MATH 2412.021, Precalculus

Course Syllabus: Fall 2022

"Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed."

Instructor: Dr. Leah Reagan
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Office Hours:	Monday	Tuesday	Wednesday	Thursday		
	10:30 – 11:00 1:30 – 3:30	10:30 – 11:00 1:30 – 3:30	10:30 – 11:00 1:30 – 3:30	10:30 – 11:00 1:30 – 3:30		Professor checks email and TEAMS texts multiple times daily.

This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.

Course Description: This is a standard first course in functional analysis with algebra, geometry, and geometric interpretations. Topics include graphs, inverse functions, polynomial functions, rational and irrational functions, exponential and logarithmic functions, trigonometric functions, inverse trigonometric functions, Law of Sines, Law of Cosines, and analytic geometry. Additional topics such as vectors, polar coordinates and parametric equations may be included. Four hours credit.

Prerequisite(s): MATH 1314 with a grade of "C" or better

Student Learning Outcomes:

2412.1 Demonstrate and apply knowledge of properties of functions.

2412.2 Recognize and apply algebraic and transcendental functions and solve related equations.

2412.3 Apply graphing techniques to algebraic and transcendental functions.

2412.4 Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.

2412.5 Prove trigonometric identities.

2412.6 Solve right and oblique triangles.

Core Curriculum Purpose and Objectives:
Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning.
Courses in the foundation area of mathematics focus on quantitative literacy in logic, patterns, and relationships. In addition, these courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

Program Student Learning Outcomes:

Critical Thinking Skills

CT.1   Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

Communication Skills

CS.1   Students will effectively develop, interpret and express ideas through written communication.

Empirical and Quantitative Skills

EQS.1   Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form

EQS.2   Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

EQS.3   Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

Evaluation/Grading Policy:
Three major 100 point examinations will be given, and together they will be worth 45% of the final grade. If an exam is missed or failed, the highest possible make-up grade is a 70 (with instructor notification prior to the exam missed).

The average of a series of homework assignments will be worth 25% of the total grade (all homework is on MyMathLab). All homework due dates are posted on MyMathLab. Homework is due on the due date…no exceptions. Quizzes over each chapter will be worth 10% of the final grade.

A comprehensive final examination will contribute 20% to the final grade.

Tests/Exams:

3 Exams	45%	(15% each)
Final Exam	20%	
Online Assignments (MyMathLab)	25%	
Quizzes	10%	

TOTAL	100%	

"A"   90%
"B"   80%
"C"   70%
"D"   60%
"F"   Below 60%

Required Instructional Materials:

Publisher: Pearson
ISBN Number: 0-321-19991-X PEARSON / DIGITAL TEXT W/MYMATH LAB

Optional Instructional Materials: None

Minimum Technology Requirements: Students should have a computer at home that is Internet accessible. It is recommended that students have a graphing calculator. The TI-84 is preferred, but other models may be approved by the instructor.

Required Computer Literacy Skills: Students should have the ability to navigate through a website, use a chat room, post remarks to a discussion board, and email. They must also be able to navigate Blackboard to access posted materials and MyMathLab assignments.

Course Structure and Overview: This is a 16-week course where students are required to access graded activities on MyMathLab via the Blackboard Learning Management System.
Students are expected to attend class each week during regular class time, and to participate in online assignments during the same week.
Much of the work done and submitted online is in preparation for active participation in the following classroom activities – peer group discussions, whole class discussions, Precalculus activities, etc. Online activities each week include watching videos on our topic, responding to discussion prompts, responding to the comments of other students, and completing online homework in MyMathLab. Once a week attendance is mandatory and critical to your overall grade.

Communications
The college's official means of communication is via your campus email address. I will use your campus email address and TEAMS to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.

Professor Reagan will return your email and/or TEAMS text within 24 hours. She checks her email and texts several times daily.

Institutional/Course Policy:
Attendance: Students are expected to attend every class. If a student has to miss class, he/she must contact the instructor prior to missing. Class attendance is vital to being successful in this class. Also, students must be self-motivated to keep up with the due dates, turn in assignments ON TIME, and take Exams as scheduled.

Students are expected to be respectful to classmates, the Professor and themselves. Students will be warned when using a phone inappropriately. A student will be removed from class if any disruption continues.

