivative • Using the first/second derivative tests to find local and global extrema • Using derivatives to solve optimization problems

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	• Give emphasis on conceptual understanding. • Set challenging homework that expands on what you learned in class.

	• Cooperative learning techniques should be used. • Ask thoughtful questions. • Concentrate on logical thinking and actual problem-solving. • Use a variety of assessment methods.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects /	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Exponential and logarithm functions
Week 2	Application of Exponential and logarithm functions
Week 3	The relationship between the Exponential function and the logarithm function
Week 4	Trigonometric functions
Week 5	The inverse of Trigonometric functions
Week 6	Hyperbolic functions

Week 7	The inverse of Hyperbolic functions
Week 8	Derivative
Week 9	Implicit differentiation Exponential functions derivative
Week 10	Maximum and Minimum using Derivatives
Week 11	The logarithm functions derivative
Week 12	Derivative of hyperbolic functions
Week 13	Applications of differentiation
Week 14	Increasing and decreasing functions
Week 15	**Preparatory week before the final Exam**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	George B. Thomas, "THOMAS' CALCULUS ", Eleventh Edition 2011, Dorling Kindersley (India). • Murry R. Spiegel," Mathematical Handbook of formulas and tables",1968.	
Recommended Texts	• 2-Ford , S.R. and Ford , J.R. " Calculus " , (1963) McGraw-Hill. • 3-K.Back house and S.P.T. Houldsworth " Pure Mathematics a First Course " (1979) , S1 Edition , Longman Group .	
Websites	• https://tutorial.math.lamar.edu/classes/calci/calci.aspx • https://learn.saylor.org/course/MA005	

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.