

Math 241: Calculus II
Syllabus for Sections 001, 005
Fall 2020

Instructor of Record for sections 001 and 005: Brenda Burns-Williams

Office: SAS 3242

Phone: 919-513-2114 (I am not in the office often, email is best)

Email Address: bdburns@ncsu.edu

Office Hours (by Zoom): Monday, Wednesday: 1:00-2:30 p.m., and by appointment. To join my office hours via Zoom, use the link provided on the Moodle page.

Course Meeting Time:

Section 001 – Synchronous Online

Lectures: Monday, Wednesday, Friday Pre-recorded lectures. (Available in Moodle)

Recitations: Tuesday, Thursday Online via zoom. Time based on your recitation scheduled. (Link to Zoom session available in Moodle recitation page)

Section 005 – Asynchronous online – No set meeting time. Recordings of lectures and recitation sections will be posted and can be viewed when each student has time.

Prerequisite: MA 141 or it's equivalent

GEP Category: This course does fulfill a General Education Program requirement.

Materials/book: *Calculus II for Engineers and Scientists* (Franke, Griggs, Norris; accessible via WebAssign under RESOURCES; \$45) Students actually pay for the webassign homework and the e-book at the same time.

Course Description: 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.

Course Structure and Rules of Engagement: There are two types of content delivery for this course, Lectures and Recitations.

Lectures: Monday, Wednesday, and Friday of each week are considered lecture days. The lectures were recorded previously and links to the recordings are given in Moodle for each of the lectures. These lectures may be viewed at a time that is most convenient for each student. We will track when you viewed the lecture using an assignment tracker in Moodle.

Recitations: Recitations are held on Tuesdays and Thursdays of each week. They will be conducted synchronously via Zoom and will be interspersed with small group activities. You must attend the meetings during your specified time. We plan to take attendance for these meetings. The recitations will be structured so that there is a lot of student interaction during the meeting.

Course Delivery Changes Related to COVID-19: Please be aware that the situation regarding COVID-19 is frequently changing, and the delivery mode of this course may need to change accordingly, including possibly moving from synchronous sessions to an asynchronous format. Regardless of the delivery method, we will all strive to provide a high-quality learning experience.

Note: If I need to be out for an extended period of time, Dr. Leslie Kurtz will take over in my absence.

Email: All emails will be sent to your official ncsu.edu email address.

Communication: So that I can communicate with you in a timely manner all questions regarding course content and organization are required to be posted in the Moodle Forum. They will be answered in the forum, either by me, my ta, or your fellow students. (Sometimes you are online and working at hours I am not online. Please help each other out if you see someone posting a question, especially outside normal business hours.) I encourage you to interact with your classmates as often as you can in this way.

All personal requests, questions about grades, or subjects of a confidential matter should be sent to me via my email address above.

Homework: Graded homework is assigned via WebAssign, (<http://webassign.ncsu.edu>) a web-based homework system. *On the first day of classes* you will be able to access your course on WebAssign and pay for access. This may be paid on the website with a check card or a credit card. You will be allowed to use WebAssign for a the first few days of class without paying, but you will be denied access to assignments if payment is not made by the due date listed on WebAssign.

You generally have **5 submissions** for each question. The final submission is the grade you receive on the assignment. I will set up a forum in Moodle for questions about the WebAssign assignments. You may post questions about exercises and give answers or hints to each other. I will chime in occasionally as needed, but this is primarily your opportunity to help each other out.

WebAssign problems make up a large portion of your final grade, so do not fall behind or skip ANY of these. There is no make-up available for missed assignments, so keep track of the due dates and **START WORK EARLY** on the problems. **Mathematics is not a spectator sport!** You must work regularly in order to understand and master the concepts. Test questions will often relate to the WebAssign problems, however remember to work problems from the book as well. These are good pencil and paper practice for the tests.

Course Schedule: I will attach a lecture schedule to the end of the syllabus.

Grading: The final grade is based on Homework (15%), 3 Tests (60%), and a Final Exam (25%).

Standard Grading Scale: $97 \leq A+ \leq 100$, $93 \leq A < 97$, $90 \leq A- < 93$, $87 \leq B+ < 90$, $83 \leq B < 87$, $80 \leq B- < 83$, etc.

Tests:

All tests are given remotely as a Moodle quiz/test. The test is “pencil and paper”, open ended questions that you will need to provide solutions for on your own paper. Once you have completed your test, you will need to scan the solutions and upload the file to Moodle. Suggestions on how to create a pdf with a smart phone are provided in the Moodle space. **NO Graphing Calculators or calculators that compute integrals or take derivatives on test day!**

Sections 001: Your test is given during your synchronous class time. The test must be taken during that time.

