Linear Algebra (Math 411) – Spring 2012
(Work in Progress)

INSTRUCTOR: Professors Karl Heinz Dovermann and James B Nation

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Topics and approximate time line:

1. Review and generalization of elementary topics in linear algebra (3 weeks)

2. Linear and multilinear concepts that occur in common applications of linear algebra. (4 weeks)

3. Normal forms (Jordan Normal form) and optional topics (8 weeks).

TEXT & MATERIAL: Initially any textbook on linear algebra will be fine, though not quite general enough. For the second topic we will use a variety of sources. The third topic will probably be based on Linear Algebra by Hoffman and Kunze.

OFFICE HOURS: See website

Student Learning Outcomes: A successful student will

- have an understanding of basic and applied concepts of linear algebra.
- know the principal results and constructions in the theory.
- be able to compute examples.
- understand normal forms.

Program objectives: Linear algebra is one of the basic and foundational topics in mathematics. It is applied in many areas of mathematics and in related fields. The course is intended for majors who like to get a deeper understanding of the theory and non-majors who like to understand the subject beyond an introduction.
EXAMS: There will be two midterms (the dates will be announced in class) and a final exam (see the university calendar for the date and time). Make-up exams will be given only under excruciating circumstances such as serious illness or family emergencies. Proof may be required. If you are a student athlete, or you need to travel for academic reason, then you must make arrangements in advance to take tests at an alternate time, possibly early.

HOMEWORK: We will assign homework every lecture. It is due during the next lecture. Homework should be cleanly written, and you may have to revise it before it is in an acceptable form. Your solutions should show the steps of your solution in a logical order and end with a proper formulation of the final answer. Students are encouraged to collaborate on homework, but final write-ups must be done individually.

GRADING: Your grade will be determined by the number of points earned throughout the semester. Each midterm is worth 100 points and the final 150 points. The maximal number of points you can earn on homework is 150 points. Cut-offs for letter grades will be decided at a later time. Throughout the semester you may ask me what your approximate standing is.

ABSENSES: It is expected that you attend every class. If you are absent, then you are responsible for the material covered. Arrange to copy another student’s notes and be informed of any announcements.

ACADEMIC EXPECTATIONS: Please read the statement about the academic expectations on the Mathematics Department webpage. Go to http://www.math.hawaii.edu, pick ‘Undergraduate’ and click on Academic Expectations.

ACADEMIC HONESTY: No student shall claim or submit the work of another as one’s own. No dishonesty will be tolerated.

IMPORTANT DATES: It is your responsibility to know about the important dates, such as deadlines to drop or withdraw from a course, holidays, final exam, etc.