

Module Information				
Course Information				
Module Title	Calculus I		Module Delivery	
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	ENG113			
ECTS Credits	5			
SWL (hr/sem)	150			
Module Level	UGI	Semester of Delivery		1
Administering Department	OGE	College	Engineering	
Module Leader	Ahmed Adnan		e-mail	Ahmed.ad@uowa.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	PHD	
Module Tutor	2		e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail	
Scientific Committee Approval Date	01/11/2023	Version Number	1.0	

Relation with other Modules			
Relationship with other subjects			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Course objectives, learning outcomes and instructional contents	
Module Aims Course Objectives	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	1- Developing and strengthening students' problem-solving skills. In particular, students

Learning outcomes of the course	<p>2- Teaching them to read, write, speak, and think in the language of mathematics.</p> <p>3- Learning how to apply calculus tools to a variety of problem situations.</p>
<p>Indicative Contents</p> <p>Indicative Contents</p>	<ul style="list-style-type: none"> • 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

<p>Learning and Teaching Strategies</p> <p>Learning and Teaching Strategies</p>	
<p>Strategies</p>	<ul style="list-style-type: none"> • 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.

<p>Student Workload (SWL)</p> <p>The student's academic load is calculated for 15 weeks</p>			
<p>Structured SWL (h/sem)</p> <p>Regular academic load of the student during the semester</p>	75	<p>Structured SWL (h/w)</p> <p>Regular student load per week</p>	5
<p>Unstructured SWL (h/sem)</p>	72	<p>Unstructured SWL (h/w)</p> <p>Irregular student academic load per week</p>	5

Irregular academic load of the student during the semester			
Total SWL (h/wk) The student's total academic load during the semester	150		

Module Evaluation					
Course Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	in #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	in #3, 4, 6 and 7
	Projects / Report	1	10% (10)	Continuous	All
		1	10% (10)	13	in #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)	
Theoretical Weekly Curriculum	
	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		
Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	<p>George B. Thomas, "THOMAS' CALCULUS ", Eleventh Edition 2011, Dorling Kindersley (India).</p> <ul style="list-style-type: none"> Murry R. Spiegel, " Mathematical Handbook of formulas and tables", 1968. 	
Recommended Texts	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> https://tutorial.math.lamar.edu/classes/calci/calci.aspx https://learn.saylor.org/course/MA005 	

Grading Scheme				
Grading chart				
Group	Grade	Appreciation	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	privilege	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	medium	60 - 69	Fair but with major shortcomings
	E - Sufficient	popular	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – File	Deposit (in processing)	(45-49)	More work required but credit awarded
	F – File	Failure	(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.