MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics/ I**			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE107**				
ECTS Credits	**5**				
SSWL (hr/sem)	63				
USSWL (hr/sem)	**62**				
SWL (hr/sem)	**125**				
Module Level		1	**Semester of Delivery**		1
Administering Department		CE	**College**	GE	
Module Leader	Mohammed Talal		**e-mail**	Mohammed.talal@alnaji-uni.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		Ph.D. Ph.D.
Module Tutor			**e-mail**	E-mailMohammed.talal@alnaji-uni.edu.iq	
Peer Reviewer Name		Mohammed Talal	**e-mail**	E-mailMohammed.talal@alnaji-uni.edu.iq	
Scientific Committee Approval Date			**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 Objectives أهداف المادة الدراسية	1. Introduce basic definition and explain the basic concepts that essential in connection with Limits and continuity and illustrate these concepts by examples. 2. Introduce the basic concept and rules of differentiations and their applications. 3. Introduce basic definition and explain the basic concepts that essential in connection with function and their graph. 4. Summarizing the definition and explain the concepts and the essential of Transcendental functions including their derivatives, graphs and applications and illustrate these concepts by examples. 5. Introducing basic definition and explain the basic concepts that essential in connection with Hyperbolic functions including their derivatives, graphs and applications and illustrate these concepts by examples.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Enable students to solve the Limits. 2. Enable students to classify functions that have continuity or not. 3. Graphing all types of functions. 4. Summarize the rules of differentiations. 5. Describing and solving the chain rule and the implicit differentiation. 6. Discussing and solving the applications of derivatives. 7. Describing the transcendental functions including their derivatives, applications and graphs. 8. Describing the Hyperbolic functions and their graphs.
Indicative Contents المحتويات الإرشادية	<u>Part A – Limits, Functions and Continuity</u> Introduction definition of functions including the domain and range. In addition, preview the rules of differentiation. [12 hrs] <u>Part B – Graph Functions</u> Graphing all types of functions. [12 hrs] <u>Part C – Application on derivatives</u> Definitions of chain rules and the implicit of derivatives and including the applications on differentiations. [12 hrs] <u>Part D – Transcendental functions</u> Definitions, types and derivatives of functions and their inverse of the transcendental functions and including their graphs and applications. [10 hrs] <u>Part E – Hyperbolic functions</u> Definitions, types and derivatives of functions and their inverse of the hyperbolic functions and including their graphs. [10 hrs]

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 محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**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**	1	10% (10)	10	LO #1, #2 and #10, #11
	Assignments	1	10% (10)	12	LO #3, #4 and #6, #7
	Projects / Lab.	-	-	-	-
	Seminar	1	10% (10)	11	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (20)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction – Limits and continuity
Week 2	Type of functions, domain and range
Week 3	Rules of derivatives
Week 4	Examples on differentiations
Week 5	Trigonometric Functions
Week 6	Inverse Trigonometric Functions
Week 7	Mid-term Exam + Graph of functions
Week 8	Graph of functions
Week 9	Chain rules
Week 10	Implicit differentiations
Week 11	Applications on differentiations
Week 12	Derivatives and graph the functions of hyperbolic functions.
Week 13	Derivatives and graph the inverse functions of hyperbolic functions.
Week 14	Derivatives and graph the functions of transcendental functions.
Week 15	Derivatives and graph the inverse functions of transcendental functions.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	----------

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Thomas' Calculus, Early Transcendentals by George B. Thomas	Yes

Recommended Texts	Calculus by Howard Anton	No
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.