King Saud University Mathematics Department

Math-254 (NUMERICAL METHODS) Second Semester (1444 H)

TEXTBOOK: Introduction to Numerical Analysis using MATLAB

AUTHOR: Rizwan Butt

Note: The Contents of the course will be covered by the following sections:

CHAPTER 1: 1.2,1.3.
CHAPTER 2: 2.1,2.2,2.3,2.4,2.5.
CHAPTER 3: 3.1,3.2,3.3,3.4,3.5,3.6,3.7.
CHAPTER 4: 4.1,4.2,4.3.
CHAPTER 5: 5.1,5.2,5.3,5.4,5.5.
CHAPTER 6: 6.1,6.2,6.3.

Theorems, Lemmas and Notes:
Theorems 2.1-2.6,3.1-3.20,4.1-4.6,5.1-5.5,6.1-6.2.
Lemmas 2.1,2.2,2.3,2.4.
Notes 2.1,2.2,2.3,2.4.

Note: About the **10 Tutorial Marks** we do as follows:
Homework Assignments (2 marks) + Computer Assignment (2 marks) + One Quiz (6 marks).
Note: Homework, Computer Assignments and quiz should be taken in the tutorial classes.

NAMES OF CHAPTERS OF THE COURSE

Chapter 1: Introduction to Numerical Methods.
Chapter 2: Solution of Nonlinear Equations. (3 weeks (10 hours))
Chapter 3: Systems of Linear Algebraic Equations. (3 weeks (10 hours))
Chapter 4: Polynomial Interpolation and Approximation. (3 weeks (10 hours))
Chapter 5: Numerical Differentiation and Numerical Integration. (3 weeks (10 hours))
Chapter 6: Numerical Solution of Ordinary Differential Equations. (1 week (4 hours))

Computer Assignment: Write computer program of the following method.
Simpson's Rule for Numerical Integration. (Chapter 5).

First Quiz: (10 Marks)Sunday(Monday): 01(02)-06-1444(25(26)-12-23) Time: 35 Minutes (Lecture times).
Second Quiz: (10 Marks)Sunday(Monday): 00(00)-00-1444(00(00)-00-23) Time: 35 Minutes (Lecture times).
One Midterm: (30 Marks)Wednesday: 25-06-1444(18-01-23) Time:7:0-9:00 PM.
Final Exam: (40 Marks)Thursday: 10-08-1444(02-03-23) Time:1:0 - 4:00 PM.

https://fac.ksu.edu.sa/rizwanbu