MAT 341: Calculus III

Spring 2026

Instructor:	Jared McBride	**Time:**	MWF 12:30 – 1:20 PM
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"Character is the aim of true education; and science, history, and literature are but means used to accomplish the desired end. Character is not the result of chance work but of continuous right thinking and right acting. . . . True education seeks, then to make men and women not only good mathematicians, proficient linguists, profound scientists, or brilliant literary lights, but also honest men, combined with virtue, temperance, and brotherly love — men and women who prize truth, justice, wisdom, benevolence, and self-control as the choicest acquisitions of a successful life. . . . It is regrettable, not to say deplorable, that modern education so little emphasizes these fundamental elements of true character. The principal aim of many of our schools and colleges seems to be to give the students purely intellectual attainments and to give but passing regard to the nobler and more necessary development along moral lines."

—David O. McKay
(*Gospel Ideals*, p. 440)

Information for all my students

Student Hours: Student hours are like office hours but they are not in my office. They are held, instead, right next door in the Magnolia Hall conference room (Magnolia Hall 109). They are at these times:

Tuesday and Thursday from 12:00 PM to 4:00 PM.

or by appointment. If you can't make student hours physically but can drop in on Zoom, please let me know before hand. The Zoom link will be https://zoom.us/my/drmcbsvu. Please, feel free to drop in with your questions. No appointment is necessary.

If you have a private matter to discuss, please make an appointment to see me. If it is quick (these things usually are) feel free to come to student hours and we can step into my office.

My tentative weekly schedule is as follows:

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 AM	MAT100	MAT221	MAT100	MAT221	MAT100
10:00 AM		MAT221		MAT221	
11:00 AM	MAT221		MAT221		FORUM
12:00 PM	MAT341	Student Hours	MAT341	Student Hours	MAT341
1:00 PM	MAT343	Student Hours	MAT343	Student Hours	MAT343
2:00 PM	MAT343	Student Hours	MAT343	Student Hours	MAT343
3:00 PM		Student Hours		Student Hours	
4:00 PM					

AI Use Policy: The purpose of this course is to help you develop both skills and deep understanding, especially of mathematical concepts. Homework and assignments are designed to give you the practice you need to build those skills.

Some students may be tempted to use AI tools to complete their work instead of working through problems themselves. This is like signing up for a weight training class but using a machine to do the lifting for you; you wouldn't build the strength you need. The same is true here: if AI does the work, you miss the chance to develop the understanding and skills necessary for success in this course and in future courses.

That said, AI can be a helpful learning aid when used appropriately. Think of it like using a box to assist with pull-ups: you can use the box to help you get above the bar, then slowly lower yourself to build strength. After a while, you'll be able to do pull-ups without the box. Similarly, you can use AI to help you get "unstuck" on a problem—by asking for hints, clarifications, or explanations of a concept, rather than simply asking for the full answer. This is using AI to facilitate your learning rather than rob you of the chance to learn. This is what I referr to as using AI wisely.

Illustrative examples:

- **Wise use:** You are working on the homework and there is a question that you have already worked on but you keep getting it wrong, even after going to your notes and checking your method. You ask ChatGPT the question and observe what it did differently, You try it again and get it right with that modification. You may a note of that in your notes so you get it right next time. Or you make a note to ask about it in class.
- **Unwise use:** You have not yet attempted a certain homwork question but becaue you are low on time you copy the question and ask chatgpt. Only some of the explincation makes sence or seems familiar to you, but you submitt it anyway. This is dishonest and not acceptable.

In this course, the policies for AI use is to use it wisely, which often means not using it at all. Also, the use of AI on any quiz or test of any kind is prohibitated.

If you rely on AI to do the work for you, you may finish assignments faster, but it is unlikely that you will develop the skills you need to succeed.

Policies Specific to MAT 341: Calculus III

Since this is a major course, I feel it is important to give students ample opportunities and resources to develop their skills as independent learners. In my experience, one characteristic that sets math majors apart from other students is their ability to assimilate complex procedures and concepts in a short period of time. For better or worse, this ability is universally expected of math majors in both industry and academia. This is often referred to as a soft skill in graduate school, or as part of what is called the "hidden curriculum." My hope is that all of my students are well practiced in this skill by the time they graduate—so that they are not only capable of learning something on their own, but can do so effectively.

The way I attempt to foster this skill is by asking students to read the textbook before class. We then work through the section together during class time. Throughout this process, you will have ample opportunity to ask questions and—most importantly, in my opinion—to **discuss**, in your own words, what is happening. In doing so, we leverage the significant benefit of having a very small class size while we still have it. Each of you will have the opportunity to test and develop your understanding of the material through discussion with your peers and with me.

