



## Calculus II – MATH 2414.001

Course Syllabus: Spring 2020

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

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	11:00 – 12:00 1:00 – 4:00	1:00 – 4:00	11:00 – 12:00 1:00 – 4:00	1:00 – 4:00	By appointment	As needed

***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:

Four hours of class each week. Calculus II is a standard second course in the calculus. Topics include differentiation and integration of exponential, logarithmic and inverse trigonometric functions, integration of the trigonometric functions, various techniques of integration including u-substitution, parts, partial fractions, trigonometric substitution, rationalizing substitutions, approximate integration, applications of the integral for areas and volumes, surface area, arc length, infinite limits, indeterminate forms, L'Hopital's rule, improper integrals, sequences, series, convergence and divergence tests.

**Prerequisite(s):** MATH 2413 with a grade of “C” or better

### Student Learning Outcomes:

Upon successful completion of this course, students will

- 2414.1** Determine various integrals and derivatives of algebraic, logarithmic, exponential, trigonometric, and inverse trigonometric functions.
- 2414.2** Employ numerous techniques of integration including u-substitution, integration by parts, integration by partial fractions, trigonometric substitution, and rationalizing substitutions.
- 2414.3** Utilize integrals to find area, volume, surface area, and arc length.
- 2414.4** Apply L'Hopital's Rule to indeterminate forms and infinite limits.
- 2414.5** Solve improper integrals.
- 2414.6** Determine convergence and divergence of sequences and series including the domain of a power series.

**2414.7** Find, differentiate, and integrate power series representative of functions, including Taylor and Maclaurin series.

### **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.

### **Evaluation/Grading Policy:**

Assignments/Quizzes*	20%
Exam 1	20%
Exam 2	20%
Exam 3	20%
Final Exam	20%

#### Minimum requirements for Final Course Grade:

"A"	90%	*The daily grade is an average grade of quizzes, homework assignments, and Maple projects.
"B"	80%	* In-class quizzes must be taken according to class schedule.
"C"	70%	* The lowest in-class quiz grade will be dropped. The highest in-class quiz grade will be doubled.
"D"	60%	* Online assignments are graded homework exercises posted on the website WebAssign.
"F"	Below 60%	* Homework problems can each be reworked up to three times.
		* The last grade earned for each homework assignment will be posted for the final grade.

**Required Instructional Materials:**

Larson/Edwards, Calculus, 11th Edition, 2018  
Loose-leaf textbook with WebAssign access code

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

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

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

**Optional Instructional Materials:** None

**Minimum Technology Requirements:**

Graphing Calculator is required. TI-84 is preferred, but other models may be approved by the instructor.

**Required Computer Literacy Skills:**

- 1) Communicate via email;
- 2) Saving and reloading saved files;
- 3) Navigate Blackboard to access posted materials and WebAssign assignments.

**Course Structure and Overview:**

This is a 16-week face-to-face course where students are required to access graded activities on WebAssign via the Blackboard Learning Management System. A typical class involves general participation by all students in discussions involving mathematical principles and the algorithms to apply these principles. Students are required to complete online homework in addition to weekly in-class quizzes and over the course of the semester, three exams and a final exam. It is very important students keep up with course materials and assignments since this is a very fast-paced, intense course. Students are expected to watch posted instructional videos, read course textbook, and complete online assignments located in the Learning Management System, Blackboard by due dates.

**Communications:**

Emails will be responded to within 24 hours during the week and 48 hours on the weekend.

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

**Institutional/Course Policy:**

No late work will be accepted. It is the student's responsibility to check Blackboard for important information/announcements regarding the course. Students should be working on course material via Blackboard every week. Do not wait until the last minute to complete and submit assignments in case of technology issues.

**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.

**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 special population 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 Schedule: (Subject to Change)**

<u><b>Weeks</b></u>	<u><b>Topics</b></u>	<u><b>Assignments</b></u>	<u><b>Due Dates</b></u> (Due by 11:59pm CST)
Week 1: 1/21/20 – 1/26/20			
	Ch. 4 Integration: Sections 4.4 – 4.5		
Week 2: 1/27/20 – 2/2/20	Ch. 5 Logarithmic, Exponential, and Other Transcendental Functions: Section 5.1	Weekly quiz 1/30/2020 WebAssign online assignment	1/30/2020
Week 3: 2/3/20 – 2/9/20	Ch. 5 Logarithmic, Exponential, and Other Transcendental Functions: Sections 5.2 – 5.3	Weekly quiz 2/6/2020 WebAssign online assignment	2/6/2020
Week 4: 2/10/20 – 2/16/20	Ch. 5 Logarithmic, Exponential, and Other Transcendental Functions: Sections 5.4	Weekly quiz 2/13/2020 WebAssign online assignment	2/13/2020
Week 5: 2/17/20 – 2/23/23	Ch. 5 Logarithmic, Exponential, and Other Transcendental Functions: Section 5.5 / Exam 3	Exam 3 - (4.4 – 5.4) 2/20/2020 WebAssign online assignment	2/20/2020

Week 6: 2/24/20 – 3/1/20	Ch. 5 Logarithmic, Exponential, and Other Transcendental Functions: Sections 5.6 – 5.7	Weekly quiz 2/27/2020 WebAssign online assignment	2/27/2020
Week 7: 3/2/20 – 3/8/20	Ch. 5 Logarithmic, Exponential, and Other Transcendental Functions: Section 5.8  Ch. 7 Applications of Integration Section 7.1	Weekly quiz 3/5/2020 WebAssign online assignment	3/5/2020
Week 8: 3/9/20 – 3/15/20	Ch. 7 Applications of Integration Section 7.2  Ch. 8 Integration Techniques and Improper Integrals Sections 8.1, 8.2	Weekly quiz 3/12/2020 WebAssign online assignment	3/12/2020

<b>3/16/20 – 3/22/20</b>	<b>Happy Spring Break!</b>		
Week 9: 3/23/20 – 3/29/20	Ch. 8 Integration Techniques and Improper Integrals Section 8.3	Weekly quiz 3/26/2020 WebAssign online assignment	3/26/2020
Week 10: 3/30/20 – 4/5/20	Ch. 8 Integration Techniques and Improper Integrals Sections 8.4 / 8.8	Weekly quiz 4/2/2020 WebAssign online assignment	4/2/2020
Week 11: 4/6/20 – 4/12/20	Exam 3: 5.6 – 7.2; 8.1 – 8.4; 8.8	Exam 3 WebAssign online assignment	4/9/2020
Week 12: 4/13/20 – 4/19/20	Ch. 7 Applications of Integration Section 7.3  Ch. 9 Infinite Series Sections 9.1/9.2	Weekly quiz 4/16/2020 WebAssign online assignment	4/16/2020
Week 13: 4/20/20 – 4/26/20	Ch. 9 Infinite Series Sections 9.3/9.4	Weekly quiz 4/23/2020 WebAssign online assignment	4/23/2020
Week 14: 4/27/20 – 5/3/20	Ch. 9 Infinite Series Sections 9.5/9.6	Weekly quiz 4/30/2020 WebAssign online assignment	4/30/2020
Week 15: 5/4/20 – 5/10/20	Ch. 9 Infinite Series Sections 9.7/9.8  Exam 3: 7.3, 9.1 – 9.6	Weekly quiz 5/7/2020 WebAssign online assignment	5/7/2020
Week 16: 5/11/20 – 5/21/20	Final Exam: Comprehensive	WebAssign online assignment	5/12/2020