Skip to main content

MA 241: Calculus II

Department of Mathematics · NC State University

Spring 2026 Course Syllabus

View, download, or print this syllabus as a PDF

Click here for an HTML version of this syllabus.

Table of Contents

Course Information

- **Instructor:** Dr. Bevin Maultsby (she/her/hers)
- **Office:** SAS Hall 3230
- **Office Hours:** Appointment scheduler
- **Course Modality:** This course is an online, asynchronous Distance Education course.
- **Course Website:** Access the course through NC State WolfWare.
- **Section:** 601

How to Reach Me

Even though the course is asynchronous and online, I enjoy interacting with students and want you to feel comfortable contacting me throughout the semester. Please read the section below for the best way to reach me:

- Please ask general course questions and mathematical questions on Yellowdig (our course forum). Do not use the private messaging feature in Yellowdig.
- Please use the Email Me forum in Moodle to send me a direct message. This message is not visible to your classmates.
- My email address is bmaults@ncsu.edu. However, it is possible that if you email me directly, you will be instructed to contact me through a different channel. This helps me keep my messages organize and reply more efficiently. I aim to respond to messages within 1-2 business days. If more than a week has gone by without a response, please let me know as I must have missed your message.
- You are always welcome in my **Office Hours**, which are generally arranged online using this appointment scheduler. This calendar generally shows appointments for this week and next. If there are no suitable times over the next two weeks, please send me a message with at least three suitable times for you; you may also suggest in-person meeting times between 10am and 3:30pm. *You may be required to log in to your NC State gmail account in order to see my appointment calendar.*

Course Description

(4 credit hours) 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.

Prerequisite: MA 141 with grade of C- or better or AP Calculus credit. Credit is not allowed for both MA 241 and MA 231.

GEP Mathematical Sciences

Learning Objectives

We will continue the study calculus of a single-variable. Two goals in each unit and across the semester are the following:

1. Improve and refine mathematical problem-solving abilities. Students will apply the course definitions and theory correctly to set up and solve a variety of calculus problems. These problems include applications to physics and engineering.

2. Develop logical reasoning skills. Students will improve their ability to read and analyze mathematical problems, formulate a solution, and interpret their result.

More specifically, upon successful completion of this course, students will be able to:

- Apply a variety of integration techniques Students will compute definite and indefinite integrals using substitution, integration by parts, trigonometric identities, partial fractions, and numerical methods such as the Trapezoidal Rule and Simpson's Rule.
- Interpret the meaning of integrals in physical and geometric contexts Students will solve problems involving arc length, surface area, average value, work, fluid force, and center of mass using appropriate integrals.
- Analyze sequences and determine convergence Students will use limit laws and formal definitions to identify convergence or divergence of sequences.
- Determine convergence of infinite series Students will apply convergence tests, including the geometric series test, comparison tests, ratio test, root test, and alternating series test, to determine whether a given series converges.
- Construct and use power series representations of functions Students will find Taylor and Maclaurin series, determine intervals of convergence, and manipulate series through term-by-term differentiation and integration.
- Model and solve basic ordinary differential equations Students will solve separable and linear differential equations, interpret slope fields, apply Euler's method, and solve second-order linear differential equations with constant coefficients using characteristic equations and the method of undetermined coefficients.

Course Structure

Lecture Materials

This section is the Distance Education section of MA 241–it is designed to accommodate students who may be far from campus and have unusual schedules. Therefore, the content lectures are pre-recorded. These lectures were recorded by Dr. Bevin Maultsby purposefully for NC State University students and are hosted on YouTube for easy access.

The lectures in this course are interactive, you earn a score on each. At a minimum, every recorded lecture:

- includes pop-up questions (look for the small open bubbles on the timeline), and
- concludes with a two-choice summary where you select the correct statement.

Your Lecture Activity Score for each unit affects how the test subscores for that unit are curved. See the Test Curving section for details.

After finishing a lecture, go to the **Summary & Submit** page to review your score and submit it to the gradebook.

Scoring Mishaps

- **Partially completed lectures**: If you begin a lecture but do not finish it in one sitting, Moodle may record pop-up answers incorrectly (for example, showing 0 points). For best results, start a lecture only when you can complete it without interruptions.
- **Re-opening after submission**: If you reopen a lecture after submitting, the displayed score inside the activity may appear lower. This is a display issue only—do not re-click Submit. Your gradebook stores the correct submitted grade; verify via the gradebook if unsure.

If a glitch causes your lecture score to show below 80% *after* you have completed the overall unit, contact the instructor. The 80–100% buffer exists to accommodate these discrepancies.

Watching on YouTube

You may view videos directly on YouTube, but to receive full curve credit you must answer the pop-up questions inside Moodle. Do not rely exclusively on YouTube if you want the maximum credit possible to you. In addition, I may consult your

Moodle viewer logs to see if you are following the material; watching the videos through Moodle gives a more accurate picture of your study habits.

Videos are hosted on YouTube and may include short ads before or after content. Ads do not reflect the instructor's or NC State's views and are not selected by the instructor.

Live Sessions

This course is completely asynchronous, which means that students have no real-time class meeting requirements. Learning materials, activities, assignments, and assessments are delivered through Moodle, a secure and easy-to-use online learning platform. There may be occasional optional Zoom meetings, please find the link to them on the course calendar.

Time Commitment

MA 241 is a fast-paced course. On-campus sections during a regular semester meet 4-5 days a week for up to 250 minutes total. This asynchronous online section condenses the on-campus version for flexibility, but you should expect a learning experience comparable to the number of minutes of in-class contact.

It is important to understand the time commitment required to succeed. In accordance with academic standards, each college credit hour equates to approximately three hours of work per week over a full semester. This 3:1 ratio is well-established in Higher Education — please click here for NC State's summary of this standard.

