

MA 241-003: Calculus II for Engineering
Fall 2021
MWF 10:40 - 11:30 AM ET, Park Shops 210

Instructor: Ella Pavlechko
Email: epavlec@ncsu.edu
Office Hours: (Held over Zoom) Mon & Fri 12:00-1:30 PM

Recitation Leaders: Erin Bednarek and Kamala Dadashova
Office Hours: TBD

Recitations: A (8:30-9:20 ET with Erin): Withers Hall 160
B (9:35-10:25 ET with Kamala): SAS Hall 2106
C (4:30-5:20 ET with Erin): Poe Hall 218
D (4:30-5:20 ET with Kamala): Broughton Hall 3216

Moodle page/Course Webpage: <https://wolfware.ncsu.edu/>

Homework: <https://www.webassign.net/>

Catalog Description:

Prerequisite of C- or better in MA 141 or placements via AP or IB exams. Mastery of algebra, trigonometry, and derivatives is essential for success in MA 241.

Second of three semesters in a calculus sequence for science and engineering majors. Techniques and applications of integration, elementary differential equations, sequences, series, power series, and Taylor's Theorem. Use of computational tools.

Grade Calculation:

Homework	15 %
4 Term Tests	60 %
Final Exam	25 %

If you have 4 or fewer unexcused absences during the semester (this includes lecture and recitation) and complete all Tests, your lowest Test grade will be replaced with your Final Exam grade (if your Final Exam grade is higher).

Grading Scale: The final grade will be assigned using the plus/minus grading system

A+: 97-100	A: 93-96.99	A-: 90-92.99
B+: 87-89.99	B: 83-86.99	B-: 80-82.99
C+: 77-79.99	C: 73-76.99	C-: 70-72.99
D+: 67-69.99	D: 63-66.99	D-: 60-62.99

This policy is *strict* - I will not be rounding grades for individual students.

Homework: Homework assignments will be completed through WebAssign. On the first day of classes you will be able to log in, add yourself to the roster, and pay for access. Further instructions can be found [here](#). To add yourself to the roster you will need the **class key for this section of this course**:

ncsu 5418 4351

You have the option to purchase access for this class, \$77.95 (referred to as ‘per class’ or ‘homework only’ price in some places) or Cengage Unlimited, \$119.99 (recommended if enrolled in multiple classes using WebAssign). Access can be purchased online (recommended) or with a physical access code from the University bookstore. You will be allowed to use WebAssign for the first two weeks of class without paying, but you will be denied access to assignments if payment is not made by the end of the trial period. You typically have 5 submissions for each question. Usually assignments will be due every Friday at 5PM, but I recommend working on the problems a little bit every day. You are welcome to work together on assignments, but copying someone else's answers is not allowed.

Homework Extensions: Students can request an extension on any assignment through WebAssign. You may take one extension per homework assignment during the 5 day period after the assignment is originally due. An extension will last for 24 hours or until the assignment is exactly 5 days past due (whichever comes first). You will still get full credit for any part of the assignment done before the original due date, but you will incur a -25% penalty for any work completed during the extension period.

Textbook: Calculus II for Scientists and Engineers; by Franke, Griggs and Norris. The pdf of the textbook can be found in the “Resources” tab of Webassign. The homework in Webassign correlates to the exercises in this textbook.

Lectures: Lectures will be held in person during our scheduled class time (MWF 10:40-11:30 AM). I have provided an approximate pacing guide for the semester (below), which may be adjusted as needed.

Recitations: Recitations will be held in person every Tuesday and Thursday. This will be our time to review previously covered content/examples and occasionally learn new material; so by coming to recitation I assume you are caught up on lectures from the previous days.

Attendance: Attendance will be recorded daily in both lecture and recitation. You are expected to arrive on time to class. Any student who is not an active class participant the full class period (e.g., doing other work, socializing, sleeping, text messaging, leaving early) is recorded as an unexcused absence. You may check your attendance record on the course’s Moodle page. If you miss class or are late, you are responsible for all material covered and assignments due. If you are unable to attend a Lecture, they will be recorded and posted to the course Panopto page, which can be found on the Moodle page.

Term Tests: There are 4 scheduled tests during the semester (see schedule for dates). **NO CALCULATORS** are allowed on tests. Each student is to turn in 5 blue "Examination" booklets by the first exam. There should be 4 small and 1 large Blue Book. **Do NOT write anything on the Blue Books.** They may be purchased at the bookstore. Students who fail to do so will lose 5 points on each exam until the Blue Books are handed in. Students who take their tests with DRO don't need to do this.

Final Exam: The Final Exam is mandatory and cumulative. The Exam will be 2.5 hours long on **Friday, December 3rd from 8:30-11:00 AM**. The only way to take the final exam at another time is to request a change through the Department of Registration and Records (1000 Harris Hall) or through MyPack Portal.