Textbook: We will be using *Calculus Volume 3* by Edwin Herman and Gilbert Strang through OpenStax. The book is available online and free.

Required Materials: Please have the following iPad Apps: Canvas Student, Desmos, and an app of your choosing that will scan/convert/export as PDF, such as Adobe Scan or CamScanner.

Course Description: Topics include conic, parametric equations, polar coordinators, vectors and the geometry of space, vector valued functions, function of several variables, multiple integration and vector analysis.

Prerequisites: MAT 242: Calculus II

Course Components and Grading Scheme:

Reading Quizzes	10%
Reading Guides	15%
Homework	25%
Toughloves	5%
3 Midterm Celebrations of Knowledge (15% each)	30%
Final	15%
Total	100%

(The percentages guarantee at least the following letter grades.)

A	93%	C+	77%
A-	90%	C	73%
B+	87%	C-	70%
B	83%	D+	67%
B-	80%	D	63%

Reading Quizzes: As mentioned above, this course emphasizes your development as an independent learner. To that end, you will be expected to read the textbook before class. To ensure that you are keeping up with the reading, there will be short reading quizzes given at the beginning of class on most days. These quizzes will be open book and open note. The purpose of these quizzes is to encourage

you to read the material before class so that you are prepared to engage with it during our class time together. **These quizzes are due before class will not be accepted if late, but I will drop the lowest three scores.**

Reading Guides: Each day we cover a topic, you will be provided with a reading guide. It is a document that goes over the associated section of the book and asks some questions about the material and gives you space to work out the examples. We will go through these together in class as part of our discussion. We will try to complete them in class, but if we don't you, the student, are responsible for filling in any parts of the reading guide we did not get to. **These guides are due at the beginning of the class after the class in which the topic treated and will be accepted late with a penalty of 5% per day.**

Homework: Homework will be assigned regularly throughout the semester. Homework will be submitted through Canvas as a PDF file. You may use any method you like to create the PDF, but I recommend using an app on your iPad such as Adobe Scan or CamScanner. You may also use a physical scanner if you have access to one. I do not recommend LaTeXsince this is a highly computational class (and not a proofs class). Please make sure that your work is neat and legible. **Homework is due at the beginning of class on the specified due date and will be accepted late with, again, a penalty of 5% per day. I will drop the lowest three homework scores.**

Toughloves: Since this class is so highly computational, you will be greatly benefitted by having certain key facts and procedures memorized. To guide and encourage you to do this, there will be a few quizzes throughout the semester that will be focused on memorization and quick recall of key facts and procedures. These quizzes will be closed book, closed note, timed, and proctored in the testing center. You may retake these quizzes as many times as you like until you achieve mastery. You will be provided with a list of each fact you will be expected to have memorized. This will also serve as a useful reference sheet for you throughout the semester. Expect about 5 to 10 facts per chapter and a quiz each chapter. **Each quiz will have an initial due date, If you fail to attempt the quiz before that due date you will receive a 25% penalty on your highest score for that quiz.**

Late Work: I do accept some late work, here is a summary of my late work policies:

- Reading Quizzes: No late work accepted, but I drop the lowest three scores.
- Reading Guides: Accepted late with a penalty of 5% per day.
- Homework: Accepted late with a penalty of 5% per day, and
- The cut-off date for late work is the scheduled Reading Day at 11:59 PM. No exceptions.

Midterm Celebrations of Knowledge: You have worked hard learning this difficult material. Three times during the semester we will take a day to see how far you have come. This will be done with a midterm exam which I will refer to as a *celebration of knowledge*. Now, don't let this Orwellian newspeak fool you, a celebration of knowledge is nothing more than an exam with a happier sounding name. But your score on this exam will clearly demonstrate to me and to you how very much you have learned, giving us cause to celebrate.

There will be three midterm celebrations of knowledge throughout the semester. Each will be on closed note, closed book, paper-pencil, in-class assessments. The class before a Celebration of knowledge will be used as a review session.

Final: This will be a comprehensive in-class exam, taking place on Tuesday, April 28, 9:00 - 11:50 a.m.

Course Goals: Through completion of the course, you should be able to do the following:

- Be familiar with and use the various coordinate systems studied in the course. Particularly, know how to model position, motion and force in three dimensions.
- Understand the concepts and procedures associated with differentiable and integral calculus in several variables, including partial derivatives, multiple integrals, and vector calculus.
- Use these concepts and procedures to solve applied problems from a variety of disciplines, including physics and engineering. (The most significant of these applications is optimization in several variables.)