Therefore, for this four-credit hour course, you should expect to devote roughly **12 hours per week** to course-related activities in a regular semester. This includes time spent on lectures, readings, assignments, and study. One possible breakdown (may vary week to week):

- Lectures and instructional content: Expect to spend around **4 regular semester hours per week** engaging with lectures and other course materials. This includes viewing online lectures and reviewing supplementary materials. This does not include studying or re-watching lectures.

  In accordance with accreditation standards, the entire semester of lecture materials should account for about 50 hours:

  50 weeks × 4 credit hours per week × 50 min per credit hour = 3000 total minutes = 50 total hours.

Approximate total video run-time:

- Unit 0: 1 hour, 0 minutes, 5 seconds (plus activities during Week 1)
- Unit 1: 4 hours, 44 minutes, 52 seconds
- Unit 2: 3 hours, 49 minutes, 49 seconds
- Unit 3 Pt 1: 5 hours, 59 minutes, 6 seconds
- Unit 3 Pt 2: 4 hours, 29 minutes, 19 seconds
- Unit 4 Pt 1: 4 hours, 37 minutes, 18 seconds
- Unit 4 Pt 2: 3 hours, 23 minutes, 53 seconds

The combined total run time for Units 1–4 is **27 hours, 04 minutes, and 17 seconds**. However, as videos move faster than in-class meetings, expect viewing the lecture content to take **1.5–2× the posted time**, depending on the student, for an average of about 47.5 hours. Together with the activities in Unit 0, this figure amounts to 50 hours.

Please reach out any time you are burdened; we can discuss ways to balance your workload.

- Assignments and assessments: Approximately **4 hours per week** should be allocated to completing homework and preparing for exams. Regular practice is crucial.
- Self-study and review: Dedicate around **4 hours per week** for self-study (reviewing lectures and notes, reading the textbook, solving additional problems).

These are estimated times and may vary based on your prior familiarity with calculus. If you find yourself spending significantly more time, please reach out for assistance in **Office Hours**.

Communication and Getting Help

Forum

We will use the Yellowdig platform for our course community and discussions. Ideally, math questions should be asked in office hours or on Yellowdig. In general, I will not answer math questions sent by email-if you have a math question you would like to send to me, please post it on Yellowdig. I will monitor and respond to questions on Yellowdig.

As you create posts and make comments, and as other students react to or comment on your posts, you will automatically receive participation points. The

points you earn in Yellowdig are passed to the Moodle gradebook for your discussion credit.

To get 100% for your recitation score, you will need to accumulate points each week over the course of the semester. Here is how it works:

- There are "weekly periods" in the course. The forum will open on the first day of class, which will serve as the first "week". Holiday weeks (Fall Break, Thanksgiving Break) are merged with neighboring weeks, and the week of final exams is merged with the last week of class.
- To stay on pace, you should aim to earn 1000 points for each weekly period. However, you can actually earn up to 1350 points per week. Therefore, you can create a buffer in case you fall short in any week.
- At 11:59 pm at the end of each weekly period, the weekly points will reset. You will have a new period in which to earn up to 1350/1000. You can keep posting even after you have reached the weekly maximum; you just will stop earning additional credit toward your grade until the next reset.
- You may exceed the maximum semester point total in Yellowdig, but the maximum score in Moodle is 100%.

To start, please use the "Introductions/Community" Topic and share a bit about who you are and what you are hoping to get out of taking this class. Please feel welcome to share pictures, videos, or interesting links about you and your accomplishments!

Email

Please be sure to see the beginning of this syllabus for the best ways to contact me.

Contact me for confidential and private discussions about grades, scheduling office hours, etc. Please include MA 241 in the subject line. In general, I may not respond to messages outside of business hours (M-F, 9am-5pm), and it may take 24-72 hours for me to respond to an message. Math questions are generally best asked in office hours or on our forum, not by email.

Tutoring Centers

During the regular school year, there is free help available on campus for MA 241. See the following links:

- Math Tutoring Center (MTC) in SAS 2105. This room has many computers available so that you can work on your assignments. The room is a low-stress environment: you may work quietly in the room without engaging a

tutor, or you may ask questions of the graduate tutors when they are available.
- Academic Success Center (ASC) in D.H. Hill Library has a few options:
  - ASC Drop-In Tutoring
  - ASC Appointment Tutoring
  - ASC Weekly Group Tutoring

For Drop-In Tutoring hours, notice the MTC is open during the day, and the ASC is open in the evening.

Textbook and WebAssign

Our textbook is Calculus for Engineers and Scientists, Volume I by John Franke, John Griggs, and Larry Norris, from NC State University. The text is in pdf format and is available to students under the Resources tab on WebAssign.

Please see information about purchasing WebAssign under Student Expenses. Do not create a new account if you already have a Cengage account. If you have trouble accessing Cengage, please post on the class forum.

The WebAssign homework assignments are obtained, submitted, and graded online with grades appearing in the course Gradebook. Please find our assignments on Moodle.

Recommendations

- Work ahead of schedule. Due dates are chosen to ensure that you have ample time between the videos and the due dates, but you should work on the homework sets as you watch the videos.
- Print each assignment and work it with pencil and paper before submitting. I recommend collection your final solutions in a binder, spiral notebook, or similar.
- Number each homework set and your work for each problem so that you can study it later. Do not work problems out on unlabeled scratch paper.
- Work daily or at least regularly to keep the material fresh in your mind and cut down on time searching for or remembering forgotten information.

Your WebAssign average in the Moodle gradebook will be a weighted arithmetic mean based on each assignment's point total. For example, your score on an assignment worth 50 points counts more than your score on an assignment worth 10 points.

WebAssign Due Dates

Due dates are listed with each assignment on WebAssign; please be sure to check the upcoming WebAssign due dates each week. I encourage you to work on each WebAssign as soon as possible—do not wait until the due date to begin. Please feel free to discuss WebAssign on Yellowdig (the course forum), including the specifics of problems and your attempts at solutions.

