

King Saud University **Mathematics Department**
Math-254 (NUMERICAL METHODS) First Semester (1445 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 Tutorial Marks** we do as follows:

Attendance in Tutorial Class (2) + Computer Assignment (2) + Quiz (6).

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. (4 weeks (12 hours))

Chapter 3: Systems of Linear Algebraic Equations. (4 weeks (12 hours))

Chapter 4: Polynomial Interpolation and Approximation. (3 weeks (9 hours))

Chapter 5: Numerical Differentiation and Numerical Integration. (3 weeks (9 hours))

Chapter 6: Numerical Solution of Ordinary Differential Equations. (1 week (3 hours))

Computer Assignment: Write computer program of the following method.

Lagrange Interpolation Formula. (Chapter 4).

First Midterm: (25 Marks)Wednesday: 26-03-1445(11-10-23) Time:7:00-8:30 PM.

Second Midterm: (25 Marks)Wednesday: 01-05-1445(15-11-23) Time:7:00-8:30 PM.

Final Exam: (40 Marks)Monday: 07-05-1445(11-12-23) Time:1:00 - 4:00 PM.

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