Make-up Test Policy: All anticipated absences must be excused in advance of the test date; the student must provide proper documentation, and a make-up test scheduled in advance of the absence. Excused emergency absences must provide documentation verified by the proper authorities in order to schedule a make-up Exam.

Excused anticipated absences include: University duties or trips (certified by an appropriate faculty or staff member), required court attendance (certified by the Clerk of Court), religious observances (certified by the Department of Student Development: 515-2441).

Excused absences include: illness (certified by an attending physician), or family emergencies (certified by the Department of Student Development: 515-2441). COVID-19-related absences will be considered excused; documentation need only involve communication with the Instructor.

Corrections to grading: If you feel that an error was made in the grading of a test, present and explain the error in an email to the Instructor/TA's within 1 week after the test is returned. Grade changes will not occur outside of this timeframe.

Academic Integrity: I assume that anything turned in with your name on it is your own work. Each time you submit a Test, Homework, or Quiz, you affirm the honor pledge. "I have neither received nor given unauthorized aid on this assignment." The minimum penalty for cheating is a grade of zero on the assignment; violators will be reported to the Academic Integrity Review Board, which can impose additional sanctions. The code of student conduct can be found at <http://studentconduct.dasa.ncsu.edu/code/>

Course Expectations Related to COVID-19:

- **Testing Positive:** If you test positive for COVID-19, or are told by a healthcare provider that you are presumed positive for the virus, you will need to follow university guidelines (<https://healthypack.dasa.ncsu.edu/coronavirus/>). COVID-19-related absences will be considered excused; documentation need only involve communication with the Instructor. However, you will be expected to develop a plan to keep up with your coursework during any such absences.
- **Technology Requirements:** This course may require particular technologies to complete coursework. If you need access to additional technological support, please contact the Libraries' Technology Lending Service: ([Technology Lending](#)).
- **Electronically Hosted Components:** Please be advised this course is being recorded for current and potential future educational purposes. By your continued participation in this recorded course, you are providing your permission to be recorded.

Academic Considerations related to COVID-19: If you need to make a request for an academic consideration related to COVID-19, such as a discussion about possible options for remote learning, please talk with the Instructor for the appropriate process to make a COVID-19 request (a university-level form can be found [here](#)).

Disability Services: Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Resource Office: <https://dro.dasa.ncsu.edu/enrolled-students/>

Non-discrimination Policy: NC State prohibits discrimination, harassment, and retaliation that are based upon a person's race, color, religion, sex, national origin, age, disability, gender identity, sexual orientation, or veteran status. If you feel that you have been the subject of prohibited discrimination, harassment, or retaliation, you should contact the Office for Institutional Equity and Diversity (OIED) at 919-515-3148.

NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <http://policies.ncsu.edu/policy/pol-04-25-05> or <http://oied.ncsu.edu/divweb>

Academic Resources

- Math Multimedia Center - no appointment needed - email mathtutoring@ncsu.edu to get help with math or to schedule a Zoom session.
- Math Tutors for Hire - <https://math.sciences.ncsu.edu/tutors-for-hire/>
- University Tutorial Center - <https://tutorial.dasa.ncsu.edu>
- Office Hours & Email

Health and Well-Being Resources

These are difficult times, and academic and personal stress are natural results. Everyone is encouraged to [take care of themselves](#) and their peers. If you need additional support, there are many resources on campus to help you:

- Counseling Center ([NCSU Counseling Center](#))
- Health Center ([Health Services | Student](#))
- If the personal behavior of a classmate concerns or worries you, either for the classmate's well-being or yours, we encourage you to report this behavior to the NC State CARES team: ([Share a Concern](#)).
- If you or someone you know are experiencing food, housing or financial insecurity, please see the Pack Essentials Program ([Pack Essentials](#)).
- NC State Protect the Pack Resources for Students: [Resources for Students | Protect the Pack](#)

Technology Resources

- Keep Learning: [Keep Learning](#)
- NC State Keep Learning, tips for students opting to take courses remotely: [Keep Learning Tips for Remote Learning](#)
- Introduction to Zoom for students: <https://youtu.be/5LbPzzPbYEW>
- Learning with Moodle, a student's guide to using Moodle: <https://moodle-projects.wolfware.ncsu.edu/course/view.php?id=226>
- NC State Libraries [Technology Lending Program](#)

