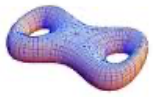
MATH 122: Calculus 2
Spring 2025

Contact Me	Meet with Me	Class Info
		
Name: Dr. Maggie **Pronouns:** She/Her/Hers **Email:** rahmoeller@roanoke.edu	**Office:** Trexler 270B **Student Hours:** Tues 2:00-3:30PM Thurs 9:30-11:00AM	**Location:** Miller 113 **Days:** MWF **Time:** Section A, 1:10 – 2:10PM Section B, 2:20 – 3:20PM

Student Hours Comments:

- The given times above will be consistently available unless emergencies arise
- These are opportunities for you to ask me questions about material and/or class, including celebrations and concerns. **Please come prepared to ask your questions!**
- It's always ok to pop by and say, "HI!" – I love getting to know you and chatting with you! But, these have to be short, fun visits ☺ Sadly, none of us have time to sit back and chill anymore. But – please pop by any time for a short 5-10 minute hello. And – never be afraid to come by if you need help ☺

Course Description: This course provides a continuation of the study of calculus. Topics to be studied include applications and techniques of integration, applications, and the calculus of functions of several variables, and sequences and series and their applications.

Intended Learning Outcomes: By the end of this course, you will be able to:

- apply the theory of differentiation and integration to model and solve real-world problems.
- recognize a differential equation and be able to both solve basic differential equations and discuss what a differential equation tells you about the process it models.
- determine the behavior of infinite series and understand the role of power series and Taylor series in modern mathematics.
- understand functions of several variables and their applications.
- recognize the role of technology in Calculus, understand when it should be used, and be aware of its limitations.

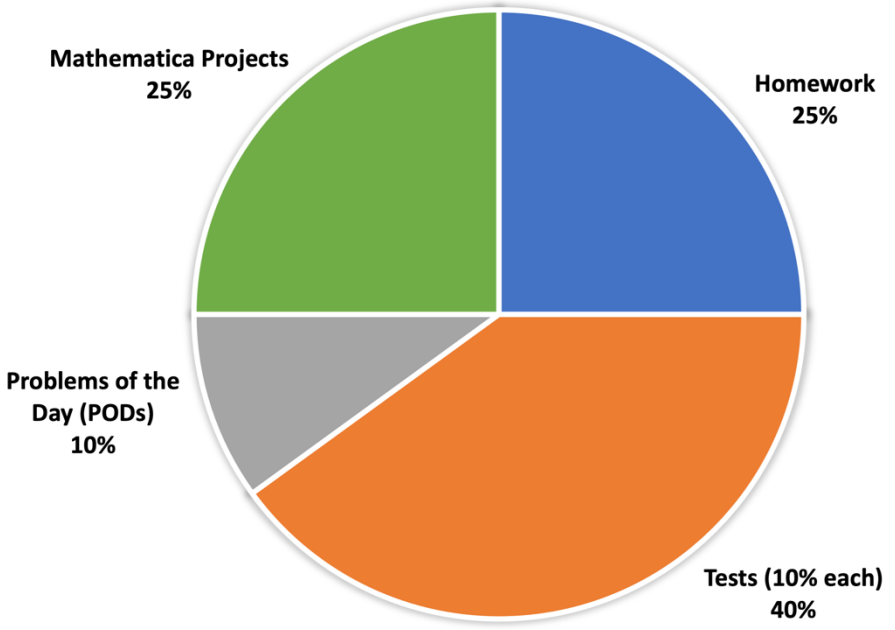
Your success in this class is important to me! We all learn differently and bring a variety of strengths and needs to the class. If there are aspects of the course that prevent you from learning or that make you feel excluded, please let me know as soon as possible. Together we'll develop strategies to meet both your needs and the requirements of the course.

Required Materials:

- *Calculus: Early Transcendental Functions*, Smith & Minton, 4th edition
- Any scientific or graphing calculator
- A laptop computer with Mathematica installed, or access to Mathematica
- *MyOpenMath*: Homework can be accessed through the MyOpenMath link on Inquire

Commitment Hours: This course expects you to spend at least 12 hours of work a week inside and outside of class.

GRADE DISTRIBUTION:



A:	93-100	B:	83-87	C:	73-77	D:	63-67
A-:	90-93	B-:	80-83	C-:	70-73	D-:	60-63
B+:	87-90	C+:	77-80	D+:	67-70	F:	Below 60

COURSE EXPECTATIONS

Classroom Environment: You are expected to treat all students in the class and me with courtesy and respect. Your comments to others should be factual, constructive, and free from harassing statements. You are encouraged to disagree with other students, but such disagreements need to be based upon facts and documentation (rather than prejudices and personalities). My goal is to promote an atmosphere of mutual respect in the classroom. Please let me know if you have suggestions for improving the classroom environment. (Source: Iowa State University)

Diversity and Inclusivity

I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

Attendance Policy: Our course's success depends on you attending class! If you miss class, you will miss community building, engaging conversations, and information that I deem worthy of your time! Plus, we will miss you!

