

Ministry of Higher Education and Scientific research



Department of ... Software and Informatics Engineering

College of ... Engineering

Salahaddin University – Erbil

Subject: Mathematics I

Course Book –Year 1

Lecturer's name: Nawroz Ibrahim Hamadamen

Academic Year: 2018 -2019

Course Book

1. Course name	Mathematics I
2. Lecturer in charge	Nawroz Ibrahim
3. Department/ College	Software and Informatics / Engineering
4. Contact	Nawroz.hamadamen@su.edu.krd 07507884014
5. Time (hr. / week)	4 per Group
6. Office hours	3 per Week
7. Course overview: Continuous Mathematics-1 is a one-semester course taken by all departments of Engineering. This course aims to indicate where and how mathematical techniques are used from the exercises and examples. <ul style="list-style-type: none"> ➤ All handouts and homework assignments are ONLINE. ➤ It is your responsibility to download assignments. 	
8. Course Objective: <ul style="list-style-type: none"> ▶ Understand how engineers solve problems step by step and properly. ▶ Be aware of the weak points and the errors they expect during the mathematical solutions before starting their program. ▶ Be familiar with the major rules, geometries, equations, functions, & graphs ▶ Understand the role of mathematics and how the development of technology has been related to the development of mathematics. 	
9. Students' Obligation <ul style="list-style-type: none"> ➤ Regular attendance is required according to the university rules. ➤ The use of mobile phones during class is prohibited. ➤ Only the students who are officially enrolled can attend the class; guests and children are not admitted. ➤ Daily participation and conducting assignments are required. 	

10. Forms of Teaching:

The subject will be given theoretically in the class, depending on the PPT. Slides were given to the students before the lecture's day; whiteboard and pen were mostly used, and the subject was frequently cleared step by step. Homework is normally given throughout the academic year, and we also have (an hour to 2 Hours) **tutorial** part of the lecture have daily activity marks on it; this defines calculating exercises and examples of different ideas on the white board. There will be Quizzes also on a pointed day.

11. Assessment Scheme:

Exam	Mark
Mid Term	20%
Course Activities	20%
Final Course Exam	60%
Total	100%

12. Course Reading List:

- 1- Thomas Calculus 11th edition 2005
- 2- Thomas Calculus by "George B.Thomas" 12th edition 2010
- 3- Schaum's outlines Matrix Operations 2nd edition 1989
- 4- Discrete mathematics "P.K. Mittal" 1st edition 2004

26 Weeks: From the 15th of October to 15th of May

1st Week	Course Description Preliminaries (Straight Lines)
2nd Week	Graph of a Function
3rd Week	Limit, Inverse Functions, Limits, & Inverse Example Solutions
4rd Week	Derivative and the Tangent Line Problem
5th Week	Derivatives of Some Basic Functions and Implicit Differentiation (The Chain Rule)

6th Week	Derivatives of Logarithmic & Exponential Functions
7th Week	The Inverse Trigonometric Functions and Proof of their Derivatives
8th Week	Derivatives of Order 2 and Higher & Application of Derivatives in Real Life
9th Week	Applications on Differentiation (Increasing and Decreasing Functions, Tangent and Normal to a Curve, Maxima & Minima, Approximation, Point of Inflection) Curve Sketching
10th Week	Matrices and Determinants (Elementary operations with matrices and vectors, Properties of multiplication)
11th Week	Determinants, The Adjugate (Classical Adjoint) of A, Inverse of a Matrix, Orthogonal Matrices, Singular Matrix, Useful Facts about Determinants
12th Week	Solving Simultaneous Linear Equations by Matrix Using Cramer's Rule) Solving Problems & Exercises
13th Week	Application on Matrices Real Life Problem Solutions Using Matrices
14th Week	Writing *** 3.17 Real-time writing 3.18 Learning new writing skills 3.19 Grammar for writing
15th, 16th, 17th, 18th, 19th, 20th, 21th, 22st, 23nd,	Tutorials Activities on Solving Problems Searching and Collecting Problems for Report
24rd, 25th, 26th, 27thWeeks	Review & Skill

