

M229 Fall 2007
Section 3
Engineering E205
Tu Th 1:00 - 1:50

Instructor: Chris Peterson
Office: Weber 220
Phone: 491-5153
Hours: Tu Th 2:00 - 3:00

Prerequisite: Calculus or placement. This prerequisite is advisory and not now enforced. Perhaps 95% of the course requires only basic algebra.

Text: *Basic Matrix Algebra with Algorithms and Applications* by Robert A. Liebler, Chapman & Hall/CRC, 2003, ISBN 1-58488-333-2

Goals: This course provides an introduction to matrices, linear equations and many applications. It is intended for a wide audience and has lots of computation and little theory. It is a crucial prerequisite for M369 — together they provide a strong grounding in this important mathematics.

Support: Make sure that any help you seek out is familiar with this text. Many topics in this course are not covered in other texts. The College of Natural Sciences Tutorial Hall has tutors for this course. Tutoring is free to students with a valid student ID. Go to www.natsci.colostate.edu/tutoring for their schedule

Format: M229 is presented in a traditional format but **Exams will be taken outside of class.** There are two testing locations: the PACE (Paced Algebra to Calculus electronically) Center (138 Weber) from 9 AM to 4PM or in Glover 130 from 6:30 PM - 9:00 PM with no time limit (other than the listed closing times). **TESTS MUST BE TAKEN ON THE DATES SPECIFIED** unless prior arrangements have been made.

Calculators: This course is designed to include the use of a graphing calculator because the subject is so arithmetically unforgiving. It is possible to do well in this class doing only hand computation but you must be fast and accurate. Only TI-83 (“regular” or “plus”) calculators supplied by the testing center may be used on tests.

If you have a different brand or other model, YOU NEED NOT BUY a calculator for this course. You will have the chance to work with one from time to time in class. You can also practice at the Math Resource Room in the Math Learning Center in 136a Weber. Just click on a TI-83 icon on the desktop of one of the terminals there. The TI-84 has the same command structure as the TI-83.

Homework is assigned, collected and graded weekly. Emphasis will be given to effort, completeness and neatness. **No late homework will be accepted WITHOUT PRIOR APPROVAL.** Experience has shown that careful completion and mastery of homework is fundamental when studying for tests.

Grading scheme: (100-91%) A; (88-81%) B; (78 -70%) C; (69-60%) D; (59-0%) F; Plus and minus grading will fill in the blanks.

Homework	weekly	in class	16.9%
Exam 1	September 17	9:00-4:00 Weber 138 or 6:30-9:00 Glover 130	16.6%
Exam 2	October 10	9:00-4:00 Weber 138 or 6:30-9:00 Glover 130	16.6%
Exam 3	November 12	9:00-4:00 Weber 138 or 6:30-9:00 Glover 130	16.6%
Final	December 10	9:00-4:00 Weber 138 or by appt	33.3%

AVOID DELAYS - TEST EARLY IN THE SPECIFIED PERIOD

It will be possible to take an alternate final exam **BUT BY APPOINTMENT ONLY** see your instructor or the course coordinator.

Warning: The University policy on academic honesty (see the CSU General Catalog) is enforced in this course. Possessing reference information in any form that could be helpful on an exam while taking the exam and misrepresenting someone else’s work as your own are examples of cheating. Students judged to have engaged in cheating may be assigned a reduced grade and/or referred to the Office of the Vice President for Student Affairs for additional disciplinary action.

Course Coordinator: Tim Penttila penttila@math.colostate.edu
Phone: 491-6695

Office: Weber 213
Hours M11 , F11

M 229 Fall 2007 Calendar

Aug 20 Linear systems, Solutions, Matrices Equivalence, Row operations	Oct 15 Annihilator poly. of v, Gamblers delight Recurrence relations, transfer matrices
Aug 27 Echelon forms, Elimination Free variables, General solution	Oct 22 Frobenius' thm, Looping min. poly. Min poly properties, Components
Sep 3 Vector form of general solution Geometric vectors, linear functions	Oct 29 Spectral radius, Markov Chains Leslie models, data standardization
Sep 10 Polynomial Interpolation Review	Nov 5 Correlation matrix, Component Applic. Review
Sep 17 TEST 1 (Ch 1) Complex numbers Matrix multiplication, Digraph walks	Nov 12 Test 3 (Ch 3) Composition of linear functions, Area Cofactors, basic determinant properties
Sep 24 Auxiliary matrices, Inverses Symm. projectors, resolving vectors	Nov 26 Comp. shortcuts, Smith normal form Proofs using determinant properties
Oct 1 Least squares, sample space Changing coordinates	Dec 3 Characteristic Polynomial, Review Course Evaluations
Oct 8 Test 2 (Ch 2) Review Eigenvalues, Eigenvectors	Dec 10 FINAL EXAM