Section 005: You will be given a 24 hour window in which to take your test. Once you begin the test, you will have 90 minutes to complete and upload each midterm test and 3.5 hours for the final exam.

Test 1: Sept 3 (Chapter 0, 1.1–1.3)

Test 2: Sept 17 (Sections 2.1 – 2.6)

Test 3: Oct 20 (Sections 3.1 – 3.6)

Test 4: Nov 5 (Sections 4.1 – 4.6)

Final Exam: (Cumulative: All sections above plus sections 4.7, 4.8, 4.9)

Section 001: Monday, Nov 16 8:00 – 11:30 am

Section 005: Monday, Nov 16 3 hrs + 30 min for upload

**I expect all students to adhere to the University's regulations on academic integrity (i.e. No cheating or plagiarizing!). Talking during a test is not permitted for any reason. If a student talks or disrupts the test in any manner, that student's paper will be confiscated and he or she will be given a 0 on the test. If a student is cheating, then the matter will be referred to the Office of Student Conduct for further action*

Grading/Scheduling Changing Options Related to COVID-19: If the delivery mode has a negative impact on your academic performance in this course, the university has provided tools to potentially reduce the impact:

Enhanced S/U Grading Option: [Enhanced Satisfactory/ Unsatisfactory Grading Option](#)

Late Drop: [Enhanced Late Drop Option](#)

Be aware that if you use the enhanced S/U grading option, you will still need to complete the course and receive at least a C- to pass the course.

In some cases, another option may be to request an incomplete in the course. Before using any of these tools, please discuss the options with me and with your academic advisor.

Auditing the Course: To audit the course, you must have the approval of your advisor and the Mathematics Department. In order to receive an AU, you must attend the majority of the sessions, and you must hand in all of the homework and take all of the tests. See:

<https://policies.ncsu.edu/regulation/reg-02-20-04/>

for more information concerning course audits.

Incomplete Grades: Incomplete grades will be handled on an individual basis. Note, however, that if an extended deadline is not authorized by an instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as attempted courses on transcripts. The burden of fulfilling an

incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at:

<https://policies.ncsu.edu/regulation/reg-02-50-03/>.

Attendance Policy/Late Assignments/Make-up Work: You are expected to attend all classes on time. Late assignments and make-up work will only be allowed for excused absences. You should contact me by email before any anticipated excused absence. If you have an unanticipated excused absence (for example, a medical emergency), you should contact me within one week of returning to class.

For complete attendance and excused absence policies, please see:

<https://policies.ncsu.edu/regulation/reg-02-20-03-attendance-regulations/>.

COVID-19 Related Absences: If you need to miss class because you have been advised that you may have been exposed to COVID-19 or you have a personal or family situation related to COVID-19 that prevents you from attending our sessions, please contact me. Together we will develop a plan to help you keep up with your coursework during any such absences. COVID 19-related absences will be considered excused. You do not need any additional documentation. (But, again, please make sure you contact me.)

Academic Integrity/Honesty: Students are required to comply with the university policy on academic integrity/honesty found in the Code of Student Conduct:

<https://policies.ncsu.edu/policy/pol-11-35-01/>.

It is my understanding and expectation that your signature on any test or assignment means that you have adhered to the Pack Pledge:

I have neither given nor received unauthorized aid on this test or assignment.

Violations of academic integrity will be handled in accordance with the Student Discipline Procedures ([NCSU REG 11.35.02](#)).

Cell Phone Use: Cell phones should be turned off during class. But if you have an emergency and need to keep your phone on during class, please let me know before class.

Digital Course Components: In this course we will use Zoom and Moodle. Please see the relevant [technology requirements](#). If you need access to additional technological support, please contact the Libraries' Technology Lending Service ([Technology Lending](#)).

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Moodle: All reading materials and videos are housed on the course website.

Zoom: Our recitations will be conducted synchronously (Tuesday and Thursday) via Zoom. I'll post a Zoom link in your recitation section for the meeting.

I will initially put all of you on "mute", but if you want to talk, there is a button on the left side of the Zoom screen that will enable you to unmute yourself. Zoom enables us to have breakout rooms for small group discussions and we will utilize that function as well.

I will be recording our Zoom sessions and will be posting links to the recordings on our Moodle page for your use. I will only record our mathematical discussions and not, for example, the parts of our sessions where we check in with each other. In order that all students in the class feel comfortable asking questions, and making conjectures, etc., you may not share the links with anyone outside of our class.

