Date:	Examination No.:	Version:07/01/2024	Start: 07/01/2024

Module Name - Code	Mathematics II- 1109
Module Language:	English
Responsible:	Barzan OMAR
Lecture (s):	Mr. Barzan OMAR/ MSc
College:	Civil Department-College of Engineering – Salahaddin University
Duration:	15 week – Fall Semester
Course outcomes:	At the end of the semester, students would be able to 1. Interpret a function from an algebraic, numerical, graphical and verbal perspective and extract information relevant to the phenomenon modeled by the function. 2. Ability to evaluate the integrals of complex functions. 3. Ability to find the integral value of complex function by approximate method. 4. Ability to evaluate the integral of function with infinite domain and fine the values of integrals.
Course Content:	

Week No.	Description
1	General Introduction about the module and Coursebook description Chapter 1: Transcendental Functions 1.1 Inverse Function

2	Chapter 1: Transcendental Functions
	    1.2 Natural Logarithm (ln)
	    Quiz 1

3	Chapter 1: Transcendental Functions
	    1.3 Exponential Function
	    1.4 The Function $y=a^x$
	    Quiz 2

4	Chapter 1: Transcendental Functions
	    1.4 Ordinary Logarithm
	    1.5 Base 10 Logarithm
	    1.6 Inverse of Trigonometric Function
	    Quiz 3

5	Chapter 1: Transcendental Functions
	    1.6 Inverse of Trigonometric Function
	    1.7 Hyperbolic Function
	    Quiz 4

6	Chapter 2: Techniques of Integration
	    2.1 Basic Integration Formula
	    2.2 Integration by Part

		Quiz 5
	7	Chapter 2: Techniques of Integration 2.3 Integration of Rational Function by Partial Fraction Quiz 6

	8	Chapter 2: Techniques of Integration
		    2.3 Trigonometric Substitution
		    Quiz 7
		
		    Mid-Term Exam

	9	Chapter 2: Techniques of Integration
		    2.4 Numerical Integration
		    2.4.1 Trapezoidal Rule
		Quiz 8

	10	Chapter 2: Techniques of Integration
		    2.4 Numerical Integration
		    2.4.2 Simpson's Rule
		Quiz 9

	11	Chapter 2: Techniques of Integration
		    2.5 Improper Integration
		    2.5.1 Infinite Limit of Integration
		Quiz 10

	12	Chapter 2: Techniques of Integration
		    2.5 Improper Integration
		    2.5.2 Integral with Vertical Asymptotes
		Quiz 11

	13	General Example and Review the module
	14	Quiz 12, 13, 14
	15	Final Exam
Literature:		1. George B. Thomas, Jr, Maurice D. Weir, Joel Hass, Christopher Heil <<THOMAS' CALCULUS 13/E>> Pub, Pearson, 2010. 2. George B. Thomas, Jr, Maurice D. Weir, Joel Hass, Frank R. Gird <<THOMAS' CALCULUS 11/E>> Pub, Pearson, 2005. 3. Salas Hile <<CALCULUS ONE VARIABLE 9th edition>> pub, John Wiley and sons, 2003. 4. Howard Anton <<CALCULUS WITH ANALYTIC GEOMETRY; 3ed edition>> pub, John Wiley, 1983. 5. James Swart <<CALCULUS 5th edition>> pub, Thomson, 2003. 6. R. Finney and G. Thomas <<CALCULUS AND ANALYTIC GEOMETRY 10th edition>> pub, Addison Wesley, 2003.
Type of Teaching:		3 hrs. theory per week 1 hr. tutorial per week
Pre-requisites:		1102
Frequency:		Yearly in Fall semester
Requirements for credit points:		For the award of credit points, it is necessary to pass the final module exam if: 1. **The minimum annual effort is 15%.** 2. **Student's attendance is required in all classes**.

Credit point:	5
Grade Distribution:	For the award of credit points, it is necessary to pass the module exam. The module exam contains: A mid-term exam, class room activities, quizzes, home works and final exam on June. So, the final grade will be based upon the following criteria: | Mid-term exam	20%
Activities and Quizzes	20%
Final exam	60%
Total	100%	
Work load:	The workload is 120h. It is the result of 60h attendance and 60h self-studies.