All due dates are visible on the Course Calendar–note that some assignments are due on the same day. For consistency in your calendar, all assignments are due at 11pm. In WebAssign, you may see times like 11:17pm as this causes the assignments to appear in chronological order, but the intention is 11pm.

Some assignments may have a due date which is during or after the exam on the pertinent material. Any such due date has been chosen to give you consistency and ample time–the alternative would be to collect the homework sooner. Since you receive immediate feedback from WebAssign, I encourage you to try to complete these assignments before the test.

When you have finished an assignment, you can click Mark as done in Moodle to indicate for your records that the assignment is completed.

Extensions and Dropped Grades

If you need extra time to complete an assignment, WebAssign offers a seven-day extension for assignments with 80% credit (a 20% penalty). How this works:

- For example, if an assignment has 5 questions, each worth 10 points, and you need more time to finish the last problem, your grade will be a maximum of 48 out of 50 (10 + 10 + 10 + 10 + 8). The 20% penalty only applies to the problems you submit late.
- You set up the extension yourself directly in WebAssign. When you request an extension, the assignment will be open for an additional 24 hours. You can request multiple extensions, but each request must be made after the previous 24-hour period has expired. For instance, you cannot request all seven days of extensions at once; you must wait for each 24-hour period to finish before requesting the next extension.
- The extension period runs for seven consecutive calendar days. These days can overlap with breaks: you cannot pause the extension during a university break and may need to work during break to finish your assignment.

Because of these policies, extensions from the instructor are generally not given. You should try to complete every assignment as soon as you can and as best as you can so that you can self-extend assignments in case of emergencies. If you

have extenuating circumstances that affect multiple assignments, please contact me to discuss your situation, but it needs to be first documented with Absence Verification.

To account for illnesses, busy workloads, and unforeseen circumstances, your three lowest scores will be automatically dropped in the Moodle gradebook based on Moodle's computational algorithm.

Please note, circumstances that arise before the drop date, extend throughout the semester, and affect more than five assignments are not eligible for extensions. If you are facing a long-term personal crisis before the drop date, you should consult with your advisor and the university, and bring it to my attention before the drop date. This course is expected to conclude at the end of the semester and is not self-paced. No extensions from the instructor are ever granted during the last week of the semester or the exam period. At that point, it is too late to make up old assignments.

Some sections may be designated as Extra Credit. Participation in these is entirely optional, and the material will not be included in tests. Extensions are never given on Extra Credit assignments.

Test Information

Test Dates

- Test 1: 2/4-2/9, 90 minutes [last call: 2/27].
- Test 2: 3/9-3/13, 90 minutes [last call: 4/8]. (Note: The Drop/Revision Deadline is 3/25.)
- Test 3: 4/14-4/17, 120 minutes [last call: 4/27].
- Final Exam: 4/29-5/5, 150 minutes.

You are welcome to schedule your tests any time between the first recommended day and the last call—there is no penalty for taking the test later than the recommended period. However, it is unwise to procrastinate without good reason. Delaying your test will mean playing catch-up for the rest of the semester.

If you are unable to take your test on the day you originally scheduled, you may re-schedule it so long as it is completed by the last call date.

There are no makeup exams beyond the last call date. Therefore, I encourage you not to plan your test for that day (or the days leading up to it). This date is set to allow for makeups; if you schedule your exam on that day and are sick that day, then your relevant test subscores will be 0.

Proctors

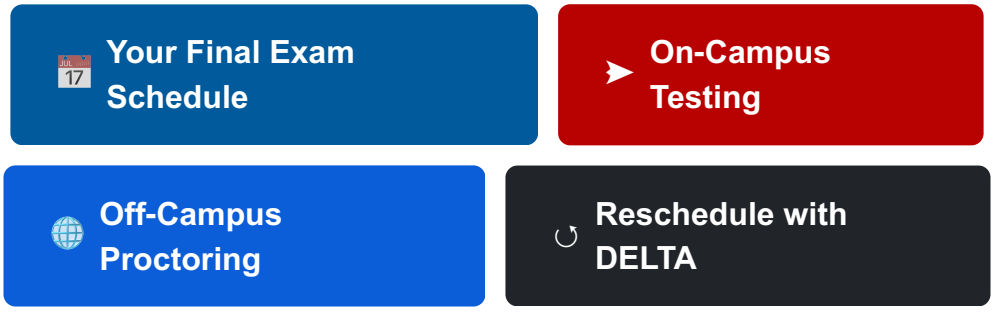
All examinations will be proctored through DELTA. You will either take your exam with DELTA, or coordinate remote proctoring with DELTA, according to which situation best describes you:

- If you live less than 50 miles away from Raleigh, NC, then you will take your tests on our campus through the Distance Education Testing Centers. Students should be mindful of closing hours for both Testing Centers, and give themselves plenty of time to complete their exams. For information, please visit DELTA on-campus testing services.
- Those students who live more than 50 miles away from Raleigh, NC do not have to take their tests on NCSU campus. They may use a proctor in their town for testing. The proctor must be approved in advance through DELTA (not the instructor). It can take up to 1 week to verify a proctor and set up all needed contact info, so please do this early! Please visit the remote proctor website at DELTA remote proctoring.

Sign up your preferred time/date now! Time slots fill up fast!

Note: the word *remote* in this context means that you are using a professional testing site (for example, a testing center, a local library, a college, etc.) other than DELTA. Remote testing does not mean testing at home.

Quick Links



Meazure Learning/Proctor U

Meazure Learning/Proctor U is not allowed for any on-campus students or any student located within 50 miles of Raleigh. Off-campus students located near a DELTA approved proctor are also expected to arrange in-person proctoring with an in-person remote proctor.

Therefore, Meazure Learning/Proctor U is only permissible in exceptional situations. I must approve Meazure Learning/Proctor U myself, which may require documentation from you and a one-on-one meeting over Zoom where I will ask you to confirm certain details in MyPack.

