

Engineering Mathematics Review
GENG 4010 Oklahoma State University
Fall 2009

Course Objective

The purpose of this course is to prepare potential graduate engineering students for advanced course work in engineering disciplines (especially those who have been out of school for several years, or those who earned their B.S. degree in Engineering Technology or other science based programs).

Course Description

The course material is designed to cover the areas of mathematics that are most utilized in the study of graduate Engineering. The emphasis will be in the areas of: Matrices, Differential Equations, Fourier Analysis, Complex Numbers, Laplace Transforms, Probability Theory and Mathematical Statistics. The computer software MATLAB will be used to aid in the computation and understanding of each of the main topics covered.

Instructor

Dr. Doug West
Phone (316) 253-8112 evenings, before 10 pm Central Time
E-mail: DWest61506@aol.com

Prerequisites: Calculus

Credits

none

Texts

Advanced Engineering Mathematics, 9th Edition, by Erwin Kreyszig, John Wiley & Sons.

The Student Edition of MATLAB Version 7 (or latest version)

MATLAB Supplemental Material for Advanced Engineering Mathematics (provided by the instructor)

(Optional) Advanced Engineering Mathematics: Student Solutions Manual and Study Guide, 9th Edition, by H. Kreyszig and E. Kreyszig.

Video Tapes, Homework, and Correspondence

All questions and problems with video tapes, homework assignments, and tests should goto:

Nathan Cragun
OSU Engineering Extension
512 Engineering North
Stillwater, OK 74078-5023

(405) 744-5148
FAX (405) 744-5033
e-mail: nathan.cragun@okstate.edu

Grading and Exams

Three exams, worth 100 points each and eight homework assignments will be required. Three of the eight homework assignments will be graded and are worth 35 points each. There are a total of 405 points possible for the course. Grades will be based on the scale:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
59% and below	F

The three exams will be two hours in length, closed book and notes. Do your own work and show all relevant steps to determine the final answer. A calculator (not a small computer) is allowed. Make-up exams will not be given, if you are going to be out of town during test week, arrange with your site coordinator to take the test a few days early.

Schedule

The section references (1.1) are from the Kreyszig text and the M- references are from the MATLAB Supplemental Handout.

<u>Week of</u>	<u>Lecture Topic</u>	<u>Homework Due</u>
Week 1	Intro., Syllabus, Calculus Rev.	
Week 2	Chapter 1	
Week 3	Chapter 1, Chapter 2	
Week 4	Chapter 2	Ch 1
Week 5	Test #1 Review, Chapter 6	Ch 2
Week 6	Test #1 over Chs 1 and 2; Ch 6	
Week 7	Go over test #1, lecture Chapter 6	
Week 8	Chapter 7	Ch 6
Week 9	Chapter 7, Chapter 11	
Week 10	Chapter 11	Ch 7
Week 11	Test #2 Review, Chapter 13	Ch 11
Week 12	Test #2, Chapter 13	
Week 13	Go over Test #2, Chapter 24	Ch 13
Week 14	Chapter 24	
Week 15	Chapter 25, Test #3 review	Ch 24
Week 16	Test #3 - Over Ch. 13,24,25, go over Test 3	Ch 25

During the first month of the semester a letter will be sent out that gives the correspondence between the week number and the calendar. This will give exact dates for the homework sets and tests.

Homework Assignments

The homework assignments are due by the Friday of the week listed on the schedule. Homework is considered on time if it is postmarked by the due date or given to the site coordinator by the due date. Late homework will be accepted late with a 20% reduction per week.

Chapter 1

Sec.	Number
1.1	2, 12, 21
1.2	2
1.3	2, 11, 24
1.4	6, 19
1.5	10, 25
M-1	1, 2

Chapter 2

2.1	2, 17
2.2	22, 33
2.5	1, 12
2.7	1, 16
2.9	5, 10
M-2	1, 2

Chapter 6

6.1	2, 29
6.2	10, 13
6.3	3, 28
6.4	1, 6
6.5	3, 10
M-6	1, 2

Chapter 7

7.1	2, 7
7.2	5, 26
7.3	2, 17
7.7	5, 18
M-7	1, 2

Chapter 11

11.1	13, 14
11.2	3, 10
11.7	3, 10
11.8	8, 11
11.9	5, 6
M-11	1, 2

Chapter 13

13.1	7, 9, 16
13.2	4, 9, 17
13.3	3, 12
13.4	5, 8
13.5	3, 14
13.6	5, 8
M-13	1, 2, 3

Chapter 24

24.1	5, 13
24.2	2, 11

24.3	1, 6
24.5	3, 8
24.6	13, 14
M-24	1, 2, 3

Chapter 25

25.2	1, 2
25.3	1, 8
M-25	1