I. Catalog Information

A. Title of Course: Finite Mathematics  
B. Course Designator: MATH 1040

C. Number of Credits: Lecture 3   Lab  
D. Control Number: 35

E. Catalog/Course description:

F. Course prerequisites:
Math 1010 College Algebra OR placement by Accuplacer OR instructor consent

G. Date Approved: Fall 1997  
Date Revised: 12/04/09

II. Course Materials (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers)

1) Textbook: Titles with "finite mathematics" are almost always suitable.
2) graphing calculator

III. Learning Goals, Outcomes, and Assessment Minimum of one goal and two learning outcomes in each competency. If your course does not meet one of the Competencies Across the Curriculum, please justify your rationale. Minimum of two assessment measures for each learning outcome. Add other goals and outcomes as needed. If this course is part of the Minnesota Transfer Curriculum (MnTC), attach the MnTC goals, outcomes, and your assessment measures to this form; if possible, use them to complete the information below.

A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information as well as core computer tools for the manipulation and presentation of information.)

1. Learning Goals:  
Goal 1. Students are able to use common computing machines for arithmetic and common finite mathematics operations.

2. Learning Outcomes and Assessments:  
Outcome a. Students should be able to evaluate arbitrary expressions.  
Assessment: Complete homework in which numerical answers are required from financial formulas.  
Assessment: Answer exams questions correctly which involve calculating probabilities.
Outcome b. Students should be able to use computing machinery for linear algebra and specialized operations.
Assessment: Program a calculator to solve a simple problem using the Simplex Method for homework.
Assessment: Use a calculator for exam problems involving Markov chains.

B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)

Mathematics courses do not directly address communication in a general setting. Communicating with correct mathematical expression, however, is fundamental.

C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)

1. Learning Goals:
   Goal 1. Solve word problems for common finite mathematics applications.

2. Learning Outcomes and Assessments:
   Outcome a. Translate word problems into mathematical equations, apply algebraic techniques to solve the equations, then provide a solution to the original problem.
   Assessment: Solve multi-step word problems in homework assignments.
   Assessment: Solve word problems on course exams.
   Outcome b. Illustrate abstract problems with diagrams.
   Assessment: Solve homework problems in conditional probability by drawing.
   Assessment: Solve exam problems with illustrations of Markov chain problems.

D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one’s own traditions and culture, knowledge of others’ traditions and cultures, and/or respect for global diversity.)

Mathematical courses do not directly address issues of culture.

Documentation for MnTC - None

IV. Course Content (Outline the major topics covered in this course.)
1. Review of set theory.
2. Elementary probability and counting.
4. Linear algebra and matrices.
5. Applications of statistics and linear algebra.
6. Linear programming theory and applications.

(revised October 2009)