

## SPRING 2011 MATH 290 Elementary Linear Algebra

CLASS HOURS: TR 11:00 – 11:50 AM, Room 3092 Malott

INSTRUCTOR: Professor Bozenna Pasik-Duncan

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OFFICE HOURS: TR: 8:30 – 9:15 and 1:30 – 2:15 PM or by appointment

TEXTBOOK: **Text:** *Elementary Linear Algebra*, Larson, Edwards & Falvo, Houghton Mifflin Company, 6th edition

### CLASS PROCEDURES AND GRADING:

LECTURES: Members of the class are expected to attend the lectures, which will be used to explain new material, to work typical examples and to answer some questions. The course will cover material from all of the chapters.

HOMEWORK: Homework assignments will be given weekly on Thursday. Assignments will be collected at the beginning of the lectures on the following Thursday.

### EXAMINATIONS:

- EXAM I: TBA
- EXAM II/ Group Project: TBA
- FINAL: Wednesday, 18 May
  
- GRADING SYSTEM:
  
- Your grade in this course will be determined on a point system.
  
- A maximum of 500 points can be accumulated as follows:
  
- Exam I = 100 pts, Exam II / Group Project = 100 pts, Final Exam = 150 pts  
Homework (100), Quizzes, Readings, Attendance and Participation (50) = 150 pts
  
- Total = 500 points
  
- CHANGES: The instructor reserves the right to modify the schedule announced in this bulletin if the conditions arise during the semester which make such changes desirable.

## Mathematics 290 Elementary Linear Algebra

*Systems of Linear Equations, Matrices, Vector Spaces, Linear Transformations, Applications.*

**Text:** *Elementary Linear Algebra*, Larson, Edwards & Falvo, Houghton Mifflin Company, 6th edition

**Prerequisite:** MATH 122 or MATH 142 or equivalent. Not open to students with credit in MATH 590, **Credit Hours: 2**

### Chapter

1. System of linear equations, Gaussian elimination, applications (including curve fittings, network analysis, electrical circuits. etc.) Sections 1.1-1.3.

2. Matrices, operations, properties, inverses, applications (including linear regression) Sections 2.1-2.3, 2.5.

3. Determinants, properties, applications (including Cramer's rule, area, volume) Sections 3.1-3.2, 3.5.

4. Vector spaces, simple examples (including spaces of functions and polynomials), linear independence, basis, rank of a matrix, applications. Sections 4.1-4.2, 4.5-4.6.

6. Linear transformations, matrix representation, compositions, reflections, rotations, etc.. Sections 6.1, 6.3, 6.5.

7. Eigenvalues and eigenvectors, applications. Sections 7.1 and 7.4

5. Brief introduction of inner product. Least squares approximations. Sections 5.1 and 5.4