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements
In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (http://www.ntcc.edu/) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

Eagle Assist
At Northeast Texas Community College, we understand that students often need support that extends beyond the classroom. "Eagle Assist" is the place to start when looking for that type of assistance. Our support system is here to help you succeed in both your academic and personal growth. www.ntcc.edu/eagleassist

Services provided:

- Mental Health Counseling
- Classroom Accommodations
- NTCC Care Center Food Pantry
- NTCC Care Center Hygiene Closet
- NTCC Care Center Cook Nook
- Financial Literacy
- Child Care Assistance
- Emergency Aid

Can't find what you are looking for? Send us a message at eagleassist@ntcc.edu
Mental Health Counseling Services are available to all NTCC students.
- Visit the following page to get your account activated:
www.thevirtualcaregroup.com/ntcc

*Dual credit students please email jstewart@ntcc.edu if interested.

NTCC Academic Honesty/Ethics Statement:
NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may   result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:
It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the

Request for Accommodations, please refer to the special populations page on the NTCC website.

Family Educational Rights and Privacy Act (FERPA):
The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Tentative Course Timeline (*note* instructor reserves the right to make adjustments to this timeline at any point in the term):

Chapter 1 Functions – WEEKS 1 & 2
    1.1 Functions (Optional)
    1.2 The Graph of a Function (Optional)
    1.3 Properties of Functions
    1.4 Library of Functions; Piecewise-defined Functions
    1.5 Graphing Techniques: Transformations
    1.6 Mathematical Models; Building Functions (Optional)
    1.7 Building Mathematical Models Using Variation (Optional)

Chapter 2 Linear and Quadratic Functions – WEEKS 2 & 3
    2.1 Properties of Linear functions and Linear Models
    2.2 Building Linear Models from Data (Optional)
    2.3 Quadratic Functions and Their Zeros (Optional)
    2.4 Properties of Quadratic Functions
    2.5 Inequalities Involving Quadratic Functions
    2.6 Building Quadratic Models from Verbal Descriptions and from Data (Optional)
    2.7 Complex Zeros of a Quadratic Function
    2.8 Equations and Inequalities Involving the Absolute Value Function (Optional)

Chapter 3 Polynomial and Rational Functions – WEEKS 2 & 3
    3.1 Polynomial Functions and Models
    3.2 Properties of Rational Functions
    3.3 The Graph of a Rational Function
    3.4 Polynomial and Rational Inequalities (Optional)
    3.5 The Real Zeros of a Polynomial Functions (Optional)
    3.6 Complex Zeros; Fundamental Theorem of Algebra

Chapter 4 Exponential and Logarithmic Functions – WEEK 4
    4.1 Composite Functions (Optional)
    4.2 One-to-One Functions; Inverse Functions
    4.3 Exponential Functions
    4.4 Logarithmic Functions
    4.5 Properties of Logarithms
    4.6 Logarithmic and Exponential Equations (Optional)

Chapter 5 Trigonometric Functions – WEEKS 6, 7, & 8
    5.1 Angles and Their Measure
    5.2 Right Triangle Trigonometry
    5.3 Computing the Values of Trigonometric Functions of Acute Angles
    5.4 Trigonometric Functions of any Angle
    5.5 Unit Circle Approach: Properties of the Trigonometric Functions
    5.6 Graphs of the Sine and Cosine Functions
    5.7 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions
    5.8 Phase Shift; Sinusoidal Curve Fitting (As time permits)

Chapter 6 Analytic Trigonometry – WEEKS 10, 11, & 12
    6.1 The Inverse Sine, Cosine, and Tangent Functions
    6.2 The Inverse Trigonometric Functions (Continued)
    6.3 Trigonometric Equations
    6.4 Trigonometric Identities
    6.5 Sum and Difference Formulas
    6.6 Double-angle and Half-angle Formulas
    6.7 Product-to-Sum and Sum-to-Product Formulas (Optional)

Chapter 7 Applications of Trigonometric Functions – WEEKS 13, 14
    7.1 Applications Involving Right Triangles
    7.2 The Law of Sines
    7.3 The Law of Cosines
    7.4 Area of a Triangle (Optional)
    7.5 Simple Harmonic Motion; Damped Motion; Combining Waves (Optional)

Chapter 8 Polar Coordinates; Vectors (if time permits)
    8.1 Polar Coordinates
    8.2 Polar Equations and Graphs
    8.4 Vectors

Chapter 9 Analytic Geometry (if time permits)
    9.1 Conics
    9.2 The Parabola
    9.3 The Ellipse
    9.4 The Hyperbola
    9.7 Plane Curves and Parametric Equations