A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: *.*
Lab Hours/Week: *.*
OJT Hours/Week: *.*

Prerequisites:
This course requires any of these five prerequisites
Algebra College Level
Placement into MATH 1150
MATH 0980 - Pre College Algebra (Minimum grade: 1.67 GPA Equivalent)
MATH 0970 - Bridge to College Algebra (Minimum grade: 1.67 GPA Equivalent)
MATH 0920 - College Algebra Support

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This class prepares students for Calculus I (Math 1221) when taken in sequence with Pre-Calculus (Math 1170). Students not planning to take Calculus I may want to consider taking a different math class such as Elementary Statistics (Math 1130), Finite Math (Math 1140), or Survey of Math (Math 1010). Topics include polynomial, rational, inverse, exponential, and logarithmic functions and their applications. Additional topics include systems of non-linear equations, systems of linear equations, and matrices.

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. Find all real and complex zeros of polynomial functions (MnTC Goal 4:a; NHCC ELO 1,2)
2. Use the degree, leading coefficients, and multiplicities of zeros of a polynomial function to analyze graphs and equations (G4:a; NHCC ELOs 1,2).
3. Find the composition of two functions (G4:a; NHCC ELOs 1,2).
4. Use the equation of a circle to graph it. Be able to write the equation of a circle based on a graph or given information (G4:a; NHCC ELOs 1,2).
5. Find the inverse of a function (G4: a; NHCC ELOs 1,2).
6. Evaluate the difference quotient using function notation (G4: a; NHCC ELOs 1,2).
7. Solve exponential equations (G4: b, c; NHCC ELOs 1,2).
8. Solve logarithmic equations using properties of logarithms (G4: b, c; NHCC ELOs 1,2).
9. Solve applied problems with exponential and logarithmic functions (G4: b,d; G2: a,b,c; NHCC ELOs 1,2).
10. Identify asymptotes and intercepts of rational functions, and use them to graph (G4: a; NHCC ELOs 1,2).
11. Solve systems of non-linear equations in two variables (G4: b,c; 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. Clearly express mathematical/logical ideas in writing.
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.