Mathematics 215
Fall 2011
Course Information

Instructors:

Rob Manning, Office: Hilles 207c (610-896-1210), email:rmanning@haverford.edu

    Office Hours: M 2-3:30;T 12-2; W 1:30-3; Th 2-3:30; F 1-2

Jeff Tecosky-Feldman, Office: Hilles 207e (610-896-1199), email:jtecosky@haverford.edu

    Office Hours: MWF 3-4; Th 2-3; and by appointment

Text: *Linear Algebra, 4th ed* by Otto Bretscher (Prentice-Hall 2009). We encourage you to read relevant sections of the text before coming to class.

Description: This course serves as an introduction to abstract reasoning and mathematical proof. Beginning with systems of linear equations, we will use geometrical insights to inform general results. Linear Algebra is a prerequisite for all advanced courses in mathematics and provides excellent preparation for graduate work in the natural sciences and the quantitative social sciences. Topics include: Systems of Linear Equations, Matrices and Determinants, Linear Transformations, Abstract Vector Spaces, Bases and Dimension, Least Squares, Eigenvalues and Eigenvectors, Diagonalization and Quadratic Forms.

    This course will be demanding: homework, reading, etc. will take roughly a minimum of 6-8 hours/week outside of class.

Lectures: MWF 10:30-11:30 in Sharpless 412 (RM); MWF 2-3 in Hilles 109 (JTF).

Weekly assignments: Assignments will be posted to the course Moodle page on Fridays and are **due Friday at 5pm** in a tray outside our offices. Late homeworks will not get graded unless you have been granted a PRIOR exception.

Collaboration: You are encouraged to collaborate on weekly HW except for "Special Problems" (see below), but *your writeup of a solution must reflect your own personal understanding.* Explicitly: you may discuss a problem with others, including writing up ideas on a blackboard or on scratch paper, but *you should not use written materials from your collaboration in writing up your own solution.* The goal is to collaborate in order to develop your own understanding; if you can not write up a solution without referring to written materials from your collaboration, then you have not developed your own understanding, and in that case you should stop writing up your solution and go back to thinking about the problem (in this instance, talking to your professor about the problem would probably be smart). If collaboration takes place, it *must be acknowledged by all parties on the homework papers.* See http://www.haverford.edu/math/collaboration.html for more discussion of collaboration in math courses.

Special Problems: Most weeks, an especially challenging problem will be assigned, due 2 weeks later, with the option of submitting a draft halfway through the 2 weeks for feedback. No collaboration is allowed on Special Problems: you may only discuss them with your instructor, who will offer limited suggestions. These must be handed in to a SEPARATE tray in Hilles 207!

Discussion Sections: Students are encouraged to attend one discussion section each week, at the following times: Weds 3-4p, Thurs 10-11am, Thurs 1-2pm, Thurs 3-4pm. These discussion sessions will allow us to meet in smaller groups, to work on additional problems and examples and get questions answered.

Math Question Center: Hilles 011 is open Sundays through Thursdays, 7-9 PM, to provide a gathering place conducive to working on math assignments. Math department faculty and student assistants will be on hand for answering math questions.

Exams and Grading: There will be two midterms (each with in-class and takehome parts) on **Sept 30 and Nov 4** and a self-scheduled final exam. The course grade will be computed using the following weighting system:

    25% for each midterm

    25% for the final exam

    15% for the weekly homeworks

    10% for the special problems

Enjoyment: You are expected to enjoy the course!

Note: Students who think they may need accommodations in this course because of the impact of a disability are encouraged to meet with one of us privately early in the semester. Students should also contact Rick Webb, Coordinator, Office of Disabilities Services (rwebb@haverford.edu, 610-896-1290) to verify their eligibility for reasonable accommodations as soon as possible. Early contact will help to avoid unnecessary inconvenience and delays.