

# North Hennepin Community College

## MATH 1140: Finite Mathematics

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites:

This course requires any of these five prerequisites

A score of 1 on test Exempt from taking Math placement test

A score of 36 on test Accuplacer College Level Math

MATH 0900 - Mathematical Literacy (Minimum grade: 1.67 GPA Equivalent)

MATH 0980 - Pre College Algebra (Minimum grade: 1.67 GPA Equivalent)

MATH 0970 - Bridge to College Algebra (Minimum grade: 1.67 GPA Equivalent)

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course is designed primarily for the non-science major. Several business and financial applications are covered. These applications may include systems of equations, linear programming (maximizing profit, minimizing cost), the interdependence of different sectors in an economy, and interest rates as they pertain to credit cards, short-term loans, and mortgages. Although some computer applications may be included, no prior experience is necessary. Additional topics may include: introductory statistics and probability, combinatorics (the number of ways of arranging objects), game theory, coding, and Markov chains (multi-step games/decisions).

Prerequisite: Placement into Math 902 or successful completion of Math 0900 or 0901 or 0980 or 1010 or 1031 or 1130 with grade of "C" or better.

Please Note: If you have taken a 1000 level Math Course (or higher) from another institution, and have submitted your official transcript, please contact the Records and Registration Department in order to register for this course.

**B. COURSE EFFECTIVE DATES:** 08/27/1997 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. See Course Description and Course Outcomes.

### D. LEARNING OUTCOMES (General)

1. Identify graphs and properties of functions, especially linear functions, and apply the knowledge of functions to business applications (MnTC Goal 4: a, b, d; Goal 2: a, b); NHCC ELOs 1, 2
2. Perform basic operations with matrices and use matrix methods to solve systems of linear equations (and their applications) (G4: a, b, d; G2: a, b); NHCC ELOs 1, 2
3. Solve linear programming problems using geometric and Simplex methods and interpret the results in context (G4: a, b, d; G2: a, c); NHCC ELOs 1, 2
4. Use basic counting techniques to calculate probabilities including conditional probabilities (G4: a, b, d; G2 a, c); NHCC ELOs 1, 2
5. Solve problems using Markov Chains (G4: a, b, d; G2: a, b, c, d); NHCC ELOs 1, 2
6. Use formulas and/or technology to solve problems relating to interest, compound interest, and amortization (G4: a, b, d; G2: a, b, c); NHCC ELOs 1, 2

## **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

### Goal 04 - Mathematical/Logical Reasoning

1. Illustrate historical and contemporary applications of mathematical/logical systems.
2. Explain what constitutes a valid mathematical/logical argument(proof).
3. Apply higher-order problem-solving and/or modeling strategies.

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

1. Knowledge of Human Cultures and the Physical and Natural World--Through study in the sciences, mathematics, social sciences, humanities, histories, languages, the arts, technology and professions.
2. Intellectual and Practical Skills--Including: Inquiry and analysis; Critical and creative thinking; Written and oral communication; Quantitative literacy; Information literacy; Teamwork and problem solving.