Course Prefix/Number/Title: MATH 107 Precalculus

Number of Credits: 4

Course Description: The 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, and analytic geometry.

Pre-/Co-requisites: MATH 103 or appropriate math placement test

Course Objectives: Learners is MATH 107 will be introduced to the topics above which require certain techniques for solutions. Learners will develop ideas and methods for applying these techniques leading to a solution or resolution of the question. Learners will be able to use and apply methods of a graphing calculator in appropriate areas.

Instructor: Harmony Richman

Office: McFarland 427C (Valley City State University campus)

Office Hours: See instructor's calendar to set up an appointment

Phone: 701-200-3897 (Cell); 701-845-7198 (Office)

Email: Harmony.Richman@vcsu.edu

Lecture/Lab Schedule: MTWF 7:40 to 8:30 via IVN.

Textbook(s): None

Technology tools required: Internet access which is regular and dependable. Internet browser (Firefox or Google Chrome preference), Office 365, Adobe Acrobat Reading, Adobe Flash Player, additional free web-based software.

Course Requirements:

Students who are in the college classroom either face-to-face or online have made the conscious choice to be a part of the course. In this course, you are viewed as a participant in the learning; hence there are expectations that come with the choice you made to take this course.
1. You are expected to put, at a minimum, approximately 7 – 9 hours of preparation and study time per week into this course, which includes lesson days.
2. Actively participate regularly in class discussions through consistent, punctual, prepared and interested attendance.
3. Submit graded assignments by dates posted on the course calendar. On each assignment, you must show ALL YOUR WORK for full credit. If you do not show work, but simply state your answer, you will receive NO credit for the assignment.

4. Read assigned textbook chapters.
5. Do ungraded, independent practice exercises.
6. Submit assigned textbook problems as pdf or jpeg files into appropriate Blackboard drop boxes.
7. Complete graded quizzes/tests after each chapter(s).

Tentative Course Outline: See Table 1 Course Schedule below

General Education Competency/Learning Outcome(s) <u>OR</u> CTE Competency/Department Learning Outcome(s):

Competency/Goal 3: Demonstrates the ability to solve a variety of mathematical problems.

1. Learning Outcome 1: Utilizes mathematical skills to solve problems. Performance Indicator 1: Solves problems using an appropriate method and Performance Indicated 2: Produces graphs.

Relationship to Campus Theme: The course addresses the campus theme by exploring real world applications of mathematics in economics, behavioral, social and life science.

Classroom Policies:

1. Due dates for all assignments will be given throughout the duration of this course. Sufficient notice of due dates for assignments will be given, there is no reason why the assignments cannot be completed on time.
2. It is unfair to selectively grant extensions to some students and not others. Therefore, late assignments are not accepted. Addendums to this rule may include medical and/or prior approval from the instructor. A zero will be given for any assignment not turned in by the deadline.
3. If you are experiencing any problems (family difficulties, sick relatives, etc.) that are affecting your academic performance, you must inform me of such problems ASAP if you want me to take them into consideration. The sooner I know about a problem, the more understanding I will be. If you come to me during the last week of the semester, before grades are about to be assigned to discuss difficulties which have affected you throughout the term, you will find that I am not nearly as understanding and I can do very little to help you with your grade.
4. Your final grade is determined by dividing the total points earned by the total points possible. Points will be awarded for thoughtful posts of discussion boards, selected practice activities, reflections, and written reports. There will be no quizzes or tests within the course as there are formal and informal assessments within your assignments that fully allows me to analyze your understanding of our topics weekly.
5. Grades will be calculated using the following criteria:

A   90% - 100%
B   80% - 89%
C   70% - 79%
D   60% - 69%
F   ≤ 59%

Student Email Policy:

Dakota College at Bottineau is increasingly dependent upon email as an official form of communication. A student's campus-assigned email address will be the only one recognized by the Campus for official

mailings. The liability for missing or not acting upon important information conveyed via campus email rests with the student.

Academic Integrity:

According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles, and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred.

Disabilities or Special Needs:

Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services within the first two weeks of the semester to line up accommodations.

