

# Math 233 Spring 2012

**Time and Place:** MWF 11:00-11:50 a.m. S013  
**Instructor:** Maria Zack, Ph.D.  
**Phone Number:** 849-2458  
**E-mail:** mzack@ptloma.edu  
**Office Number:** S222  
**Office Hours:**  
Monday 8:30-9:30 a.m.  
Tuesday 9:30-10:30 a.m. and 2-3 p.m.  
Wednesday 8:00-9:00 a.m.  
Thursday 4:00-5:00 p.m.  
Friday 9:00-9:45 a.m.

These are the hours that I will definitely be available. You can come by my office any time and if I am free I will help you (you can also call me at home if you call **before 8:45 p.m.** 760-753-7861). I keep a sign-up sheet on my office door and you can sign up for any empty time slot (there are slots other than my office hours) if you want to be sure that the time is reserved for you. If you have a question or just want to hang out, come by my office.

**Text:** *Linear Algebra and Its Applications* (fourth edition)  
by David Lay

## Content:

A computational introduction to linear algebra with applications. A study of linear equations, matrix algebra, Euclidean spaces and subspaces, vector spaces, linear transformations, eigenvalues, eigenvectors, and inner products.

## Learning Outcomes:

- Students will be able to apply their technical knowledge to solve problems.
- Students will be able to demonstrate facility with algebraic structures.
- Students will communicate effectively orally and in writing.
- Students will have an understanding of the historical development, contemporary progress and societal role of mathematics.

## Grading:

Your grade for each course is based on:

Homework Exercises	300 points
2 Exams	400 points
A comprehensive final exam	300 points

Approximate minimal points required to obtain a given grade are:

	A	B	C	D
+		(875, 900)	(775, 800)	(675, 700)
	[925, 1000]	[825, 875]	[725, 775]	[625, 675]
-	[900, 925)	[800, 825)	[700, 725)	[600, 625)

Note that scores of 599 or lower will result in an F.

**Homework:**

Homework will be assigned each day at the end of class. All homework assigned in a week will be **due in class** the next Wednesday. No late homework will be accepted except by prior arrangement or with a documented emergency. Homework assignments are posted on my office door. The object of the homework is to learn how to do the problems so I expect to see calculations on your homework using the terminology and methods of the class and not just the answer. A random selection (the same for all people) of the problems will be graded on any homework assignment.

**Exams:**

There are two in-class exams. If you do not take an exam you will receive a zero for it. Late exams may be taken only by prior arrangement or with a documented emergency. I must participate in the decision for you to miss an exam, this means that you need to phone me before missing an exam.

**Final Exam: Date and Time**

The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. Only in the case that a student is required to take three exams during the same day of finals week is an instructor authorized to change the exam date and time for that particular student. The final is cumulative and is given in class on **FRIDAY, MAY 4 FROM 10:30 – 12:30.**

**Attendance:**

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes in which a student is registered is considered essential to optimum academic achievement. Therefore, regular attendance and participation in each course are minimal requirements to be met. There are no allowed or excused absences except when absences are necessitated by certain university-sponsored activities and are approved in writing by the Provost. Whenever the number of accumulated absences in a class, for any cause, exceeds ten percent of the total number of class meetings, the faculty member has the option of filing a written report to the Vice Provost for Academic Administration which may result in de-enrollment, pending any resolution of the excessive absences between the faculty member and the student...If the date of de-enrollment is past the last date to withdraw from a class, the student will be assigned a grade of W or WF (no grade). There are no refunds for courses where a de-enrollment was processed." (see catalog for full text)

**Class Enrollment:**

It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

**Academic Accommodations:**

While all students are expected to meet the minimum academic standards for completion of this course as established by the instructor, students with disabilities may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Once the student files documentation, the Disability Resource Center will contact the student's instructors and provide written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the university in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with disabilities and guarantees all qualified students equal access to and benefits of PLNU programs and activities.

Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

**Academic Honesty:**

The Point Loma Nazarene University community holds the highest standards of honesty and integrity in all aspects of university life. Academic honesty and integrity are strong values among faculty and students alike. Any violation of the university's commitment is a serious affront to the very nature of Point Loma's mission and purpose.

Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. Such acts include plagiarism, copying of class assignments, and copying or other fraudulent behavior on examinations. For more details on PLNU's policy go to: <http://www.pointloma.edu/experience/academics/catalogs/undergraduate-catalog/point-loma-education/academic-policies>

A student who is caught cheating on any item of work will receive a zero on that item and may receive an "F" for the semester. See the PLNU Catalog for a further explanation of the PLNU procedures for academic dishonesty.

You may work with and study with other people in the class, just turn in your own work for every assignment.

	Sunday	Monday	Tuesday	Wed	Thursday	Friday	Saturday
January	1	2	3	4	5	6	7
	8	9 New Student Orientation	10 Intro and 1.1 Linear Equations	11 1.1 Linear Equations 1.2 Row Reduction/Echelon	12	13 1.2 Row Reduction and Echelon	14
	15	16 <b>Martin Luther King Jr. Day</b>	17	18 1.3 Vector Equations	19	20 NO CLASS – Reading Activity	21
	22	23 1.4 Matrix Equations	24	25 1.5 Solution Sets of Linear Systems	26	27 1.7 Linear Independence	28
	29	30 1.8 Linear Transformations <b>Spiritual</b>	31	1 1.9 Linear Transformations <b>Renewal</b>	2	3 2.1 Matrix Operations <b>Week</b>	4
February	5	6 2.2 Matrix Inverses	7	8 2.3 Invertible Matrices	9	10 2.5 Matrix Factorization	11
	12	13 2.4 Continued Exam Review	14 Study Session	15 <b>EXAM #1</b>	16	17 Go over test Determinant Project	18
	19	20 Determinant Project	21	22 Determinant Project	23	24 Chapter 3 Discussion	25
	26	27 4.1 Vector Spaces	28	29 4.2 Null and Column Spaces	1	2 4.3 Linear Independent Sets Bases	3
March	4	5 Spring	6	7 Break	8	9 Week	10
	11	12 4.4 Coordinate Systems	13	14 4.5 Dimension of Vector Spaces	15	16 4.6 Rank of Vector Spaces	17
	18	19 4.7 Change of Basis	20	21 5.1 Eigenvectors and Eigenvalues	22	23 5.2 Characteristic Equation 5.3 Diagonalization	24
	25	26 5.4 Eigenvectors and Linear Transformations	27	28 NO CLASS – 5.7 Applications	29	30 Applications Discussion	31
April	1	2 Review for Exam	3 Study Session	4 <b>EXAM #2</b>	5 Easter Recess	6	7
	8	9 Easter Recess	10	11 Go over Exam 6.1 Inner Products	12	13 6.2 Orthogonal Sets	14
	15	16 NO CLASS – Project Teams to prep 6.3	17	18 6.3 Team Presentations	19	20 NO CLASS – Project Teams to Prep 6.4	21
	22	23 6.4 Presentations	24	25 6.5 Least Squares Problems	26	27 Review	28
	29	30	1	2	3 Final Study Session	4 <b>Final Exam 10:30-12:30</b>	5