



MATH 107 - Precalculus

4 credits

Instructor: Tracy Chisholm

Course Description: This course covers the following topics:

- Equations and Inequalities
- Polynomial and Rational Functions
- Exponential and Logarithmic Functions
- Trigonometric Functions
- Trigonometric Identities, Inverse Functions and Equations
- Applications of Trigonometry
- Analytic Geometry

Prerequisite: MATH 103 College Algebra, placement by math placement test or instructor approval.

Course Objectives: The student will be introduced to the topics above which require certain techniques for solutions. We will develop ideas and methods for applying these techniques leading to a solution or resolution of the question. During the course the application of the graphics calculator will be emphasized.

Class Schedule: MTRF 7:45am - 8:35am

Monday	Tuesday	Wednesday	Thursday	Friday
Thatcher 2212	Thatcher 2212		Thatcher 2212	Thatcher 2212
7:40am-8:30am	7:40am-8:30am		7:40am-8:30am	7:40am-8:30am

Instructor: Tracy Chisholm

Office: Thatcher 1104, Learning Center – main floor of Thatcher Hall

Phone: (701) 228-5601

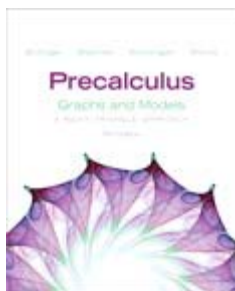
E-mail: tracy.chisholm@dakotacollege.edu

Office Hours: Students are welcome to visit me in my office at any time outside of class. I do not have designated office hours as this is the only class I teach on campus.

Tentative Course Outline:

Chapter	Topics	Timeline
Chapter 1 –Graphs, Functions & Models	Review	Week 1
Chapter 2 – More on Functions	Review	Week 1
Chapter 3 – Quadratic Functions and Equations; Inequalities	Review	Week 1
Chapter 4 – Polynomial Functions and Rational Functions	Review	Week 2
Chapter 5 – Exponential Functions and Logarithmic Functions	<ul style="list-style-type: none"> • Inverse Functions • Exponential Functions and Graphs • Logarithmic Functions and Graphs • Properties of Logarithmic Functions • Solving Exponential Equations and Logarithmic Equations • Applications and Models 	Week 2-4
Chapter 6 – The Trigonometric Functions	<ul style="list-style-type: none"> • Trigonometric Functions of Acute Angles • Applications of Right Triangles • Trigonometric Functions of Any Angle • Radians, Arc Length, and Angular Speed • Circular Functions: Graphs and Properties • Graphs of Transformed Sine Functions and Cosine Functions 	Week 5-7
Chapter 7 – Trigonometric Identities, Invers Functions, and Equations	<ul style="list-style-type: none"> • Identities: Pythagorean and Sum and Difference • Identities: Cofunction, Double-Angle, and Half-Angle • Proving Trigonometric Identities • Inverses of the Trigonometric Functions • Solving Trigonometric Equations 	Week 8-10
Chapter 8 – Applications of Trigonometry	<ul style="list-style-type: none"> • The Law of Sines • The Law of Cosines • Complex Numbers: Trigonometric Notation • Polar Coordinates and Graphs • Vectors and Applications • Vector Operations 	Week 11-13
Chapter 10 – Analytic Geometry Topics	<ul style="list-style-type: none"> • The Parabola • The Circle and the Ellipse • The Hyperbola • Nonlinear Systems of Equations and Inequalities • Rotation of Axes • Polar Equations of Conics • Parametric Equations 	Week 14-16

Required Text: *Precalculus 5th Edition* by Bittinger, Beecher, Ellenbogen & Penna with MyMathLab online learning software; Pearson publishing



MyMathLab Learning Software Website: www.mymathlab.com

Course Requirements:

The sequential nature of mathematics deems it necessary for students to attend class on a regular basis, therefore one of the course requirements is regular attendance. Grades will be based on completion of the MyMathLab assignments, quizzes and tests.



A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%

General Education Goals/Objectives:

- Goal 2: Demonstrates knowledge and application of technology.
 - Objective 2: Uses electronic resources for course related assignments and information
 - Skill 1: Selects appropriate program on the graphing calculator to solve problems
- Goal 3: Demonstrates the ability to convert, calculate, and analyze a variety of mathematical problems
 - Objective 1: Utilizes mathematical equations to solve problems
 - Skill1: Solves equations and problems using the appropriate method
 - Objective 2: Applies practical application of mathematics to everyday life
 - Skill3: Solves word problems

Relationship to Campus Theme: The student will use the graphing calculator to model application problems in nature, economics, science, psychology, etc. Communication with others will be emphasized.

Classroom Policies: Please refrain from any behavior that would disrupt the class. Cell phones can only be used in emergency situations and they must be turned to vibrate. The academic environment is an open and harassment free environment. Participation is encouraged.

Academic Integrity: The academic community is operated on the basis of honesty, integrity and fair play. It is the expectation that all students, as members of the college community, adhere to the highest levels of academic integrity. This means that:

- Students are responsible for submitting their own work. Student work must not be plagiarized.
- Students must not cooperate on oral or written examinations or work together on evaluated assignments without authorization.
- If there is evidence of cheating on an exam the student will receive an F on the respective exam.

Disabilities and Special Needs: If you have a disability for which you need accommodation, contact the Learning Center to request disability support services: phone 701-228-5477 or toll-free 1-888-918-5623.