However, life happens! You may get sick, have a game scheduled, or have something else come up. It will not be the end of the world if you miss a class *very occasionally*. At some point, though, missing class can be detrimental to success. So, do your best to be in class! Strive for perfect attendance!

Communication is key. Let me know as soon as you know you will miss class.

****I WANT YOU TO SUCCEED IN MY CLASS****

I am willing to put in as much effort to help you in my class as you put into my class. So, do the work, come to office hours, attend subject tutoring, ask questions, and do a little MATH 122 every day.

Inquire Policy: You are responsible for:

- **Being aware of all postings on Inquire:** you need to check Inquire for course information every day!
- **Uploading your assignments to Inquire:** anything due on Inquire will not be accepted in any other form.
- **Making and checking successful submissions:** to receive credit for uploads, your file must be readable on the instructor's college computer.
- **Resolving technology problems:** through our Information Technology (IT) department.

Academic Integrity: I expect all of you to follow the Academic Integrity policies of Roanoke College (https://www.roanoke.edu/inside/a-z_index/academic_integrity). All work submitted for a grade must be your own (for instance, you cannot use internet resources aside from videos/resources linked on Inquire and, if you do work and study with others, the final write-up must be done by yourself). If you ever have questions about how these policies apply to our class, please contact me. Any violations of our Academic Integrity policies will automatically be turned over to the Academic Integrity Council.

Artificial Intelligence: There are situations when the use of generative Artificial Intelligence may be appropriate and educational. If you believe that your use of generative Artificial Intelligence is appropriate for a given assignment, please contact me (via email, or in person at least 3 days before the due date) to explain your rationale for its use. No use is permitted without prior permission.

WHY? You spend a lot of money attending Roanoke College working toward a (or several) degree(s). Don't you want that degree to mean something? If RC students are only getting degrees by cheating, then does that degree actually mean anything? If we were to get a reputation for a "cheating" school…do you think you'd get a job after Roanoke College?

COURSE ASSIGNMENTS & LATE POLICIES

Interactive Textbook Reading: You should attempt as many of the problems in the book as possible. All odd-numbered problems have answers in the back of the book. Remember, reading a math textbook must be done interactively. Try the examples and work through problems at the end of each section.

Homework: There will be one homework assignment after nearly every lecture. These assignments are on our class's MyOpenMath page. All work submitted for a grade must be your own (for instance, you cannot use internet resources aside from videos linked on Inquire and, if you do work and study with others, the final write-up must be done by yourself). **You will be granted 5 late passes at the beginning of the semester.** You may apply these to any of the online assignments for an **automatic 24-hour extension** with no late penalty. Note that if you try to use a late pass on an assignment that was due say 14 days prior, you will not be able to as you would need an extension of over 14 days. You therefore need to keep up with the online homework.

MCSP Conversations Series: The MCSP department offers a series of talks designed to appeal to a broad audience. Members of this class are encouraged to attend many of these meetings, however attending **at least one session is mandatory**. The schedule for the talks is posted on Inquire. Within one week of attendance you must submit a response to the talk (1/3 of response is allowed to be summary of talk, the other 2/3 is to be about what you learned about yourself form attending the talk and how you will apply what you learned to your future – total length of about 1 page). This will count towards your Homework grade.

PODs: We will start nearly every class with a Problem of the Day (POD). You will have about 5 minutes to complete the problem and you can use your notes (not computer) for assistance. **PODs cannot be made up for unexcused absences.** At the end of the semester, your lowest three POD grades will be dropped.

Mathematica: In addition to the homework, we will occasionally have assignments based in Mathematica. Mathematica is a powerful software package that we will use throughout the class to

help emphasize calculus concepts over needing to compute, say, derivatives and integrals by hand every time we need them. This software will let us spend more time on the "how and why" of calculus and how it can be applied in the future. **Late work will be accepted but loses .5 percentage points for every hour (or partial hour) past the deadline.**

Tests: Four tests will be given throughout the semester according to the schedule on the last pages of the syllabus (any changes from this schedule will be announced well in advance). Each test will focus primarily on the material learned since the last test, but approximately 30% of each test will cover material from the previous test. Should you do well on this old material section, it could help improve your previous test score. Why do this? To alleviate test anxiety / stress (you have another chance to improve your grade) and to allow you more time to master concepts (we don't all learn everything quickly – would be nice if we did, right?).

Test Make-up Policy: Anticipated, excused absences must be reported to the instructor with appropriate certification **well before** the scheduled test date. Legitimate emergency absences must be reported with appropriate documentation **within one week of returning to class**. No other make-ups will be given.

Final Exam Time Slot: Your final exam time slot is scheduled for either Thursday, April 24 from 2-5PM OR Saturday, April 26 from 8:30-11:30AM. We will use the final exam as an opportunity to improve your test grades by demonstrating mastery of concepts from the semester.

