

41447 Math 333 Section 001
Linear Algebra
4 credits

Spring Semester 2012
Monday – Thursday
0810 - 0910
LA 721

<u>Instructor</u>	Dr. Mark D. Jacobson
<u>Office Hours</u>	Monday –Wednesday: 10:30 – 11:50 a.m. or by appointment
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<u>Phone</u>	406-657-2203
<u>Text</u>	<i>Linear Algebra with Applications</i> , 3 rd Edition, David Lay, Pearson/Addison-Wesley, New York, 2006, Bundled with MyLab and Study Guide.
<u>Catalog Description</u>	M 333, 4 credits. Prerequisite: M 273 or equivalent. Covers linear systems and matrices, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, and orthogonality. Exact topics may vary year to year.

Course Goals and Purpose

This course is intended as a first course in linear algebra for students. Upon completion of the course, students should be able to work with the concepts and computations of linear algebra. The students should also be well versed in the mathematical language needed for applying the concepts of linear algebra to numerous applications in science, engineering and applied mathematics. Our goal of this course is to present the key concepts and main ideas of linear algebra.

Students will demonstrate ability to understand quantitative measures, use quantitative skills to solve problems, and use logical skills to make judgments. Students will also demonstrate a basic understanding of subject matter; they'll demonstrate thinking, comprehension, and expression of subject matter. Students will demonstrate knowledge in different perspectives on algebra including ways of representing mathematical relationships and algebraic structures. And finally, students will demonstrate ability to identify and solve problems using methods of this discipline.

Course Outline

Chapter 1 (Sections 1 – 9): Linear Equations in Linear Algebra

Chapter 2 (Sections 1 – 5): Matrix Algebra

Chapter 3 (All Sections): Determinants

Chapter 4 (Sections 1 – 7): Vector Spaces

Chapter 5 (Sections 1 – 5): Eigenvalues and Eigenvectors

Chapter 6 (Sections 1 – 5): Orthogonality and Least Squares

Assessment

Progress by the student will be assessed primarily through written homework and online exams. The written homework is designed to serve as a medium of practice of the concepts covered in the daily class lectures while the exams are to assess the mastery of the material by the student. The purpose of all forms of assessment is to measure mastery of material as well as encourage development of problem solving and critical thinking skills.

Format for Written Homework:

- **Number and briefly state** each problem if appropriate.
- You are to use a **pencil** and write on only **one side** of the paper.
- Enter **legible, organized, bound and complete** solutions (Narratives are crucial!).

Each chapter will have a written homework and an online exam. The following weights are given:

<u>Item</u>	<u>Percentage</u>
6 Online Exams	70 %
<u>6 Written Homeworks</u>	<u>30 %</u>
Total	100 %

There is no FINAL EXAM!! No Incompletes will be given unless the requirements as per student handbook are met. ALL work must be completed no later than the DUE DATES. Work turned in after the DUE DATES will receive a 0.

IMPORTANT! You cannot make up missed exams. Therefore, if you will be out of town for sports or work or whatever and you see that a deadline is coming, you **MUST** consult with the instructor to determine if you can take the exam before you leave. You must plan your schedule; I cannot do that for you. You will be held responsible for taking your exams on or before the deadlines set for the four exams. I will accept no reasons for missed exams.

<u>Percentage</u>	<u>Grade</u>	<u>Points</u>
100 – 93 %	A	4.0
92 – 90 %	A-	3.7
89 – 87 %	B+	3.3
86 – 83 %	B	3.0
82 – 80 %	B-	2.7
79 – 77 %	C+	2.3
76 – 73 %	C	2.0
72 – 70 %	C-	1.7
69 – 67 %	D+	1.3
66 – 63 %	D	1.0
62 – 60 %	D-	0.7
Below 60%	F	0.0

Graded Internet Exams in CourseCompass (MyLab)

Registration: You will access the internet homework and exams by first registering at the following site:
<http://pearsonmylabandmastering.com/>.