Additionally, I encourage you to find an in-person proctor. Using Meazure Learning/Proctor U requires you to have a computer, microphone, webcam, and stable internet connection–this is your responsibility. Technical issues that arise using Meazure Learning/Proctor U may not receive special consideration from the instructor. It is possible the result of a technical issue with Meazure Learning/ Proctor U will be a 0 for all subscores on the exam.

If the instructor discovers that the student has falsified conditions requiring Meazure Learning/Proctor U (for example, the student claims to be in Spain but is in Raleigh), then a Report of an Academic Integrity Violation (RAIV) form will be sent to Student Conduct with a suggested penalty of No Credit for the class (maximum sanction).

If you receive permission to use Meazure Learning/Proctor U, you must schedule your final exam during the first half of the exam window. Scheduling it on the last possible day is risky—if something goes wrong with your Meazure Learning/ Proctor U appointment, it could result in a 0 for your final exam.

Proctor Mishaps

Occasionally, issues arise at testing centers, such as a power outage or a frozen computer. In such cases, the incident must be documented by the testing center proctors, and they need to contact me within 72 hours to provide details about what happened and how long the student was affected.

Questions that have already been attempted will not be re-administered. However, based on the timing and impact of the incident, there are two ways for a student to make up the exam:

1. If the issue occurred in the last 20 minutes of the exam or affected less than 20 minutes (e.g., a computer froze for 5 minutes), the lost time will be added to the final exam.

   Example: if your computer freezes for 12 minutes during Test 3, then 12 minutes will be added to your Final Exam.

2. If the disruption happened earlier or lasted more than 20 minutes, there are two possibilities:

   - If the student is able to schedule a second appointment within the testing window (no later than the Last Call date), variations on unattempted questions may be re-administered during a proctored make-up session. The make-up session may have a shorter time duration than the original, based on when the interruption occurred.

Example: If your testing center loses power during Test 3 after 30 minutes, then variations on all unattempted questions will be placed into a makeup exam. If the original test was 120 minutes, then the makeup exam will have a time limit of 90 minutes.

- Otherwise, if the student is unable to schedule a second appointment within the testing window, the missed time will be added to future exams, potentially in chunks depending on the length of time (student and instructor will agree on the distribution).

  Example: if you take Test 2 on the Last Call date and the power goes out with 50 minutes remaining, one possibility is 25 minutes added to both Test 3 and the Final.

If a disruption of more than 20 minutes happens on the Final Exam, variations on unattempted questions may be placed into a makeup exam with a time duration adjusted to match the missed amount of time. This makeup must be taken by the morning of the day grades are due (see NC State's Academic Calendar).

It is possible other mishaps not described above may arise, and the instructor will assess and determine the appropriate course of action based on the outline here. Note that students who have permission to test with Meazure Learning/Proctor U may not receive any make-up attempts or extended time on future exams.

Calculators

You may use basic (four-function) calculators on exams. These calculators must have no calculus or graphing capabilities.

See the Moodle guide Calculator Guidelines for a list of appropriate calculators. If you are on-campus, you may rent a suitable calculator from the NC State Libraries: Calculator rentals at NC State Libraries.

Test Format

Each exam will be taken as a Moodle quiz. If you select a remote proctor, your proctor must be able to administer this type of exam. You may not bring your own laptop to the testing center to take the exam.

The exams will be a combination of fill in the blank, T/F, multiple choice, short answer, and "essay" questions (where you write out work as best you can). Full details about the layout of each test are posted in the Tests Section and Final Exam Section on Moodle. In these sections you can also find links to practice problems and practice tests (with fully worked out solutions).

Test Return Policy

As you may encounter multiple attempts on certain questions, tests are never returned to the student. This policy is strict to protect the integrity of the testing process. However, you will get feedback:

- Tests allow you to check your answers as you complete them.
- You may come to office hours to discuss your performance. During Office Hours online, I can talk holistically about your performance.
- If you want to see your test, you must request in-person office hours in SAS Hall. You will not be allowed to take the test with you, write down the questions, or photograph it. *If you are a remote student, this type of meeting may not be possible, see the paragraph below.*

By continuing your participation in this course, you are agreeing that you will not receive your graded tests. If you feel this feedback is an important part of your learning process, then I encourage you to take the practice exams seriously. Take each practice test with only the permitted materials in a location that resembles the testing environment. Practice test questions resemble the real test questions, and you will get to see your answers as well as the correct answers (many with step-by-step solutions). This process should provide you with the same learning outcomes.

If you are a remote student, you will not be able to see your actual tests. However, use the practice tests for this feedback purpose, as described above.

Additional Information

Valid ID Required: You must bring a valid photo ID (e.g., school ID, driver's license, passport).

Allowed Items:

- One 3x5 notecard (front and back) — must be left with the proctor.
- A basic four-function (non-scientific, non-graphing) calculator. See the Calculator Guidelines.
- There is also a built-in scientific calculator within the exam.

Two-Factor Authentication: You may need to authenticate into Moodle at the exam center. Right before your test, generate a 6-digit Duo Mobile code and write it on your notecard.

Scrap Paper: The proctoring center should provide scrap paper, but you may need to request it. Scrap work is not saved or returned to me—writing "please see my scrap paper" will not receive partial credit.

Rescheduling: You may cancel and reschedule your exam within the testing window (up to the Last Call date) if needed. If you wake up feeling ill or need extra study time, attempt to reschedule with DELTA (opens in new window) or your approved remote proctor. You do not need to ask my permission or notify me. No exam makeups are possible beyond the Last Call date under any circumstances; therefore, I encourage you to schedule and take your exam before the last possible day.

Each exam has a scientific calculator built into the exam. Therefore, no action will be taken for any of the following situations:

- You brought a calculator which was not permissible (e.g., a graphing calculator like a TI-84).
- Your calculator broke or the batteries died.
- The testing center (or library or other similar facility) was not able to provide you with a suitable calculator.

