



## Calculus I – Math 2413.001

### Course Syllabus: Fall 2019

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“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

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| Office Hours | Monday                      | Tuesday     | Wednesday                   | Thursday    | Friday         | Online    |
|--------------|-----------------------------|-------------|-----------------------------|-------------|----------------|-----------|
|              | 9:30 – 11:00<br>1:30 – 5:00 | 1:30 – 5:00 | 9:30 – 11:00<br>1:30 – 5:00 | 1:30 – 5:00 | By appointment | As needed |

*The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.*

**Catalog Course Description (include prerequisites):** Four credit hours. Calculus I is a standard first course in the calculus. Topics include differentiation of algebraic and trigonometric functions, differentiation formulas, applications of the derivative, mean value theorem, maxima/minima, point of inflection, curve sketching, antiderivatives, definite and indefinite integrals, upper and lower sums, and the fundamental theorem. Prerequisite: MATH 2412 (Precalculus) or its equivalent.

To access your course materials, click on the Course Materials Access link on Blackboard. For additional information on Exclusive Access, please access the textbook information provided on the portal (student tab, click on Academics then Textbooks.)

#### **Required Textbook(s):**

Larson/Edwards, Calculus, 11th Edition, 2017

**Publisher:** Brooks/Cole, Belmont, CA

**ISBN Number:** ISBN-13: 978-133-760-4741 (Loose-leaf textbook with WebAssign access code)  
ISBN-13: 978-133-760-4758 (Hard-bound textbook with WebAssign access code)

Note: The NTCC Bookstore link is at [www.ntcc.edu](http://www.ntcc.edu)

#### **Recommended Reading(s):**

None

## **Student Learning Outcomes:**

Upon successful completion of this course, students will:

- 2413.1** Determine the limit of a function graphically, numerically, and analytically.
- 2413.2** Calculate derivatives using the definition of the derivative as the limit of a difference quotient.
- 2413.3** Calculate derivatives of algebraic, trigonometric, and implicit functions.
- 2413.4** Apply methods of calculus to graph polynomial, rational, and trigonometric functions.
- 2413.5** Problem-solve a broad base of application problems involving differentiation including but not limited to Rolle's Theorem and the Mean Value Theorem.
- 2413.6** Calculate and apply antiderivatives of algebraic and trigonometric functions.
- 2413.7** Understand the relationship between antiderivative and integral by way of the Fundamental Theorem of Calculus.

## **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.

## **College 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.

**SCANS Skills:**

N/A

**Lectures and Discussions:**

- I. Limits
- II. Differentiation
- III. Extrema and Other Applications of Differentiation
- IV. Curve Sketching
- V. Antiderivatives
- V. The Fundamental Theorem of Calculus

**Evaluation/Grading Policy:**

|                      |     |
|----------------------|-----|
| Assignments/Quizzes* | 25% |
| Exam 1               | 25% |
| Exam 2               | 25% |
| Final Exam           | 25% |

**Minimum requirements for Final Course Grade**

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

\*\*The daily grade is an average grade of quizzes, homework assignments, and Maple projects.

**In-class quizzes must be taken according to class schedule.**

The lowest in-class quiz grade will be dropped. The highest in-class quiz grade will be doubled.

Online assignments are graded homework exercises posted on the website WebAssign.

Homework problems can each be reworked up to the prescribed number of times for each assignment.

The last grade earned for each homework assignment will be posted for the final grade.

**There are no make-up assignments.**

The overall course average will be calculated both 1) with and 2) without WebAssign grades.

The higher course average will be used to determine the student's final grade.

### Evaluation – Honors Credit

To be eligible for honors credit, the student must have at least an 85% exam average for the semester. In addition, two of the following assignments must be completed to the satisfaction of the instructor:

- I. Oral presentation with prepared materials  
Topic must be approved by instructor:  
Unit Circle, Derivative, or Applications of the Derivative
- II. Author Maple Project with approved topic
- III. Brief research paper 2 – 3 pages  
Topic must be approved by  
instructor:  
Mathematician with significant contribution to the Calculus
- IV. Essay with Maple software – Topic TBA

Each assignment is worth 25 points. The student's grade for honors credit will be based on 110% of the requirement for the regular credit.

### Other Course Requirements

Required for this course:

- 1) graphing calculator
- 2) access to Maple software

### Student Responsibilities/Expectations:

Regular and punctual attendance at all scheduled classes is expected. Attendance is necessary for successful completion of course work. There is no make-up on in-class quizzes and WebAssign assignments.

### NTCC Academic Honesty Statement:

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

### Academic Ethics

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

### 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 Shannin Garrett, Academic Advisor/Coordinator of Special Populations located in the College Connection. She can be reached at 903-434-8218. For more information and to obtain a copy of the Request for Accommodations, please refer to the [NTCC website - Special Populations](#).

### 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.

**6 Drop Rule:** "Students who enrolled in Texas public institutions of higher education as first-time college students during the Fall 2007 term or later are subject to section 51.907 of the Texas Education Code, which states that an institution of higher education may not permit a student to drop (withdraw with a grade of "W") from more than six courses. This six-course limit includes courses that a transfer student has previously dropped at other Texas public institutions of higher education if they fall under the law. Students should be sure they fully understand this drop limit before they drop a course. Please visit the admissions office or counseling/advising center for additional information and assistance."

**Other Course Policies:**

There will be no cell phone usage in the classroom. Students will be warned if caught using a phone during class. A student will be removed from class if the disruption continues.

The college's official means of communication is via your campus email address. I will use your campus email address and Blackboard 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.

**Campus Safety:** Northeast Texas Community College (NTCC) is committed to maintaining the safety of the students, faculty, staff, and guests while visiting any of our campuses. See NTCC's website for details and to receive emergency notifications automatically by phone. In the event of an emergency contact NTCC Police at 903-434-8127.