Click on the **Register** button on the right-hand side.

The **Student Access Code** is contained in your bundled package.

The **Course ID** for this course is: **jacobson83205**.

The school choice is: **MONTANA STATE UNIV – BILLINGS**.

Follow the directions. Make sure you install the required software plug-ins during this process.

Note: If you have only the textbook, you can purchase a Student Access Code online as shown in the registration process for about \$70.

Note: If you have technical problems with CourseCompass call: 1-800-677-6337.

Exams: Exams will be online in Coursecompass.

Click on the **TAKE A TEST** button located on the left-hand-side to access an exam.

Gradebook: Your homework and exam grades can be viewed by clicking on the **GRADEBOOK** button, located below the **TAKE A TEST** button.

Calendar: The calendar for this course can be viewed by first clicking on the **Chapter Contents** button, located below the **STUDY PLAN** button. Next, click on the **Course Calendar** link located at the top right-hand of the page. All the important dates for the homework and exams are shown here.

Student Resources for the textbook:

http://wps.aw.com/aw_lay_linearalg_updated_3/36/9433/2414937.cw/index.html

Calculators

What you personally choose depends on your needs, finances, etc. The TI-30 X IIS is a choice. The next level would be a graphing calculator like the TI-83 Plus. This has matrix capabilities which will be useful later in the course. Other options make this useful and easy to operate. Approx \$80 - \$100. Finally, the TI-89, TI-92 or TI-200 have an easy to use equation solver, matrix capabilities, and the ability to do derivatives. Approx \$150 to \$200. All three (excluding the TI-200) are available for your use at the Academic Support Center. Just leave ID at the front desk and you can use them in the building for as long as you wish.

Web Help

For additional math help, go to the following site:
http://www.msubillings.edu/asc/algebra_helps.htm

Attendance

In a class such as this one – which is structured on sequentially learned skills – attendance is important! You are responsible for all material covered in each class – whether you are there or not. In addition, any quizzes or ‘minute papers’ that are given on a particular day will not be available to you on a later date unless alternate plans have been made ahead of time.

Incompletes

An Incomplete (grade) is given only when students have been in attendance for at least three-fourths of the semester but have been prevented by circumstances beyond their control from completing all the requirements of the course. The student must provide adequate evidence to the instructor as to the reason why they were unable to complete the requirements of the course. An Incomplete must be made up within one calendar year or the grade will revert to an F. In general, to make up an incomplete for this class, the student must retake the course and will be required to submit all material required by the new instructor of a regular student.

Plagiarism / Cheating

Neither will be tolerated in this class. Stealing others work – with or without their permission – is not acceptable for the simple reason that it blocks your learning. It will catch up with you eventually. You are expected to come out of any course with a knowledge base. If you do not have it, your success later may be in jeopardy. I cannot guarantee that I will catch all acts of dishonesty. However, for those I do catch, the first instance is a zero on that assignment and the second is an F for the course. Don't do it! You have more integrity than that. Refer also to page 134 of your student handbook.

Cell phones, et el

I expect all modes of electronic communication as well as games, etc. to be off during class time. If there is some reason that you must be available for a call, please talk to me about it.

On-campus evacuations

There will be times when you will be exiting your classroom due to evacuation drills or a real emergency. Keep two things in mind:

- Treat all instances seriously!
- **TAKE ALL PERSONAL BELONGINGS WITH YOU.** Any that you leave behind may be confiscated for several days!!

Phone numbers

Admissions and records (657) 2158

Campus police

(657) 2147

**Students with disabilities, whether physical learning, or psychological, who believe that they may need accommodations in this class, are encouraged to contact Disability Support Services as soon as possible to ensure that such accommodations are implemented in a timely fashion. Please meet with [DS] staff to verify our eligibility for any classroom accommodations and for academic assistance related to your disability. Disability Support Services is located in the Academic Support Center.