King Saud University **Mathematics Department**

Math-254 (NUMERICAL METHODS) Second Semester (1440-41 H)

TEXTBOOK: **Introduction to Numerical Analysis using MATLAB**

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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 Marks** we do as follows:
Two Quizzes (3+3) + **Computer Assignment** (2) + **Class Attendance** (2).
Note: Quizzes, Computer Assignments and Class Attendance 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.
Chapter 3: Systems of Linear Algebraic Equations.
Chapter 4: Polynomial Interpolation and Approximation.
Chapter 5: Numerical Differentiation and Numerical Integration.
Chapter 6: Numerical Solution of Ordinary Differential Equations.

Computer Assignment: Write computer program of the following method.
Taylor's method of order 3 for Ordinary Differential Equations. (Chapter 6).

Dates of Midterm and Final Examinations will be take place as follows:

First Mterm: (25 Marks)Wednesday: 23-07-1441(18-03-20) Time:7:0-8:30 PM.
Second Mterm: (25 Marks)Wednesday: 22-08-1441(15-04-20) Time:7:0-8:30 PM.
Final Exam: (40 Marks)Saturday: 09-09-1441(02-05-20) Time:1:0-4:00 PM.

http://faculty.ksu.edu.sa/rizwanbutt/default.aspx