

# Dakota County Technical College

## MATS 1300: College Algebra

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites:

This course requires either of these prerequisite categories

1. MATS 0600 - Intermediate Algebra

Or

2. Both of these

A score of 50 on test Accuplacer College Level Math

A score of 76 on test Accuplacer Elementary Algebra

Corequisites: MATS 1320

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

Linear, quadratic, polynomial, rational, exponential, logarithmic, and other functions are carefully analyzed, with particular emphasis on graphical transformations (shifting, reflecting, stretching and compressing). Additional topics include matrices and Gaussian elimination; solving complex equations, including those in quadratic form and those that must be solved graphically; variation problems; particle motion; optimization problems; composition and inverse functions; arithmetic and geometric sequences; properties of logarithms and exponential/logarithmic equations; exponential growth and decay.

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

Prerequisites: MATS 0600 Intermediate Algebra

**B. COURSE EFFECTIVE DATES:** 06/01/2000 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Systems of Linear Equations
2. Methods for Solving Equations and Inequalities
3. Functions and Graphing
4. Exponential and Logarithmic Functions

### D. LEARNING OUTCOMES (General)

1. Picture a graph in their mind based on an algebraic description of a function
2. Anticipate the form of a function based on its graph
3. Appreciate the connections between functions and various physical phenomena
4. Think through each step of a problem, refusing to hazard guesses or blindly follow steps at any stage
5. Thoroughly work new information into their minds through diligent reflection and practice

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

Goal 04 - Mathematical/Logical Reasoning

1. Clearly express mathematical/logical ideas in writing.
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**

None noted