These recordings are for use in our current class (and possibly for use in future educational purposes). By your continued participation in this recorded course, you are providing your permission to be recorded.

Diversity, Equity, and Inclusion: Diversity, equity, and inclusion are important to the success of our students at NC State. Every student, every faculty member, and every staff member who comes to NC State enriches us through their varied perspectives, knowledge, and backgrounds. Our classroom is one in which every student is respected and feels heard.

In an effort to affirm and respect the identities of transgender students in the classroom and beyond, please contact me if you wish to be referred to using a name and/or pronouns other than those listed in the student directory.

I have benefited from my majority status, the most impactful of which has been my white privilege, throughout my life. I know that our students of color face issues that I have never faced, nor will ever face. I want to affirm that I will listen to your experiences and to the experiences of all of my students if you would like to share them with me. I value your perspectives and I will advocate for your needs in our department and throughout the university.

I welcome any additional suggestions you have for including the value of diversity, equity, and inclusion in this course.

Accommodations for Disabilities: 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 at Holmes Hall, Suite 304, 2751 Cates Avenue, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the [Academic Accommodations for Students with Disabilities Regulation \(REG02.20.01\)](#).

Non-Discrimination Policy: NC State prohibits discrimination, harassment, and retaliation based on a person's age (40 years or older), color, disability, genetic information, gender identity, national origin, race, religion, sex (including pregnancy), 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 919-513-0574.

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>.

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](#))
- NC State CARES Team: As members of the NC State Wolfpack community, we each share a personal responsibility to express concern for one another and to ensure that our campus remains a healthy and safe environment for learning. Occasionally, you may come across a classmate whose personal behavior concerns or worries you, either for your classmate's well-being, for your well-being or for the well-being of others. When this is the case, I would encourage you to report the 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](#)).

Additional COVID-19 Information: Due to the Coronavirus pandemic, public health measures have been implemented across campus. Students should stay current with these practices and expectations through the [Protect the Pack](#) website (<https://www.ncsu.edu/coronavirus/>).

We are most concerned about your health and the health of the students, faculty, and staff across campus. If you test positive for COVID-19, or are told by a healthcare provider that you are presumed positive for the virus, please follow university guidelines, including self-reporting ([Coronavirus Self Reporting](#)): Self-reporting is not only to help provide support to you, but also to assist in contact tracing for containing the spread of the virus.

Community Standards related to COVID-19: We are all responsible for protecting ourselves and our community. Please see the [Community Standards](#) and Rule 04.21.01 regarding Personal Safety Requirements Related to COVID-19 ([RUL 04.21.01 – Personal Safety Requirements Related to COVID-19 – Policies, Regulations & Rules](#)).

NC State Rules and Regulations: Students are responsible for reviewing the NC State University Policies, Rules, and Regulations (PRRs) which pertain to their course rights and responsibilities, including those referenced both below and above in this syllabus:

- Equal Opportunity and Non-Discrimination Policy Statement <https://policies.ncsu.edu/policy/pol-04-25-05/> with additional references at <https://oied.ncsu.edu/equity/policies/>
- Code of Student Conduct <https://policies.ncsu.edu/policy/pol-11-35-01/>

Important Resources for Students

- NC State Keep Learning, tips for students taking courses remotely: <https://dasa.ncsu.edu/academics/keep-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>
- **Protect the Pack FAQs:** <https://www.ncsu.edu/coronavirus/frequently-asked-questions/>
- **NC State Protect the Pack Resources for Students:**
<https://www.ncsu.edu/coronavirus/reactivating-campus/resources-for-students/>