Testing Windows vs. Coursework

While midterms are often open for longer, I typically recommend a 3-4 day exam window. This does not mean that coursework is paused until the end of that recommended testing time.

- Assignments and forum participation are still due during this period.
- It is advised to start the next unit immediately after your test.
- Lectures for the next unit may begin around last day of recommended testing—you should stay on track.
- If you delay your test, you may fall behind in your coursework for the semester. I encourage you to take your exam during the recommended window.

Test Grading

Subscores

This course uses a non-standard approach to testing. You do not generate an overall test score on any exam. In this class, there is no such thing as "I got an 82 on Exam 2."

Instead, each exam generates subscores for some or all of the following topics, summarized below with their overall course weight:

Chart showing the subscores, their relative course weights, and the number of attempts

Test Subscore	Weight	# of Chances	# of Scores Kept
Foundations of Calculus	6%	4	1
Techniques of Integration	15%	4	2
Applications of Integration	10%	3	1
Sequences and Series	15%	3	2
Power Series	8%	2	1
1st Order Differential Equations	10%	2	1
2nd Order Differential Equations	6%	1 (Final only)	1

Explanation of the chart above

You only need to attempt Foundations of Calculus, Applications of Integration, Power Series, 1st Order Differential Equations, and Second Order Differential Equations once. For each, the Moodle gradebook will choose your highest overall grade and drop all others.

As they are the biggest topics in Calculus II, you need to attempt Techniques of Integration, and Sequences and Series at least twice. The Moodle gradebook will keep your two highest scores for each of these topics and drop all others.

The units are labeled on the test. Therefore, if you are happy with your Foundations of Calculus score after Test 1, then you can skip any section labeled FoC for the rest of the semester.

You should think of all Final Exam questions pertaining to topics 1-6 as a chance to raise your grade on those sections–your topics 1-6 scores cannot be lowered by the Final Exam.

To check your understanding, here are some possible situations:

- Anna gets 0 points on Tests 1 and 2, and then scores 100% on all questions on Test 3 and the Final. Anna finishes with a perfect test score of 70/70 in the gradebook.
- After Test 1, Bob has low scores for FoC and ToI, and chooses to spend the entirety of Test 2 on those two sections. He postpones Applications of Integration and Sequences and Series until Test 3 and the Final. He still has enough chances to earn scores on those topics.
- Charlene is satisfied with all of her subscores after Test 3. On the Final Exam, she only needs to attempt questions on 2nd Order Differential Equations. In this situation, the Final Exam contributes just 6% of her semester grade.

Summary

Each test is cumulative and generates unit-based subscores.

- Test 1 (90 minutes):
  - Foundations of Calculus
  - Techniques of Integration
- Test 2 (90 minutes, sections are shorter):
  - Foundations of Calculus
  - Techniques of Integration
  - Applications of Integration
  - Sequences and Series
- Test 3 (120 minutes):
  - Foundations of Calculus
  - Techniques of Integration
  - Applications of Integration
  - Sequences and Series
  - Power Series
  - 1st Order Differential Equations
- Final Exam (150 minutes):
  - Foundations of Calculus
  - Techniques of Integration
  - Applications of Integration
  - Sequences and Series
  - Power Series
  - 1st Order Differential Equations
  - 2nd Order Differential Equations

You are not required to test on each section on each exam. You want **one** good score for

- Foundations of Calculus
- Applications of Integration
- Power Series
- 1st Order Differential Equations
- 2nd Order Differential Equations

and **two** good scores for

- Techniques of Integration
- Sequences and Series.

Curving

Long Version

The lectures in this course are interactive, you earn a score on each. Each lecture activity contains pop-up questions concludes with summary statements (you choose the correct statement out of two). Your overall Lecture Activity Score for each unit determines how much your test subscores for that unit are curved (rounded up).

You earn the maximum amount of curve points on a particular test unit if you earn at least an 80% of the points for your interactive lectures for that unit. An average Lecture Activity Score less than 80% scales directly. Occasionally points earned during the interactive lectures (the pop-up questions) do not get stored correctly. However, you should only bring this to my attention if your score is less than 80% after completing the unit. The 20% buffer (80-100%) is to allow for some of these mishaps.

Short Version

To have your tests curved in this class, you need to complete the lecture activities.

Additionally, I cannot know if you are learning the material if you do not complete the activities in Moodle. If Moodle logs show that you are not completing the lecture activities, I will assume you are not watching the lectures.

Examples

Suppose you earn a test subscore on Sequences and Series of 62, and that the maximum amount of curve points available to you is 10. (This number has been randomly chosen for this demonstration and is not a set number available to all students. Curves are based on a formula built in to Moodle and they scale relative to the raw score. A raw score of 100 earns 2 curve points.)

- If your average is at least 80% for the SaS Lecture Activity Score, then your curved test subscore is 62 + 10 = 72.
- If you have a 74% for the SaS Lecture Activity Score, then your curved test subscore is 62 + ceil(0.74·10) = 62 + 8 = 70.
- If you have a 40% for the SaS Lecture Activity Score, then your curved test subscore is 62 + ceil(0.40·10) = 62 + 4 = 66.
- If you did not complete any of the Lecture Activities, then your test subscore is 62. Not completing the lectures in Moodle means not getting your tests curved.

You can raise your Activity Score to the 80% mark at any point in the semester before grades are submitted. As you do so, you will see your subscores automatically and retroactively increase. *I will not adjust scoring mishaps for lectures watched after the last day of class.*

For example, if you are the student above and you earned 0% of the curve (and therefore got an Sequences and Series subscore of 62), if you complete all of the lectures and do well enough, the Moodle gradebook would automatically raise your score from 62 to 72.

