

MATH 417-500, Numerical Analysis, Spring 2013

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Course homepage: <http://www.math.tamu.edu/~murtazo/teaching/math417/>

Class hours: Mondays/Wednesdays/Fridays, 11:30 am-12:20 pm, Blocker 149

Lab sessions: Tuesdays, 08:00 am-08:50 am, Blocker 124

Textbook: Numerical Analysis, 9th edition, by R. Burden and J. Faires (7th and 8th editions should also work)

Prerequisites: Two years Calculus sequence, some knowledge of computer programming

Objectives: In this class, you will learn the basic concepts and some elementary methods in numerical analysis. We will discuss iterative methods to compute roots of nonlinear equations and linear systems of equations and study their convergence. Then, we will learn how to approximate functions by polynomials and to estimate the approximation error. Finally, you will have basic knowledge of numerical methods for the solution of ordinary differential equations.

Schedule:

Week 1: sec. 1.2, 2.1, 2.2

Week 2: sec. 2.3, 2.4,

Week 3: sec. 3.1, 3.2

Week 4: sec. 3.3, 4.1

Week 5: sec. 4.2, 4.3

Week 6: sec. 4.4, 4.5,

Week 7: sec. 4.6, 4.7

Week 8: sec. 5.1, 5.2

Week 9: sec. 5.3, 5.4

Week 10: sec. 6.1, 6.2

Week 11: sec. 6.3, 6.4, 6.5

Week 12: sec. 6.6, 7.1

Week 13: sec. 7.2, 8.1

Week 14: sec. 8.2, Review for Final

Homework: Solving the homework problems in time helps you to understand the subject, get more learning experience and get prepared to the midterm and final exams. Therefore, it is highly recommended to solve them in time.

There will be 5 set of programming exercises. You may have to demonstrate your program to the teaching assistant and you will have to write a short report individually. The credit will be given only

for correct solutions.

Examinations: There will be one midterm and one final examinations.

Midterm: to be decided

Final: May 8, 10:30 a.m.-12:30 p.m, Blocker 124

Grading:

Homeworks/Programming assignments+Quizzes: 20+20 = 40%

Midterm: 30%

Final: 30%

Make-Up Policy: Make-ups for exams will only be given with documented University-approved excuses (see University Regulations). Consistent with [University Student Rules](#), students are required to notify an instructor by the end of the next working day after missing an exam. Otherwise, they forfeit their rights to a make-up.

Scholastic Dishonesty: Students may work together and discuss the homework problems with each other. Copying work done by others is an act of scholastic dishonesty and will be prosecuted to the full extent allowed by University policy. For more information on university policies regarding scholastic dishonesty, see [University Student Rules](#).

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