

Math 220 Linear Algebra

PPHAC 113

M W F 10:10 a.m. – 11:20 a.m.

Spring 2009

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Office hours: Monday, Wednesday, and Friday, 11:30 a.m. to 12:30 p.m.; Thursday, 3:00 to 4:00 p.m.; and by appointment.

Course Prerequisites: This course has for prerequisite Math 171.

Textbook : *Linear Algebra: A Modern Introduction*, second edition, by David Poole, Thomson Brooks/Cole 2006

Course Goals: After successful completion of this course, you will be able to:

- identify and work with the various forms in which linear systems appear
- manipulate matrices and solve matrix equations
- infer information about linear systems from knowledge of the rank, characteristic polynomial, or determinant of the associated matrix
- identify and solve some “real-life problems” using linear algebra methods

Course Content: We will cover most of chapters 1 through 6 in the textbook and some from chapter 7, as time permits. The main topics covered are:

Vectors

Systems of Linear Equations

Matrices

Eigenvalues and Eigenvectors

Orthogonality

Vector Spaces

Homework Assignments: Daily reading and writing assignments will be given. You are expected to complete all assignments when due and to come to class prepared to answer and ask questions. Some assignments (you will know in advance which ones) will be collected and graded. For ungraded written homework assignments, you are encouraged to work with other students, but all work to be handed in for grading must be done individually. The Academic Honesty Policy guidelines for Mathematics courses, which are copied at the end of this document, are to be followed.

Graded assignments **must be turned in by 4 p.m. on the date due to be graded without penalty**. No assignment will be accepted after graded papers have been returned to the students.

Computer program: Some class time will be devoted to computer activities that use the computer program *Maple* to carry out many of the computational processes of linear algebra. Most of these activities will be started in class and completed as homework

Attendance to Mathematics Colloquia and/or other mathematical events: The Mathematics and Computer Science sponsors a Mathematics Colloquium approximately once a month. These are mathematical lectures on different subjects given by professors from Moravian or from other colleges. The schedule for the spring semester is not finalized yet. Details will be announced in class, as soon as they become available. You are required to attend at least **two** of the colloquia and write a one-page summary/reaction for each one attended. Many of these talks may use or mention a topic of linear algebra. In your short paper, you should explicitly mention any connection you found or may make between the material in the talk and the topics in this course. You are, of course, encouraged to attend every Mathematics Colloquium.

As an alternative to attendance to one colloquium talk, you may attend and write about two “Epsilon Talks”, sponsored by the student organizations MC Mathematical Society and Pi Mu Epsilon-Omicron Chapter. (Note that attendance to *one* colloquium talk can be substituted by attendance to *two* Epsilon Talks.)

In addition, you are encouraged to attend the Annual Moravian College Student Conference on Saturday, February 16. You may use this event to satisfy the requirement of attendance to colloquia. (The invited speaker lecture counts as one colloquium lecture, and each student talk as one “epsilon talk”.)

Examinations and Group Project: There will be three in class exams, one group project and one cumulative final examination. The group project will consist of a written part and an oral presentation. The written part of the group project will be due on **April 7**. Details on the group project will be given in class at least three weeks before it is due. The dates of the in-class exams are:

Friday, February 13 Friday, March 13 Wednesday, April 8

Grading: Course grade will be based on a total of 700 points as follows.

Graded homework: 100 points

Class participation (including board presentations): 45 points

Group project 100 pts

In-class exams 300 points (100 points each)

Attendance to Math Colloquia (and follow up short paper): 25 points

Final exam 130 points

Attendance: Class attendance is required. Students are responsible for all work covered in class and all assignments, even if absent from class. If a student must miss more than one class due to illness or emergency, the instructor should be notified. In-class exams must be taken at the announced time; make-up exams will be given only in case of extreme emergency or serious illness.

Help: Students are encouraged to see Dr. Sevilla during office hours or to arrange an appointment for extra help when needed.

Accommodations: Students who wish to request accommodations in this class for a disability should contact Mr. Joe Kempfer, Assistant Director of Learning Services for Disability Support, 1307 Main Street (extension 1510). Accommodations cannot be provided until authorization is received from the office of Learning Services.

Note: *This syllabus is a guideline for the course. It may be necessary to make changes during the semester. I will announce any changes in class.*

ACADEMIC HONESTY POLICY GUIDELINES

MATHEMATICS COURSES

The Mathematics and Computer Science Department supports and is governed by the *Academic Honesty Policy of Moravian College* as stated in the Moravian College Student Handbook. The following statements will help clarify the policies of members of the Mathematics faculty.

In all homework assignments that are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thoughts of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the *Academic Honesty Policy of Moravian College*. For homework that is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to explain the solutions of all assigned problems, both graded and ungraded.

All in-class or take-home tests and quizzes are to be completed by you alone without the aid of books, study sheets, or formula sheets unless specifically allowed by you instructor for a particular test.