Classroom Expectations

1. **Course Structure:** This is an online class; you are responsible for your own learning and for pacing yourself within course guidelines.
    - Watch the video lectures scheduled each week and follow the Course Calendar.
    - Track all due dates in Moodle and on the Course Calendar.
    - Complete all assignments in a timely fashion.
    - Post your math questions in the course forum for discussions and Q&A.
    - Optional: attend live sessions.
2. **Communication and announcements:** Please check your email, the course forum, and the Moodle site regularly. All announcements sent by email will also be saved under Announcements on Moodle. You are responsible for knowing the content of course emails.
3. **Respect and professionalism:** Treat everyone in class (students and instructor) with respect and courtesy. Be active and prepared in any live sessions. Come to office hours ready to ask questions and communicate with others.
4. **Accountability:** You are responsible for resolving any confusion about assignments, due dates, exams, accommodations, etc., in a prompt manner.
5. **Academic integrity:** Do not submit work that is not yours. It is understood that your name on any assignment indicates your adherence to the NC State Honor Pledge: "I have neither given nor received unauthorized aid on this test or assignment."

6. **Exam device policy:** Review the permitted items before each exam. Keep phones and other forbidden devices powered off and stored away during exams to avoid accidental use.

Student Success

Student well-being is important to success at NC State. Every student, faculty member, and staff member enriches the community through varied perspectives, knowledge, and experience. Our classroom should be a space where every student is respected and heard.

In an effort to affirm and respect the identities of all 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 welcome any suggestions you have for making our classroom more welcoming.

Grading

Grade Weighting and Numerical Conversion

Your grade will be determined by the following breakdown:

- Yellowdig, 6%
- WebAssign Homework: 24%
- Test Score: 70% total
    - Foundations of Calculus, 6%
    - Applications of Integration, 10%
    - Techniques of Integrations, 15%
    - Sequences of Series, 15%
    - Power Series, 8%
    - 1st Order Differential Equations, 10%
    - 2nd Order Differential Equations, 6%

Grades are tracked in real-time in the Moodle **Gradebook**.

Conversion from Numerical Grade to Letter Grade

A student's numerical average will be converted to a letter grade as follows (do not expect any additional rounding, extra credit, or curves):

Standard Conversion
Table

Grade	Range
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
F	0-59

Requirements for Credit-Only (S/U) Grading

In order to receive a grade of S, students are required to take all exams, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to REG 02.20.15 - Credit-Only Courses.

It is the student's responsibility to check if an S grade gives progress towards their degree(s).

Requirements for Auditors (AU)

Information about and requirements for auditing a course can be found at REG 02.20.04 - Audits.

Policies on Incomplete Grades

NC State Policy

At the discretion of the instructor, students may be given an IN grade for work not completed because of a serious interruption in their work not caused by their own negligence. An IN must not be used, however, as a substitute for an F when the student's performance in the course is deserving of failing. An IN is only

appropriate when the student's record in the course is such that the successful completion of particular assignments, projects, or tests missed as a result of a documented serious event would enable that student to pass the course.

If an extended deadline is not authorized by the 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 an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. See the university policy on incomplete grades: REG 02.50.03 - Grades and Grade Point Average.

My individual policy on incomplete grades

For reference, here is a common statement at other institutions:

> The grade of IN denotes an incomplete grade for the course, and will be awarded only when the student has done satisfactory work up to the last two weeks of the semester, but for nonacademic reasons beyond their control is unable to meet the full requirements of the course.

As an incomplete grade is solely at my discretion, here is the criteria I used when assessing a request for an incomplete grade:

- A grade of IN is given only because of documented serious interruption. It is not given because of general difficulties completing the semester due to a heavy workload. I may ask to speak with your advisor about the IN request.
- The events affecting the student's ability to complete assignments must be fully documented (e.g. doctor's note with contact information, obituary). You should provide this documentation by the day following the last day of the Final Exam.
- The interruption should not occur before the drop/revision date of the semester. This semester, that date is 10/23.
- The student's Moodle activity log should show regular course participation up to the documented event. The course log should not show multiple lapses in participation (for example, more than two regular semester weeks with no meaningful activity).
- The student's cumulative grade in the gradebook should be at least 50 by the last day of class.
- As the intention of an IN grade is to enable a student to pass the course, IN grades are rarely appropriate if the student's end-of-semester grade is at least a C.

- An IN grade is a serious situation so that the student may pass the class. Homework and class participation (e.g. Yellowdig) are not extended, only test grades may be made up. Given the way examinations in this course is structured, the student should be able to pass this course by making up (at a maximum) one test and the final exam.
- Failure to schedule the Final Exam at an appropriate time is not a "documented serious event." This act results in a 0 on Final Exam subscores. Due to how test scores are computed in this class, the sole act of missing the Final Exam is not a reason that a student does not pass this course. An IN is therefore never appropriate due to a scheduling mistake.

How to Proceed with an Incomplete Grade

If all of the above requirements are met and an incomplete grade is deemed appropriate, here is the expected course of action:

1. To initiate a conversation about the IN grade, use the Email Me forum.
2. Exams must be able to be made up with an approved proctor or at DELTA before the end of the next semester. Meazure Learning/Proctor U is not an option.
3. If an IN grade is administered, it is the student's responsibility to schedule and make-up their work. The instructor will not initiate anything without contact from the student.
    - All exam appointments must be scheduled by the Drop/Revision day of the following regular-year semester (following the original semester). Waiting too long to schedule makeups exams may mean that no testing appointments are available. This situation will cause the IN grade to become an F.
    - To allow me time to assess and submit your grade change to MyPack, the student must make up missing exams by the (first) Reading Day of the following semester.
    - After completing the missing one or two exams, the student must alert me directly by regular email that graded assignments are ready. The student should include a direct link (URL) to the Moodle site where the exam(s) is/are located.
4. The Moodle site may become unavailable except for the tests needed. Preparation materials, lessons, etc. may no longer be available. I will not meet to teach or review any concepts. (My course videos remain available to all on YouTube.)
5. The student will not receive any exam feedback.