Schedule: The following is the approximate pacing guide for the course

Week	Day	Date	Lesson Type	Section(s) Covered
1	Mon	Aug 16	Lecture 1	Syllabus, 0.1, 0.2
	Tues	Aug 17		Cancelled
	Wed	Aug 18	Lecture 2	0.3, 0.4, 0.5, 0.6
	Thurs	Aug 19	Problem Session 1	Calc 1 Review
	Fri	Aug 20	Lecture 3	1.1: Arclength
2	Mon	Aug 23	Lecture 4	1.2: Average value
	Tues	Aug 24	Problem Session 2	1.1, 1.2
	Wed	Aug 25	Lecture 5	1.3 Cables & Springs
	Thurs	Aug 26	Problem Session 3	1.3
	Fri	Aug 27	Lecture 6	1.3 Tank Pumping
3	Mon	Aug 30	Lecture 7	1.3 Tank Pumping
	Tues	Aug 31	Problem Session 4	1.3
	Wed	Sep 1	Lecture 8	1.3 Hydrostatic Force
	Thurs	Sep 2	Problem Session 5	1.3
	Fri	Sep 3	Lecture 9	1.3 Center of Mass
4	Mon	Sep 6	Labor Day	
	Tues	Sep 7	Problem Session 6	Review
	Wed	Sep 8	TEST #1	
	Thurs	Sep 9		Cancelled
	Fri	Sep 10	Lecture 10	2.1 Trigonometric Integrals
5	Mon	Sep 13	Lecture 11	2.1 Trigonometric Integrals
	Tues	Sep 14	Problem Session 7	2.1
	Wed	Sep 15	Lecture 12	2.2 Trigonometric Substitutions
	Thurs	Sep 16	Problem Session 8	2.2
	Fri	Sep 17	Lecture 13	2.3 Partial Fractions

6	Mon	Sep 20	Lecture 14	2.3 Partial Fractions
	Tues	Sep 21	Problem Session 9	2.3
	Wed	Sep 22	Lecture 15	2.6 Improper Integrals
	Thurs	Sep 23	Problem Session 10	2.6
	Fri	Sep 24	Lecture 16	2.6 Improper Integrals
7	Mon	Sep 27	Lecture 17	2.5 Numerical Integration
	Tues	Sep 28	Problem Session 11	2.5
	Wed	Sep 29	Lecture 17	2.5 Numerical Integration Error
	Thurs	Sep 30	Problem Session 12	Review
	Fri	Oct 1	TEST #2	
8	Mon	Oct 4	Fall Break	
	Tues	Oct 5	Fall Break	
	Wed	Oct 6	Lecture 18	3.1 Intro to Diff. Eq.
	Thurs	Oct 7	Problem Session 13	3.1, Slope Fields
	Fri	Oct 8	Lecture 19	3.2 Euler's Method & Separation of Variables
9	Mon	Oct 11	Lecture 20	3.3 Applications
	Tues	Oct 12	Problem Session 14	3.2, 3.3
	Wed	Oct 13	Lecture 21	3.3 Applications
	Thurs	Oct 14	Problem Session 15	3.3
	Fri	Oct 15	Lecture 22	3.4 2nd Order Diff. Eq.
10	Mon	Oct 18	Lecture 23	3.5 Non-homogeneous Diff. Eq.
	Tues	Oct 19	Problem Session 16	3.5
	Wed	Oct 20	Lecture 24	3.6 Applications
	Thurs	Oct 21	Problem Session 17	3.6
	Fri	Oct 22	Lecture 25	Review
11	Mon	Oct 25	TEST #3	
	Tues	Oct 26		Cancelled

	Wed	Oct 27	Lecture 26	4.1 Sequences
	Thurs	Oct 28	Problem Session 18	4.1
	Fri	Oct 29	Lecture 27	4.2 Series
12	Mon	Nov 1	Lecture 28	4.2 Special Series
	Tues	Nov 2	Problem Session 19	4.2
	Wed	Nov 3	Lecture 29	4.2 Divergence Test Comparison Test
	Thurs	Nov 4	Problem Session 20	4.2
	Fri	Nov 5	Lecture 30	4.3 Integral Test & Error
13	Mon	Nov 8	Lecture 31	4.4 Alternating Test & Error
	Tues	Nov 9	Problem Session 21	4.3, 4.4
	Wed	Nov 10	Lecture 32	4.5 Ratio Test
	Thurs	Nov 11	Problem Session 22	4.5
	Fri	Nov 12	Lecture 33	Review
14	Mon	Nov 15	TEST #4	
	Tues	Nov 16		Cancelled
	Wed	Nov 17	Lecture 34	4.6 Power Series
	Thurs	Nov 18	Problem Session 23	4.6
	Fri	Nov 19	Lecture 35	4.7 Representations of Power Series
15	Mon	Nov 22	Lecture 36	4.8 Maclaurin Series
	Tues	Nov 23	Problem Session 24	4.8
	Wed	Nov 24	Thanksgiving	
	Thurs	Nov 25	Thanksgiving	
	Fri	Nov 26	Thanksgiving	
16	Mon	Nov 29	Lecture 37	4.9 Taylor Series & Taylor Polynomials
	Tues	Nov 30		
	Wed	Dec 1		

	Thurs	Dec 2		
	Fri	Dec 3	FINAL EXAM	8:30 AM - 11:00 AM