

# Minnesota State College Southeast

## MATH 1220: College Algebra

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites:

This course requires either of these prerequisite categories

1. Algebra College Level

Or

2. MATH 1025 - Algebra

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course covers functions, graphs, exponents and logarithms, inequalities, application problems, matrices and determinants, sequences and series, and the binomial theorem. (Fulfills MnTC Goal 4) (Prerequisite: MATH1025 Algebra or Algebra College Level Placement ) (3 credits: 3 lecture/0 lab)

**B. COURSE EFFECTIVE DATES:** 07/20/2016 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Functions
2. Graphs of nonlinear equations
3. Exponents and logarithms
4. Algebra of matrices
5. Sequences and series
6. Binomial theorem

#### **D. LEARNING OUTCOMES (General)**

1. Solve equations with complex number solutions
2. Differentiate relations and functions
3. Define, test, and graph functions
4. Identify even and odd functions
5. Translate, reflect, and shrink or stretch graphs
6. Create and evaluate composite functions
7. Solve for maximum and minimum values of polynomial functions
8. Evaluate zeros of polynomial functions
9. Find asymptotes of rational functions
10. Define and evaluate inverse functions
11. Solve, graph, and convert exponential and logarithmic functions
12. Solve parabolic equations for vertex, focus, and directrix and graph
13. Evaluate matrices including Gaussian elimination, addition, subtraction, multiplication, inverse matrices, and determinants
14. Evaluate arithmetic and geometric series and sequences
15. Evaluate and expand binomials using the binomial theorem and Pascal's triangle

#### **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**

This course was previously MATH 2520.