SCHEDULE FALL 2020

Date	Topic	Video	Homework Due
Aug 10	Ch 0: (Review of Derivatives) Ch 0: (Review of Substitution) Ch 0: (Review of Integration by Parts)	Lecture 1	
Aug 11	Ch 0: U-substitution and Integration by Parts Examples	Rec 1	
Aug 12	Ch 0: Integration by Parts 1.1 Arc Length	Lecture 2	
Aug 13	1.1 Arc Length 1.3 Introduction to Springs	Rec 2	
Aug 14	1.3 Work (springs)	Lecture 3	
Aug 17	1.3 Work (emptying a tank)	Lecture 4	
Aug 18	1.3 Work (emptying a tank)	Rec 3	Intro to WebAssign Entering Symbolic Answers Homework 0.1, Homework 1.1, Homework 1.2
Aug 19	1.3 Hydrostatic Force	Lecture 5	
Aug 20	1.3 Work (lifting chains, etc)	Rec 4	
Aug 21	1.3 Moments & Centers of Mass	Lecture 6	
Aug 24	1.3 Centers of Mass 1.2 Average Value	Lecture 7	
Aug 25	2.1 Trig Integrals	Rec 5	Homework 1.3
Aug 26	2.1 Trig Integrals 2.2 Trig Substitution	Lecture 8	
Aug 27	HW session		
Aug 28	2.2 Trig Substitution	Lecture 9	
Aug 31	2.3 Partial Fractions	Lecture 10	
Sept 1	Test 1 Review & HW session		Homework 2.1, Homework 2.2
Sept 2	2.3 Partial Fractions	Lecture 11	
Sept 3	Test 1		
Sept	2.5 Numerical Integration	Lecture	

4		12	
Sept 7	2.5 Simpson's Rule and Error Estimates	Lecture 13	
Sept 8	2.4 Integral Tables	Rec 6	Homework 2.3
Sept 9	2.6 Improper Integrals	Lecture 14	
Sept 10	2.6 Improper Integrals Cont.	Rec 7	
Sept 11	3.1 Intro to Differential Equations	Lecture 15	
Sept 14	3.1 Slope Fields	Lecture 16	
Sept 15	Test 2 Review & HW session		Homework 2.4, Homework 2.5, Homework 2.6
Sept 16	3.1 Euler's Method	Lecture 17	
Sept 17	Test 2		
Sept 18	3.2 Separable Equations	Lecture 18	
Sept 21	3.2 Orthogonal Trajectories	Lecture 19	
Sept 22	3.3 Exponential Growth	Rec 8	Homework 3.1
Sept 23	3.3 Logistic Growth 3.3 Newton's Law	Lecture 20	
Sept 24	3.3 Newton's Law Examples 3.3 Compound Interest	Rec 9	
Sept 25	3.3 Mixing Problems	Lecture 21	
Sept 28	3.4 2 nd Order Linear d.e.	Lecture 22	
Sept 29	Problem session: 3.1, 3.2		Homework 3.2, Homework 3.2, Homework 3.3
Sept 30	3.4 Case 3	Lecture 23	
Oct 1	Problem session: 3.3		
Oct 2	3.4 BVPs 3.5 Undetermined Coefficients	Lecture 24 Lecture 24.5	
Oct 5	3.5 Undetermined Coefficients	Lecture 25	
Oct 6	3.5 Undetermined Coefficients and the Superposition Principle	Rec 10	Homework 3.4
Oct 7	3.5 cont	Lecture	

	3.6 Springs	26	
Oct 8	Problem session		
Oct 9	3.6 Springs	Lecture 27	
Oct 12	3.6 Circuits	Lecture 28	
Oct 13	Problem session		Homework 3.5, Homework 3.6
Oct 14	4.1 Sequences	Lecture 29	
Oct 15	Test 3 Review		
Oct 16	4.1 Sequences	Lecture 30 Lecture 30.5	
Oct 19	4.2 Series	Lecture 31	
Oct 20	Test 3		
Oct 21	4.2 Series	Lecture 32	
Oct 22	Problem session		
Oct 23	4.3 Integral & Comparison Tests	Lecture 33	
Oct 26	4.3 Integral Test Estimation 4.4 Alternating Series Test	Lecture 34	
Oct 27	4.4 Alternating Series 4.5 Absolute Convergence	Rec 11	Homework 4.1, Homework 4.2, Homework 4.3
Oct 28	4.5 Ratio Test	Lecture 35	
Oct 29	Problem session		
Oct 30	4.6 Power Series	Lecture 36	
Nov 2	4.7 Power Series Representations	Lecture 37	
Nov 3	Test 4 Review & Problem session		Homework 4.4, Homework 4.5, Homework 4.6
Nov 4	4.7 Differentiation/Integration of Power Series	Lecture 38	
Nov 5	Test 4		
Nov 6	4.8 Taylor and Maclaurin Series	Lecture 39	
Nov 9	4.8 Maclaurin Series	Lecture 40	
Nov	4.9 Taylor & Maclaurin	Rec 12	Homework 4.7

10	Polynomials		
Nov 11	4.8 Binomial Series	Lecture 41	
Nov 12	4.8 Binomial Series & Review	Rec 13	Homework 4.8, Homework 4.9
Nov 13	Final Review	Lecture 42	
Nov 16-20	Final Exams		