

MATH 261 Linear Algebra
Spring 2010
MWF, 11:30 am - 12:30 pm in Frey 345

Instructor: Dr. Angela Hare
Frey 321
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Office Hours: Tuesday, 2:00-4:00 pm
Wednesday & Friday, 9:00 am - 11:00 am
or by appointment

Text: *Elementary Linear Algebra*, by Howard Anton. 2005. 9th edition, John Wiley Publishers. ISBN 0-471-66960-1.

Course Objectives:

1. To gain a strong working knowledge of the standard terminology, definitions and techniques of linear algebra.
2. To solve systems of linear equations including best approximations for those that do not have solutions.
3. To understand matrices and their central role in organizing numerical information.
4. To introduce the student to the deductive/axiomatic method of mathematics.
5. To visualize geometrically examples of subspaces, linear transformations, images, kernels, basis, dimension, eigenvectors, eigenspaces, etc.
6. To become comfortable with using *Maple* for many of the computational chores of linear algebra.
7. To see examples of significant applications of linear algebra techniques.

Prerequisites: MAT 112 or instructor's consent

Course Description and Requirements:

The assignments you will be given in this class are designed to motivate you to think about and work on linear algebra problems regularly and consistently throughout the semester. Get in the habit early of reading your textbook both before and after we discuss a topic in class and working on the assigned homework as soon as possible. Occasionally, we will meet in one of the computer labs and work on projects which apply the tools of linear algebra to applied problems. You will be using *Maple*, a computer algebra package, as you work on these problems individually or in small groups. Prior experience with this software is not assumed.

Your performance in this course will be assessed primarily according to your performance on

written exams and assignments as listed below. The percentages should be viewed only as a guideline.

Written exams (3:100 pts each):	300 points
Homework Sets (7: 10 pts each)	70 points
Lab Projects (4: 30 pts each):	120 points
Quizzes (7: 20 pts each):	140 points
Final exam:	150 points
Attendance:	20 points

800 points total

92-100: A	90-91: A-	87-89: B+	81-86: B	79-80: B-	76-78: C+
70-75: C	68,69: C-	58-67: D			

Late Work/ MakeUp Policy:

All written assignments should be handed in on or before the assigned due date, during the class period. There will be a 2-pt grade reduction per weekday for late homework sets. In the case of scheduling conflicts such as athletic events or other excused absences, quizzes may be taken ahead of time, but not after they are given in class. If you are ill and notify me before the quiz, the quiz grade will be replaced by your average on remaining quizzes.

Exams are not given after they have been given in class. If you miss an exam for a college-sponsored trip or if you are ill and notify me before the exam, then your percentage grade on the final exam will be used for your grade on the missed exam.

Calculators:

You should have access to some type of scientific or graphing calculator to use in class and for homework assignments. There are no specific calculator requirements or restrictions for the course.

Student Math Helpers:

Student math helpers are available on a free, walk-in basis Monday through Thursday evenings (7-9 pm) in Frey 341 throughout the semester. In addition, Andrew Patton is a student assistant for this course. He will be conducting review sessions on Tuesdays 7-8 pm and Thursdays 2:50-3:50 pm. These sessions are optional but encouraged. Andrew will answer homework questions and go over practice problems that are similar to quiz and exam problems.

Weather Emergency

In case of a weather emergency, all class plans will be moved up to the next official meeting time, and assignment due dates will change accordingly. If Messiah College is not closed, you should assume that class is meeting as scheduled.

Final Exam

The final exam period is scheduled for Tuesday, May 11, 10:30 am to 12:30 pm. Please make a note of this date and time, as your attendance is required. Changes to the final exam schedule may only be made if you have more than two exams scheduled for the same day. In

this case, you must complete a “Request for Final Examination Change” form and submit it to the Registrar’s Office at least one week prior to the first day of final exams.

Students needing special accommodations:

Any student whose disability falls within ADA guidelines should inform the instructor at the beginning of the semester of any special accommodations or equipment needs necessary to complete the requirements for this course. Students must register documentation with the Office of Disability Services.

Maple Student Edition (optional information)

Student Maple 13 Licensing - Home Use

As a student of Messiah College, you are eligible to receive 25% off a student home use license of Maple 13 . To purchase, please go to <http://webstore.maplesoft.com/> and enter the following information:

1. Purchase Type: Student
2. Your Location: United States
3. Promotional Code, if any: MessiahLH06

Please note, you must enter the promotional code in order to receive the discounted price.

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MATH 261, Dr. Angela Hare
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Day	Date	Assignment
Mon.	February 1	Chapter 1, Sections 1 and 2 1.1: Problems 1,2 1.2: Problems 3, 14, 18, 25(use technology)
Wed.	3	1.3: 2, 4a-d, 6b, 6d, 22
Fri.	5	1.4: 6a, 16 Quiz 1: 1.1-1.3 Homework 1 due: 1.1-1.3
Mon.	8	1.5: 3, 6, 10
Wed.	10	(From this point on in the course, you may use technology to row-reduce matrices, unless specifically asked to show by hand.) 1.6: 2, 12, 16, 20
Fri.	12	1.7: 2, 6, 10, 18 Quiz 2: 1.4-1.6 Homework 1 due: 1.4-1.6
Mon.	15	Begin Project 1 Meet in F145
Wed.	17	Exam 1: Chapter 1

Day	Date	Assignment
Fri.	19	2.1: 2, 6, 8, 18, 34 Project 1 due
Mon.	February 22	2.2: 2, 6, 12, 20
Wed.	24	2.3: 2, 4, 13, 16
Fri.	26	2.4: 4, 14, 22 Quiz 3: 2.1-2.3 Homework 3 due: 2.1-2.3
Mon.	March 1	4.1: 2, 3, 4, 10, 16
Wed.	3	4.2: 4, 8, 13, 20, 30
Fri.	5	4.3: 2, 6a, 6b, 8c, 8d, 14 Quiz 4: 4.1-4.3 Homework 4 due: 4.1-4.3
Mon.	8	Begin Project 2 Meet in F145
Wed.	10	Exam 2: Chapters 2 and 4

Day	Date	Assignment
Fri.	12	5.1 Project 2 due
	15	Spring Recess March 13–21, 2010 No Classes
	17	
	19	
Mon.	March 22	5.2
Wed.	24	5.3
Fri.	26	5.4 Quiz 5: 5.1-5.3 Homework 5 due: 5.1-5.3
Mon.	29	5.5
Wed.	31	Begin Project 3 Meet in F145
Fri.	April 2	Easter Break April 2–5, 2010 No Classes
Wed.	7	5.6 Project 3 due

Day	Date	Assignment
Fri.	9	Quiz 6: 5.4-5.6 Homework 6 due: 5.4-5.6
Mon.	12	Begin Project 4 Meet in F145
Wed.	14	Exam 3: Chapter 5
		April 15 – Service Day No Classes
Fri.	April 16	6.1, 6.2 Project 4 due
Mon.	19	7.1
Wed.	21	7.2
Fri.	23	7.2, cont. Quiz 7: 6.1, 6.2, 7.1, 7.2 Homework 7 due: 6.1-7.2
Mon.	26	9.3
Wed.	28	
Fri.	30	No Class Meeting (MEB Student Scholars' Expo: Attendance required)

Day	Date	Assignment
Mon	May 3	Cumulative Review
	5	May 5 – Reading Day
Tues.	11	Final Exam: 10:30 am – 12:30 pm, F345