Student Learning Outcomes (SLO) for the Mathematics Major: Since this is a course for a Math majors. Here are the goals the SVU Math program has for each major. A student successfully completing this major will:

- Competently work with the concepts of calculus, differential equations, geometry, analysis, algebra, and statistics. (Foundation-Formulate)
- Learn to read, understand, analyze, and produce proofs at increasing depth. (Mathematical Proofs-Prove)
- Use appropriate technology to enhance mathematical thinking and understanding, solve mathematical problems, and judge the reasonableness of results. (Technology-Solve)
- Exhibit knowledge of formulating and solving problems, interpreting solutions, and modeling techniques central to applications of mathematics. (Mathematical Modeling -Model)
- Demonstrate the ability to effectively communicate mathematics and other quantitative ideas in written and oral forms. (Communication-Communicate)

Core Learning Goals (CLG): Here is a reminder of the goals SVU has for each graduate. Students completing Southern Virginia's core curriculum are expected to attain the following college-level competencies:

- *Careful Writing:* Students will be able to present arguments in clear written English with proper spelling, grammar, vocabulary, and transitions.
- *Critical Thinking:* Students will be able to separate a conclusion from its premises and evaluate how well the premises support the conclusion.

- *Analytic Reasoning:* Students will be able to evaluate a body of evidence and draw appropriate conclusions.

Core Values: Lastly, Here is a reminder of the values SVU endeavors to foster in each student. Students demonstrate:

- *Scholarship* by coming prepared to class, focusing on activities in class, and meticulously completing homework assignments.
- *Discipleship* by being respectful of others and showing courtesy and concern for others and the learning environment.
- *Accountability* by faithfully attending class and coming on time, coming prepared, being aware of assignments given and completing them on time.
- *Enthusiasm* by participating in class discussions and completing in-class activities, showing interest in cultural material and discussions about mathematics in general.
- *Refinement* by going above and beyond in living the dress and grooming standards, their manner of speech and actions, cleaning up the classroom and following proper classroom etiquette. This includes not using cell phones (texting, etc.) or other electronic devices that may disrupt learning in the class.

Title IX

Southern Virginia University is committed to providing an environment that promotes personal integrity, civility, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking.

Southern Virginia University, in compliance with Title IX, supports the academic success of pregnant students and students with pregnancy-related conditions (pregnancy, childbirth, termination of pregnancy, lactation, and all related medical conditions or recovery). Students may request reasonable, related modifications from the University by contacting the Title IX Coordinator at titleix@svu.edu.

Title IX of the Education Amendments of 1972 states that "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." Title IX applies to all employees and students and covers discrimination in programs, admissions, and activities.

You can report any concerns to the Title IX Coordinator, Nathan Friesema (titleix@svu.edu), your professor, the Wellness Center, or any university administrator. Please be aware that all instructors are mandated reporters, so by law, we must disclose details relayed to us about any possible Title IX infraction to the University's Title IX coordinator.

Accommodations: Southern Virginia University is committed to providing a learning environment that accommodates and supports students with disabilities through accommodations. The Office of Accessibility Services oversees Academic Accommodations. Students with any type of physical, medical, psychological, or emotional disability may be eligible - through the Americans with Disabilities Act (ADA) - to receive accommodations to provide equal access to the academic settings. Any student seeking accommodations should contact the Office of Accessibility Services by emailing accessibility@svu.edu. Students are advised to take care of the necessary documentation and paperwork early in the semester. Accommodations are not made until the student follows the procedures outlined on the website, (https://catalog.svu.edu/policies/accessibility-and-accommodations) receives an official accommodation letter AND discusses it with their professors.

Academic Honesty: Following the code of conduct, (https://svu.edu/about/faith/code-of-conduct/), students are expected to "be honest in all things, obey the law and follow university policies, and not cheat, steal, or plagiarize." The objective of every faculty member is to empower students by providing opportunities for learning in the best environment possible. If there are questions about what is honest or dishonest behavior, please speak to your professor. Violations of academic honesty are reported to the Office of the Provost and appeals are handled through the student grievance process.

Wellness: We are located on the second floor of Main Hall, Room 234. We are open from 8am to 5pm Monday to Friday. To schedule an appointment with a therapist please Call or Text 540-261-8474, email counseling@svu.edu, or stop by in-person. We strive to accommodate same-day appointments for urgent needs whenever possible.

For Mental Health Emergencies After Hours:

Please use any of the following options:

- **Call or text 988** — Suicide and Crisis Lifeline
- **1-855-222-2046** — Rockbridge Area Community Services Behavioral Health Hotline
- **540-261-4911** — SVU Campus Security
- **Visit the ER** — Carilion Rockbridge Community Hospital
  1 Health Circle, Lexington, VA 24450
- **Call 911**