Course Schedule

Here is a link to the Google calendar for this course:

- Spring semester calendar · Subscribe in Google Calendar

The course schedule is tentative and subject to change. Adjustments may be made to accommodate the pace of the class and unforeseen circumstances. All major changes will be announced in class and posted on Moodle.

Important Dates

For holidays and other university closures, please consult the general NC State Academic Calendar.

Your final exam schedule is already determined; find it here: NC State Final Exam Calendar. You are responsible for reviewing your final exam sessions to arrange a suitable time for this course.

List of Topics

Here are the major topics of MA 241, with the approximate regular-semester time allocated to each:

- Unit 0: Foundations of Calculus (~1 week) Review of functions and graphs; algebraic/trigonometric identities; exponentials and logarithms; inverse trig; limits and continuity; basic antiderivatives, u-substitution, and integration-by-parts.
- Unit 1: Techniques of Integration (~3 weeks) Trigonometric integrals; trigonometric substitution; partial fractions (proper/improper, repeated/irreducible quadratics); numerical integration (Midpoint/Trapezoid/Simpson); improper integrals.
- Unit 2: Applications of Integration (~2 weeks) Arc length; average value of a function; work (variable force, pumping fluids, springs); fluid pressure/force (hydrostatics); moments and centers of mass.
- Unit 3 (two parts): Sequences and Series (~4 weeks)
    - Part 1 — Sequences & Series Basics: Sequences and limits; monotone and bounded sequences; infinite series; geometric and telescoping series; integral test; comparison and limit comparison tests; alternating series and error bounds; the ratio rest and absolute vs. conditional convergence.
    - Part 2 — Power & Taylor Series: Power series and intervals/radii of convergence; differentiation and integration of power series; Taylor and Maclaurin series; common expansions; function approximation.

- Unit 4 (two parts): Differential Equations (~4 weeks)
    - Part 1 — First-Order Models: Slope fields; Euler's Method; separable equations; exponential growth/decay; logistic models; qualitative analysis.
    - Part 2 — Second-Order Linear ODEs: Constant-coefficient homogeneous equations; characteristic equation (real, repeated, complex roots); particular solutions by undetermined coefficients (polynomial, exponential, sinusoidal forcing); mechanical vibrations and resonance; initial value problems.

Course Continuity

To ensure course continuity, changes made to the method of instructional delivery, course structure, course schedule, number of assignments, grading or other aspects of the course after the start of the term will be communicated to all students in written form (e.g., by an instructor announcement) when course changes are implemented.

Additional Information

Student Expenses

If you participate in the Course Ready program, then this covers the cost of WebAssign for you. Otherwise, the cost of WebAssign is approximately $87.95 for this class. To access WebAssign for the first time, please click on the first link in the WebAssign Homework Section. You will need to log into your Cengage account (or create an account). Do not create a new account if you already have a Cengage account.

Late Assignments

For WebAssign homework, you may take extensions on an assignment up to exactly 7 days after the assignment's original due date/time. You may take as many extensions as you wish during this 7 day extension period window.

Each extension lasts for 24 hours OR until the assignment is exactly 7 days past due, whichever comes first. To extend beyond 24 hours, you must wait for the original 24 hours to expire.

You will receive full credit for any answers you get correct before the original due date. Any work completed during the extension period will incur a penalty of -20%.

Note that these 7 days may include weekends, holidays, etc. The extension period is always for exactly one calendar week.

It may be possible in Cengage to extend due dates for the last few assignments beyond the time when I submit grades to MyPack. However, work completed after grades are submitted will not contribute to your semester grade. Please ensure that you have made up any extended work by your final exam.

Submission Timing and Availability Policy

Assignments are due by 11:00 pm on the posted due date. I am happy to help with technical questions, but please note that I am generally only available for troubleshooting until 5:00 pm on due dates.

To reduce stress and avoid last-minute issues, I strongly encourage you to begin and finish your homework well before 5:00 pm. Starting early gives you time to ask questions and ensures that unexpected problems—such as internet outages or system issues—do not interfere with submitting your work on time.

Because last-minute technical problems are often unavoidable but difficult to resolve after hours, extensions cannot be granted for issues that arise in the evening. Moodle access logs are reviewed when extension requests are submitted, and if the logs show that the homework was first accessed on the due date, an extension will generally not be possible.

In short, planning ahead is the best way to protect your work and your grade. Summary:

- Due time: 11:00 pm on the listed due date
- Best practice: aim to complete work before 5:00 pm
- Extensions: generally not available if work is first accessed on the due date.

For longer-term, recurring, or more serious illness or other interruptions to your participation in this class, you should reach out to your instructor as soon as you can.

Late Examinations

Excused absense. If an exam is missed with an excused absence (that is, for a university-approved reason with supporting documentation), then a make-up test will be scheduled individually. The make-up test may contain different questions and be assessed differently than the regular test. Documentation for an excused absence must be provided within 1 week of the missed class. All absences that require a make-up exam or other special accommodations must go through the

NC State University absence verification process. Here is the link to that office: NC State Absence Verification.

Failure to schedule. You must schedule exams in a timely fashion to guarantee that you will be able to take them. It is the instructor's discretion whether a make-up exam will be allowed if you are not able to schedule an exam appointment within the selected time frame. If the instructor approves a make-up exam, there may be a 10% penalty on that exam. The make-up test may contain different questions and be assessed differently than the regular test.

Other absences. If an exam is missed for an unexcused absence, that exam will be given a score of 0.

Attendance

Since this course is an asynchronous online course, there is no daily attendance. Instead, each student's participation in Moodle is tracked to check for regular activity. For complete attendance and excused absence policies, please see Attendance Regulations (NCSU REG 02.20.03).

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct (NCSU POL11.35.01). Your submission of any exam indicates "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).

