MAT 123 – PRECALCULUS   7/2020
4 hrs./wk. – 4 cr.   BEGINNING FALL 2020

Catalog Description: An intensive one-semester course to prepare students for Analytic Geometry and Calculus, including absolute values; relations; functions; equations; inequalities; polynomial, rational, trigonometric, inverse trigonometric, exponential and logarithmic functions; trigonometric equations and identities; and graphs.

Prerequisite: MAT 110 (grade of "C" or better) or equivalent.

Text: Lial, Hornsby, Schneider, Daniels, Precalculus, 7th ed. (Pearson, 2021)

Prerequisite Requirement: Linear and Absolute Inequalities, Functions, Long Division, Complex Fractions, Add/Subtract Fractions, Rationalizing Denominators, Factoring Expressions with Rational Exponents, Complex Numbers, Quadratic Functions

Syllabus

Period	Text Sections	Topics
1	1.4	Quadratic Equations
2-3	1.5, 1.6	Applications, Solving Other Types of Equations
4	1.7, 2.2	Inequalities (quadratic and rational), Circles
5-6	2.3, 2.6, 2.7	Functions (increasing, decreasing and constant), Graphing Techniques of Basic Functions
7	2.8	Function Operations and Composition
8-9	3.2, 3.3, 3.4	Synthetic Division, Zeros and Graphs of Polynomial Functions
10		**Test 1**
11-12	3.5	Graphs of Rational Functions
13	4.1	Inverse Functions
14	4.2	Exponential Functions
15	4.3	Logarithmic Functions
16-17	4.4-4.5	Evaluating Logarithms; Exponential and Logarithmic Equations
18	4.6	Applications
19		Midterm Exam Review
20		**Midterm Exam**
21-24	5.1-5.3	Angles and Trigonometric Function Definitions, Angle Measure, Basic Identities, Right Triangle Definitions and Special Right Triangle Values
25	5.4	Right Triangle Applications
26-27	6.1-6.2	Radian Measure and the Unit Circle
28-29	6.3-6.6	Graphs of Trigonometric Functions
30		**Test 3**
31-33	7.1-7.4	Trigonometric Identities
34-36	7.5	Inverse Trigonometric Functions
37-39	7.6-7.7	Trigonometric Equations
40-41	8.1-8.2	Law of Sines and Cosines
42		**Test 4**
43-44		Final Exam Review
45		**Final Exam**

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at www.ccm.edu/academics/academic-policies/.

Statement of Course LEARNING OUTCOMES

- **Identify**, **solve**, and **apply** linear, quadratic, polynomial, exponential, logarithmic, and trigonometric equations

- **Solve** and **interpret** polynomial, rational, and absolute value inequalities

- **Identify**, **evaluate**, and **perform** operations on functions

- **Construct** graphs of functions, **interpret** them, and **draw** appropriate conclusions

- **Manipulate** trigonometric identities

- **Solve** triangles by the appropriate method