



MATH 2312.045 DC - Precalculus F2F

Course Syllabus: Spring 2021

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

Instructor: Olivia Juarez

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Office	Monday	Tuesday	Wednesday	Thursday	Friday	Online
Hours	7:30-7:55 AM 3:30 – 4:00 PM	7:30-7:55 AM 3:30 – 4:00 PM	7:30-7:55 AM 3:30 – 4:00 PM	7:30-7:55 AM 3:30 – 4:00 PM	7:30-7:55 AM	By appointment

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 the straight line, conics, translations, rotations, parametric equations, vectors, polar coordinates, and some curve sketching. Three hours credit.

Prerequisite(s): MATH 1316 with a grade of “C” or better

Student Learning Outcomes:

2312.1 Demonstrate an understanding and knowledge of the properties of functions.

2312.2 Recognize and apply algebraic and transcendental functions to solve related equations both algebraically and graphically.

2312.3 Identify intervals of increasing, decreasing, or constant; estimate relative maxima and minima.

2312.4 Sketch algebraic curves with vertical, horizontal, and slant asymptotes and apply these graphs to ideas of continuity.

2312.5 Determine the standard equation of a conic with given conditions and solve applied problems involving a conic.

2312.6 Solve applied problems with parametric forms, polar coordinates, vectors, and modeling.

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:

Tests/Exams 60%

Daily/Homework 20%

Final Exam 20%

Daily work will be submitted in myMathLab and test will be taken during class on paper format. There will be no exemptions from the college final.

“A” 90-100

“B” 80-89

“C” 70-79

“D” 60-69

“F” below 60

Required Instructional Materials:

Sullivan/Sullivan, Precalculus Concepts through Functions – A Right Triangle Approach to Trigonometry, 4th Edition, 2010 with MyLabMath

Publisher: Pearson, Boston, MA

ISBN Number: 13:978-0321645081

Optional Instructional Materials: printed copy of Sullivan/Sullivan, Precalculus Concepts through Functions – A Right Triangle Approach to Trigonometry, 2nd Edition

Minimum Technology Requirements: laptop or computer for online homework, graphing calculator

Required Computer Literacy Skills: none

Course Structure and Overview: This is a 16-week embedded dual credit course designed for students who are concurrently enrolled in both a high school precalculus class and the college-level class. The course is managed with information and activities that are posted on the Blackboard Learning Management System. A typical class involves general participation by all students in discussions regarding mathematical principles and procedures being studied. Students are required to complete online homework in addition to in-class quizzes, projects, and exams. It is very important students keep up with course materials and assignments since this is a college-level course. Students are expected to complete all assignments by due dates.

Communications: The college's official means of communication is via your campus email address. I will use your campus email address, Mt Vernon email address, Blackboard, Google Classroom and MyMathLab 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.

Institutional/Course Policy: This is a dual credit class held on the Mt Vernon campus. Students are required to follow the attendance and dress code as well as all other rules and acceptable use policies stated in the MVHS student code of conduct. Students are expected to behave as responsible college students; therefore, no academic information about a student can be given to another individual or parents without the expressed written consent of the student.

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.

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):

Course Outline – All daily assignment due dates are posted in myMathLab and test are due at the end of that class period.

Jan4	School Holiday		Mar15	Spring Break
Jan5	School Holiday		Mar16	Spring Break
Jan6	Staff Development		Mar17	Spring Break
Jan7	8.4 Vectors		Mar18	Spring Break
Jan8	8.5 The Dot Product		Mar19	Spring Break
Jan11	8.6 Vectors in Space		Mar22	4.1 Composite Functions
Jan12	8.7 The Cross Product		Mar23	4.1 Composite Functions
Jan13	Review		Mar24	4.2 One to One Functions, Inverse Functions
Jan14	Vector Exam		Mar25	4.2 One to One Functions, Inverse Functions
Jan15	1.1 Functions 2312.1		Mar26	4.3 Exponential Functions
Jan18	School Holiday		Mar29	4.3 Exponential Functions
Jan19	1.2 The Graph of a Function 2312.0		Mar30	4.4 Logarithmic Functions
Jan20	1.3 Properties of Functions 2312.2		Mar31	4.4 Logarithmic Functions

Jan21	1.4 Library of Functions 2312.1		Apr1	4.5 Properties of Logarithmic Functions
Jan22	1.5 Graphing Techniques and Transformations 2312.1		Apr2	Bad Weather Day
Jan25	1.6 Mathematical Models; Building Functions 2312.1		Apr5	Possible Bad Weather Day
Jan26	1.6 Mathematical Models; Building Functions 2312.1		Apr6	4.5 Properties of Logarithmic Functions
Jan27	1.7 Building Mathematical Models Using Variation 2312.1		Apr7	4.5 Properties of Logarithmic Functions
Jan28	1.7 Building Mathematical Models Using Variation 2312.1		Apr8	4.6 Logarithmic and Exponential Equations
Jan29	Chapter 1 Review		Apr9	4.6 Logarithmic and Exponential Equations
				end of six weeks
Feb1	Chapter 1 Exam		Apr12	4.8 Growth and Decay Functions
Feb2	2.1 Properties of Linear Functions and Linear Models 2312.1		Apr13	4.8 Growth and Decay Functions
Feb3	2.1 Properties of Linear Functions and Linear Models 2312.1		Apr14	4.9 Building Logarithmic and Logistic Functions
Feb4	2.2 Building Linear Models from Data 2312.1		Apr15	4.9 Building Logarithmic and Logistic Functions
Feb5	2.3 Quadratic Functions and Their Zeros		Apr16	Chapter 4 Review
Feb8	2.4 Properties of Quadratic Functions		Apr19	Test 6
Feb9	2.4 Properties of Quadratic Functions		Apr20	9.2 Parabolas
Feb10	Review 2.1-2.4		Apr21	9.2 Parabolas
Feb11	Test 3		Apr22	9.3 Ellipse
Feb12	2.5 Inequalities Involving Quadratic Functions		Apr23	9.3 Ellipse
Feb15	School Holiday		Apr26	9.4 Hyperbolas
Feb16	2.5 Inequalities Involving Quadratic Functions		Apr27	9.4 Hyperbolas
Feb17	2.6 Building Quadratic Models from Verbal Descriptions and Data		Apr28	9.5 Rotation of Axes
Feb18	2.6 Building Quadratic Models from Verbal Descriptions and Data		Apr29	9.5 Rotation of Axes
Feb19	2.7 Complex Zeros of a Quadratic Function		Apr30	9.5 Rotation of Axes
	end of six weeks			
Feb22	2.7 Complex Zeros of a Quadratic Function		May3	9.7 Plane Curves and Parametric Equation
Feb23	2.8 Equations and Inequalities Involving the Absolute Value Function		May4	9.7 Plane Curves and Parametric Equation
Feb24	2.8 Equations and Inequalities Involving the Absolute Value Function		May5	Chapter 9 Review
Feb25	Review 2.5-2.8		May6	Test 7
Feb26	Test 4		May7	final exams

Mar1	3.1 Polynomial Functions		May10	final exams
Mar2	3.1 Polynomial Functions		May11	final exams
Mar3	3.2 Properties of Rational Functions		May12	final exams
Mar4	3.2 Properties of Rational Functions		May13	final exams
Mar5	3.3 The Graphs of a Rational Funtion		May14	
Mar8	3.5 The Real Zeros of a Function			
Mar9	3.6 Complex Zeros; Fundamental Theorem of Algebra			
Mar10	3.6 Complex Zeros; Fundamental Theorem of Algebra			
Mar11	Chapter 3 Review			
Mar12	Test 5			