Posting any course material to websites like Chegg, ChatGPT, and Course Hero is a violation of copyright law and course policy and is strictly prohibited. Violations of this policy will be reported to the Office of Student Conduct.

- Tests: Proctored tests are closed book assessments. You may not consult any internet resources nor receive help from anyone else. Do not share information about the content on the exams with anyone else in the class. See the calculator policy in the Test Information section of this syllabus.
- Homework: You may consult your notes, the textbook, each other, or online resources.
- Forum discussion boards: You are encouraged to discuss mathematical concepts and problems with your classmates. However, you must arrive at your own solutions with your own work. Do not seek nor state final answers on the forum; focus on understanding the concepts.

Disability Resources

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 (NCSU REG 02.20.01).

Students who receive accommodations are responsible for filing those accommodations officially with DRO before the tests occur. It is not appropriate to tell the instructor that you should receive accommodations without going through the official channels. The instructor will only adjust test conditions after receiving the official Accommodation Letter Notification from DRO. Adjustments are never made retroactively to past examinations.

Digital Course Components

Because of the way our course is structured, students need internet connectivity in order to read course materials and complete assignments. NC State's Online and Distance Education provides technology requirements and recommendations for computer hardware.

For access to computing hardware, please see the NC State University Libraries Technology Lending and the general Library Computing resources. There are several computers available for use around campus, including in the Mathematics Tutoring Center.

Digitally hosted course components will include but are not limited to Moodle and Zoom.

Software

There are several resources available to assist students with technical or computer issues. Please consult Office of Information Technology - NC State University.

Here are some of the primary applications commonly used in online mathematics courses:

- Moodle and Wolfware: Our course is hosted online on Moodle, where you can find the course content, a link to this syllabus, and the gradebook.
    - Moodle Accessibility Statement

    - Moodle Privacy Notice
    - NC State WolfWare Privacy Statement

- YouTube: My videos are hosted on YouTube.

    - Use YouTube with a screen reader (from Google).
    - YouTube Privacy Policy

- Panopto: NC State uses Panopto for video hosting.

    - Panopto Accessibility Features
    - Panopto Privacy Policy
    - Panopto Support

- WebAssign from Cengage: We will use WebAssign for homework.

    - WebAssign Accessibility Statement
    - WebAssign Privacy Policy

- WebWork: We will use WebWork for online exercises.

    - WebWork Accessibility Guide
    - WebWork Privacy Policy

- Yellowdig: this site hosts our class forum and is a graded component of the course. You will use **Yellowdig** to ask questions regarding the lecture or homework.

    - Yellowdig Accessibility Statement
    - Yellowdig Privacy Policy
    - Yellowdig Help Center

- Google Meet: when needed.

    - Google Meet Accessibility features
    - Google Meet Security and Privacy
    - Google Meet Help

- Zoom: when needed.

    - Zoom Accessibility Statement
    - Zoom Privacy Policy
    - Zoom Support

You must address the accessibility of these websites for yourself during the course drop/add period.

The instructor is not responsible for ensuring privacy or accessibility of electronic materials that are not required components of the course (e.g., links to supplemental information that is not part of the required reading list). However, the instructor will judiciously consider the privacy, copyright, and accessibility of supplemental links provided to students and warn them of any known issues or concerns in this regard. See Online Course Material Host Requirements (NCSU REG 08.00.11).

Electronically Hosted Components

Please be advised that live meetings for this course may be recorded for current and potential future educational purposes. By your continued participation in this recorded course, you are providing your permission to be recorded. If you would like for your likeness to be edited out of a recorded video, please contact me and I will edit the video accordingly.

Required Statement

Students may be required to disclose personally identifiable information to other students in the course, via digital tools, such as 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.

Additional NC State Rules and Regulations

Your rights and responsibilities

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, POL 04.25.05 - Equal Opportunity and Nondiscrimination Policy
  with additional references at NC State Office of Equal Opportunity
- Code of Student Conduct, POL 11.35.01 - Student Conduct
- Grades and Grade Point Average, REG 02.50.03 - Grades and Grade Point Average
- Credit-Only Courses, REG 02.20.15 - Credit-Only Courses
- Audits, REG 02.20.04 - Audits

Non-Discrimination Policy

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at

POL 04.25.05 - Equal Opportunity and Nondiscrimination Policy or the Office of Equal Opportunity

Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Support

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:

1. Counseling Center
2. Health Center
3. Share a Concern
4. Pack Essentials

Course Evaluations

ClassEval is the end-of-semester survey for students to evaluate instruction of all university classes. The current survey is administered online and includes 12 closed-ended questions and 3 open-ended questions. Deans, department heads, and instructors may add a limited number of their own questions to these 15 common-core questions.

Each semester students' responses are compiled into a ClassEval report for every instructor and class. Instructors use the evaluations to improve instruction and include them in their promotion and tenure dossiers, while department heads

use them in annual reviews. The reports are included in instructors' personnel files and are considered confidential.

Online class evaluations will be available for students to complete during the last two weeks of the semester for full semester courses and the last week of shorter sessions. Students will receive an email directing them to a website to complete class evaluations. These become unavailable at 8am on the first day of finals.

- Contact ClassEval Help Desk
- ClassEval website
- Information about ClassEval and how the information is used

Required statement

This course engages diverse scholarly perspectives to develop critical thinking, analysis, and debate and inclusion of a reading does not imply endorsement. *This statement is required per UNC Policy Manual 400.1.6, adopted 12/19/2025.*

Syllabus Modification Statement

Our syllabus represents a flexible agreement. It outlines the topics we will cover and the order we will cover them in. Minor changes in the syllabus can occur if we need to slow down or speed up the pace of instruction.

This syllabus was designed by Bevin Maultsby to meet the standards in REG 02.20.07 (Last Revised: May 27, 2020), found at NC State REG 02.20.07 - Course Syllabus according to the May 27, 2020 revision.

Department of Mathematics · NC State University