****In summary, the best thing you can do is *communicate* with me.** Let me know if you have concerns about turning in an assignment on time – I will do my best to work with you.**

MCSP Tea Time

Tuesdays, 2:20 – 3:20PM
Trexler 271

A chance to chill with peeps while munching on cookies and sipping tea! Often cards make an appearance – or other games! Take an opportunity to relax, have fun, and hang with other students and professors!

RESOURCES

Accessible Education Services (AES) is located in the Goode-Pasfield Center for Learning and Teaching in **Fintel Library**. AES provides reasonable accommodations to students with documented disabilities. To register for services, students must self-identify to AES, complete the registration process, and provide current documentation of a disability along with recommendations from the qualified specialist. Please contact Dustin Persinger, Assistant Director of Academic Services for Accessible Education, at 540-375-2247 or by e-mail at aes@roanoke.edu to schedule an appointment. If you have registered with AES in the past and would like to receive academic accommodations for this semester, please contact Dustin Persinger at your earliest convenience to schedule an appointment and/or obtain your accommodation letter for the current semester.

Subject Tutoring, located on the lower level of Fintel Library (Room 5), is open 4-9 PM, Sunday-Thursday. Subject Tutors are highly trained, current students who offer free, one-on-one (and small group) tutorials in over 80 courses taught at Roanoke College, including: Business, Economics, Mathematics, INQ 240, Modern Languages, Lab Sciences, and Social Sciences. Check out all available subjects and schedule 30- or 60-minute appointments at www.roanoke.edu/tutoring. If you have a question, feel free to stop by, or contact us at subject_tutoring@roanoke.edu or 540-375-2590. See you soon!

Student Health & Counseling Services supports students through in-person health appointments, in-person counseling, 24/7 telehealth (TimelyCare), Therapy Assistance Online, as well as resources related to general wellness, LGBTQ+, sexual assault, substance abuse, and suicide prevention. Unmet health needs can negatively impact your performance in this course. Student Health & Counseling Services can help. Please see https://www.roanoke.edu/shcs for more information and to access services.

TENTATIVE COURSE SCHEDULE

Day	Date	Section	Topic	Due
Mon	Jan 13		Calc 1 Review	
Wed	Jan 15	5.5	Projectile Motion	
Fri	Jan 17	5.6	Work	
Mon	Jan 20		**No Class!**	
Wed	Jan 22	5.6	**No In-Person Class – watch videos & do assignments out of class** Mass and Force	
Fri	Jan 24	5.6	Worksheet	
Mon	Jan 27	6.2	Integration by Parts	M1
Wed	Jan 29	5.7	Probability	
Wed	Jan 31	6.6	Improper Integrals	
Mon	Feb 3	6.6	Improper Integrals	
Wed	Feb 5		Review	
Fri	Feb 7		**Test 1**	
Mon	Feb 10	12.1	Functions of Several Variables	M2
Wed	Feb 12	12.2	Limits and Continuity	
Fri	Feb 14	12.3	Partial Derivatives	
Mon	Feb 17	12.4	Tangent Planes & Linear Approximation	
Wed	Feb 19	12.7	Extrema of Functions of Several Variables	
Fri	Feb 21	12.7	Extrema of Functions of Several Variables	
Mon	Feb 24	13.0	Partial Antiderivatives	
Wed	Feb 26		Review	
Fri	Feb 28		**Test 2**	
SPRING BREAK!!				
Mon	Mar 10	13.1	Double Integrals	M3
Wed	Mar 12	13.1	Double Integrals	
Fri	Mar 14	13.2	Area	
Mon	Mar 17	13.2	Volume	
Wed	Mar 19	13.2	Center of Mass	
Fri	Mar 21	9.4	Polar Coordinates	
Mon	Mar 24	13.3	Double Integrals in Polar Coordinates	
Wed	Mar 26	13.3	Double Integrals in Polar Coordinates	M4
Fri	Mar 28		**Test 3**	

Mon	Mar 31	8.1	Sequences of Real Numbers		
Wed	Apr 2	8.2	Infinite Series		
Fri	Apr 4	8.3	Integral and Comparison Test		
Mon	Apr 7	8.4	Alternating Series		
Wed	Apr 9	8.5	Absolute Convergence and the Ratio Test		M5
Fri	Apr 11		**NO CLASS!**		
Mon	Apr 14	8.6	Power Series		
Wed	Apr 16	8.7	Taylor Series		
Fri	Apr 18		**NO CLASS!**		
Mon	Apr 21	8.8	Applications of Taylor Series		
Tue	Apr 22		**Test 4**		M6
Thurs	April 24	Section B	2:00 – 5:00 PM	**FINAL EXAM!**	
Sat	April 26	Section A	8:30 – 11:30 AM		