Title IX:

Dakota College at Bottineau (DCB) faculty are committed to helping create a safe learning environment for all students and for the College as a whole. Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if a student tells a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the College's Title IX Coordinator. Students wishing to speak to a confidential employee who does not have this reporting responsibility can find a list of resources on the DCB Title IX Webpage.

Table 1 Course Schedule
The Topics are subject to change based on learners, weather, and other components that are unable to be identified before the semester begins.

Date	Topics, Readings, Assignments, Due Dates, Deadlines
January 14th	Welcome Review 1: Graphs, Functions, and Models Review
January 15th	Review 2: More Functions Review
January 17th	Review 3: Quadratic Functions and Equations: Inequalities Review
January 20th	Holiday – Martin Luther King Jr. Day No Classes
January 21st	Review 4: Polynomial Functions and Rational Functions Review
January 22nd	5.1 Inverse Functions

Date	Topics, Readings, Assignments, Due Dates, Deadlines
January 24th	5.2 Exponential Functions and Graphs
January 27th	5.3 Logarithmic Functions and Graphs
January 28th	Mid Unit 5 Review
January 29th	5.4 Properties of Logarithmic Functions
January 31st	5.5 Solving Exponential Equations and Logarithmic Equations
February 3rd	5.6 Applications and Models: Growth and Decay; Compound Interest.
February 4th	Unit 5 Review
February 5th	Unit 5 Assessment
February 7th	6.1 Trigonometric Functions of Acute Angles
February 10th	6.1 Trigonometric Functions of Acute Angles
February 11th	6.2 Applications of Right Triangles
February 12th	6.3 Trigonometric Functions of Any Angle
February 14th	6.3 Trigonometric Functions of Any Angle
February 17th	Holiday – Presidents' Day No Classes
February 18th	Mid Unit 6 Review
February 19th	6.4 Radians, Arc Length, and Angular Speed
February 21st	6.4 Radians, Arc Length, and Angular Speed
February 24th	6.5 Circular Functions: graphs and Properties
February 25th	Unit Circle

Date	Topics, Readings, Assignments, Due Dates, Deadlines
February 26th	6.5 Circular Functions: Graphs and Properties
February 28th	6.6 Graphs of Transformed Sine Functions and Cosine Functions
March 2nd	Unit 6 Review
March 3rd	Unit 6 Assessment
March 4th	7.1 Identities: Pythagorean and Sum and Difference
March 6th	7.2 Identities: Cofunction, Double-Angle, and Half-Angle
March 9th	7.2 Identities: Cofunction, Double-Angle, and Half-Angle
March 10TH	7.3 Proving Trigonometric Identities
March 11th	7.3 Proving Trigonometric Identities
March 13th	Mid Unit 7 Review
March 16th – March 20th	Spring Break No Classes
March 23rd	7.4 Inverse of the Trigonometric Functions
March 24th	7.5 Solving Trigonometric Equations
March 25th.	Unit 7 Review
March 27th	Unit 7 Assessment
March 30th	8.1 The Law of Sines
March 31st	8.2 The Law of Cosines
April 1st	8.3 Complex Numbers: Trigonometric Notation
April 3rd	8.3 Complex Numbers: Trigonometric Notation

Date	Topics, Readings, Assignments, Due Dates, Deadlines
April 6th	8.4 Polar Coordinates and Graphs
April 7th	8.5 Vectors and Applications
April 8th	8.6 Vectors Operations
April 10th	Holiday – Good Friday No Classes
April 13th	Holiday – Easter Monday No Classes
April 14th	Unit 8 Review
April 15th	Unit 8 Assessment
April 27th	10.1 The Parabola
April 20th	10.2 The Circle and the Ellipse
April 21st	10.3 The Hyperbola
April 22nd	10.4 Nonlinear Systems of Equations and Inequalities
April 24th	Unit 10 Review
April 27th	Unit 10 Assessment
April 28th	11.1 Sequences and Series
April 29th	11.2 Arithmetic Sequences and Series
May 1st	11.3 Geometric Sequences and Series
May 4th	11.7 The Binomial Theorem
May 5th	Unit 11 Review
May 6th	Unit 11 Assessment

Date	Topics, Readings, Assignments, Due Dates, Deadlines
May 8th	Final Exam Last Day of Class