

SYLLABUS FOR MATH 221-01 (3512)

Introduction to Linear Algebra

Spring 2017

MoWe 1:00 PM - 2:15 PM (MP 103)

Instructor: Florian Potra
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Office Hours: MoWe 3:00 PM – 4:00 PM.

Textbook: *Linear Algebra and Its Applications*, by D. C. Lay, Addison-Wesley, Fourth Edition, 2011.

COURSE OUTLINE

Chapter 1 (Sections 1.1 → 1.9)

Chapter 2 (Sections 2.1 → 2.3)

Chapter 4 (Sections 4.1 → 4.6)

Chapter 3 (Sections 3.1 → 3.2)

Chapter 5 (Sections 5.1 → 5.3)

Chapter 6 (Sections 6.1 → 6.4)

GRADING POLICY

Your grade in this course will be based on two in-class midterm exams, a comprehensive final exam, homework problems, quizzes and class participation. Homework problems are assigned at the end of each class. I collect each Monday problems assigned during the previous week. These will have the following weights:

	Weight	Examination Date
Homework, quizzes and class participation	30%	homework due every Monday
Exam 1	20%	March 1, Wednesday
Exam 2	20%	April 5, Wednesday
Final Exam	30%	May 24, Wednesday, 1:00- 3:00 PM

Letter grades for the course will be based on your total score(S) which is the weighted sum of scores in the two midterm exams, homework, and the final exam:

Score (S)	$85 < S \leq 100$	$75 < S \leq 85$	$65 < S \leq 75$	$50 < S \leq 65$	$0 \leq S \leq 50$
Grade	A	B	C	D	F

The grading system may be changed for the entire class or in individual cases at the discretion of the instructor.

Class attendance is mandatory and will be checked routinely.

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory.

<http://www.umbc.edu/provost/integrity/faculty.html>

Learning Goals

By the end of this course, you should:

- understand and remember the key ideas, concepts, definitions, and theorems of the subject,
- be able to apply mathematical theorems and computational algorithms correctly to answer questions, and interpret their results correctly, including potentially non-unique solutions or breakdowns of algorithms,
- be able to choose the most useful theorem or most efficient computational algorithm in a particular analytical or computational circumstance,
- appreciate the power of mathematical generalization (or abstraction) and understand how mathematical theory is developed,
- have enhanced your ability to communicate mathematical ideas and algorithms orally and in writing,
- have enhanced your ability to learn mathematics by reading mathematics books.

To achieve these goals, you should:

- preview each section before it is covered in the class,
- come to every class and ask questions,
- read the section in the text before attempting to work out its exercises; and read it again if necessary,
- form and participate in a study group,
- try hard to work out each exercise by yourself first; discuss it in a study group if necessary; and ask the instructor to show how it is done as a last resort only after the assignment is handed in,
- do and hand in each assignment on time.

HOMEWORK

1. The homework assignment of week n is due at the beginning of the Monday class of week $n + 1$. Late homeworks are not acceptable, unless a doctor's note is stabled to the homework.
2. Please (i) write you name, course/section number, chapter/sections covered clearly on the front page of each homework assignment; (ii) answer questions completely, when appropriate, in complete sentences; (iii) staple your homework; and (iv) present the problems in the order assigned. In case of violation of any of these, 20 percent of the points assigned to the homework assignment may be deducted from you score on the assignment.
3. If you find an error in grading, write a note to point out the error, staple the note to the homework, and hand it back to the instructor within one week of the date the assignment is returned to you.
4. Show your work and/or explanation in your homework. No credit will be given to a correct answer without the work or explanation shown.

1.1 3, 8, 14, 16, 19
1.2 3, 12, 15, 19, 30
1.3 5, 24, 17, 25, 26
1.4 7, 9, 12, 15, 25
1.5 2, 6, 11, 15, 21
1.7 3, 6, 10, 31, 36
1.8 1, 6, 9, 17, 20
1.9 1, 4, 8, 12, 17
2.1 4, 6, 9, 17, 22
2.2 7, 11, 14, 32, 35
2.3 4, 8, 13, 18, 26
4.1 2, 5, 6, 12, 13
4.2 6, 10, 16, 24, 32
4.3 4, 9, 14, 15, 29
4.4 3, 7, 10, 11, 14
4.5 4, 5, 10, 13, 22
4.6 3, 5, 16, 31, 32
3.1 4, 10, 15, 27, 41
3.2 5, 11, 13, 16, 23
3.3 6, 8, 21, 24, 31
5.1 1, 5, 13, 17, 31
5.2 7, 12, 14, 24, 25
5.3 1, 4, 7, 14, 24
6.1 13, 14, 22, 25, 27
6.2 8, 10, 12, 17, 29
6.3 2, 5, 8, 11, 17
6.4 3, 10, 13, 19, 32