University of Salahaddin-Hawler College of Science Department of Computer Science& Information Technology



Course Book



Undergraduate Degree in Computer Science 1st Year Class Academic year 2014-2015

> Assistant Instructor Sheelan K.Sharaza

M.Sc.degree in Applied Mathematics Email: <u>shelan2001@yahoo.com</u>

Class hours: Sunday 12:30 pm – 1:30 pm Group -A-1:30 pm – 2:30 pm Group -B-Monday 8:30 am – 10:30 am Group -A-10:30 am – 12:30 pm Group -B-

Office hours: Thursday 10:30 am- 12:30 pm

<u>Format</u>

3 hrs/week of lecture,

Unit Value: 6 units

Course Description

Calculus is considered as a fundamental tool in many fields of study including science, business, and engineering. This course emphasizes the concepts of differential and integral calculus and provides experience in the methods and applications of these concepts. All concepts will be studied graphically, numerically and analytically.

Course Goals

The basic goal of this course is to teach the students more than they have studied at their higher school and to extent their knowledge about new objects in mathematic like complex numbers , functions ,derivative , integration and so on.And to make contact of these subjects with their life and the applications in the computer science to enable them to solve their problems in programming , database , compiler , computation statistic ... etc.

Student Evaluation

The students are required to do two main theoretical exams during the academic year. From the two theoretical exams, the degree can be calculated of 40 marks: Exam 1: 20 % marks. Exam 2 : 20% marks Final exam: 60 % marks.

The examination schedule will be announced by the department.

<u>Recommended references</u>

- [1] Howard Anton, Calculus with Analytic Geometry (Fifth Edition), 1995.
- [2] Thomas, Calculus (Eleventh Edition).
- [3] James Stewart, Calculus (Seventh Edition), 2012

Weekly Topics

week 1,2 : Real numbers, Rules for Inequality , intervals.
week 3 : Complex numbers and their properties
week 4 : Function of one variable limits
week 5 : Limits, Continuity of functions
week 6 : Continuity of functions
week 7,8 : Derivative and its application
week 9,10: Functions two variable and their derivatives
week 11,12: Applications of partial derivatives
week 13,14: Integration of one variables
week 15,16,17: Integration of one variables and two variables
week 17,18 : Applications of Integration
week 19,20 : Infinite sequences
week 21,22 : Infinite series

Final exam will be determined by the exam board of the college.

Notice that This syllabus may be subject to changes; we may take either longer or shorter time to finish them.