MATH 406-01: Linear Algebra III
Winter 2008

Instructor: Dr. S. Cooper
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  Office Hours: MW 9:30 am – 10:30 am, TR 12:00 pm – 1:30 pm & by appointment.
  Correspondence: The best way to reach me is via email. However, emails will only receive a reply if they include an appropriate title and the sender's full name.

Class Times & Location: MTWR 2:10 pm – 3:00 pm, Building 38 – Room 225.

Required Background: MATH 306 or consent of instructor.

Course Webpage: www.calpoly.edu/~sucooper/courses_winter08/coursedetails.html & blackboard.

Textbook: *Linear Algebra*, 4th Edition, by S. Friedberg, A. Insel and L. Spence, Pearson Prentice Hall.

Content: We will cover much of the material in Chapters 5-7 of the textbook.

Learning Objectives: Linear algebra is a very important topic. It is used extensively in both applied and theoretical mathematics. The student should learn the language and methods of linear algebra. We will focus on definitions, theorems, and some applications.

Homework: Homework questions will be assigned each lecture and will be collected once a week (except for exam weeks). Most of the exercises will be proofs. Many students find it difficult to write proofs. As such, you should start your homework several days in advance of submitting it. Some homework problems may require thinking for a long time before you can compose a final solution; this is normal and can be frustrating. The process of working through homework exercises is a critical part of mastering the material in a mathematics course. Although you can discuss the exercises with classmates and myself, please hand in solutions that are written in your words. Please come to office hours if you have questions. *No late submissions will be accepted.*

Quizzes: A quiz will be given once a week (except for exam weeks). Quizzes will be short in length (one short proof, a definition, etc.). These evaluations will be used to gauge your progress with the material.

Peer Evaluations: Now that you have some practice in writing proofs, it is important to challenge yourself to improve your techniques and style. One important exercise to foster this growth is to read a variety of mathematical arguments. Once a week you will be asked to evaluate a proof written by a fellow student. It is expected that your evaluation will be carefully formulated and constructive. Your evaluation will be graded.

Exams: There will be 2 exams given during the quarter. These exams will be part in-class and part take-home. Also, there will be a cumulative final examination. The final examination will consist of two parts: one part will be a *take-home exam* that will be distributed on the last day of classes to be submitted by Tuesday, March 18 (*no late submissions will be accepted*); the second part will be written on Friday, March 21 from 1:10 p.m. to 2:10 p.m.

Course Grades:		
	Peer Evaluations	5 %
	Homework	20 %
	Quizzes (Best 7 out of 8)	10 %
	Exams 1 & 2	20 % each
	Final Exam	25 %

Missed Quizzes and Exams: There will be no make-up quizzes for *any* reason. If you have to miss a quiz then a grade of zero will be given and this will count as your dropped quiz. A missed exam will count as zero unless alternate arrangements are made *before the test* or acceptable official documentation (such as a doctor's note) explaining the situation is presented.

Calculator Policy: No calculators or other aids will be allowed during exams. All quiz and exam questions will be designed so that they can be answered without calculators.

Academic Dishonesty: You are expected to submit only work that is your own. This will help us gauge your understanding, progress, and abilities for the material. Any dishonesty will result in a grade of F for the course.

Dates to Remember:

Thursday, January 10	Homework & Quiz 1
Thursday, January 17	Homework & Quiz 2
Monday, January 21	Martin Luther King, Jr. Birthday (No Class)
Thursday, January 24	Homework & Quiz 3
Thursday, January 31	EXAM 1
Thursday, February 7	Homework & Quiz 4
Thursday, February 14	Homework & Quiz 5
Thursday, February 21	Homework & Quiz 6
Wednesday, February 27	EXAM 2
Thursday, March 6	Homework & Quiz 7
Wednesday, March 12	Homework & Quiz 8
Thursday, March 13	Last Class
Tuesday, March 18	TAKE-HOME FINAL EXAMINATION DUE
Friday, March 21	SCHEDULED FINAL (1:10 p.m. – 2:10 p.m.; Building 38 – Room 225)

Expectations & Tips on How to be Successful in MATH 406:

∗ It will be expected that you are comfortable with the material from MATH 206, 306 & 248. You should be able to: use Gaussian elimination to solve systems of linear equations; compute inverses of matrices; compute determinants of matrices; compute eigenvalues and eigenvectors of matrices. We will not spend class time on how to do the computations from MATH 206 & 306; feel free to ask me in office hours.

* Now that you have successful in MATH 306, take this opportunity to challenge yourself to improve your proof techniques.

∗ An essential part of the learning process occurs during class. You are expected to attend classes regularly.

∗ Starting with the first class, study in-depth and regularly. You are expected to study *25 – 35 hours a week outside the classroom*. Thus, at a minimum you should be studying *2 hours for every one hour of class*.

∗ You are expected to read the material to be covered *before* the lecture, and to do the assigned exercises *before* the next class period.

∗ Be an active participant and considerate to others during class discussions.

∗ Do not rely on solution manuals! These are readily available and it is tempting to just copy the solutions. However, struggling through the exercises on your own is an important phase of the learning process.

∗ Get help as soon as you need it: ask questions in class and office hours; form a study group with your classmates; consider getting a tutor, etc.

∗ For exam preparation, practice exercises that have not been assigned. Make sure you know the definitions and statements of theorems.

∗ Relax and have fun with the course!