Syllabus – Summer Session II 2026

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT (Blackboard).

Course and Instructor Information

Course Title: Multivariable Calculus
Credits: 4
Format: Fully Online, accessed via the learning management platform HuskyCT.
Prerequisites: MATH 1132Q or 1152Q or a score of 4 or 5 on the Advanced Placement Calculus BC exam. Recommended preparation: A grade of C- or better in MATH 1132Q. Not open for credit to students who have passed MATH 2130Q, or 2143Q.

Professors: Erin Rizzie, Ph.D.
Email: erin.rizzie@uconn.edu, (preferred method of contact)
Office: office hours will be held online, with a sign-up link available via HuskyCT. Video conference link (WebEx or Microsoft Teams) will be provided when you sign up for a time slot
Office Hours/Availability: Office hour appointments will be available at least three weekdays each week, excluding exam days. Same-day appointments will not be available, so please plan ahead and sign up for an appointment before midnight on the day before you want to see me. I aim to respond to questions via email or Campuswire within 24 hours on business days. Weekend response time will be slower.

Course Materials

Required course materials should be obtained before the first day of class.

Required Materials:

WebAssign and e-Book: WebAssign access is required in order to complete online homework for the course (one of your options for earning Practice Points, see below), and e-book access is included with WebAssign. The e-book can serve as an excellent study resource for further reading on all topics covered in the course. There are a wealth of practice problems at the end of each e-book section that can provide an invaluable tool for studying as well.

WebAssign access can be purchased directly through the WebAssign link in the Course Menu in HuskyCT. Do not buy an access code/card elsewhere as it is not guaranteed to work!

Optional Materials:

Item 1. Account on Campuswire (strongly encouraged, you can read and post anonymously!)

Item 2. Play-Doh (one small can will do, good for following along with occasional activity videos!)

Additional course readings and media are available within HuskyCT, through either an Internet link or Library Resources

Course Description

Three-dimensional space and coordinates, surfaces and graphs of equations, two- and three-dimensional vector algebra, differential calculus of functions of two or more variables and applications, double and triple integrals, coordinate transfer, parametric curves and surfaces, line and surface integrals.

Course Objectives

By the end of the semester, students should be able to:

1. Use three-dimensional Cartesian coordinates (including vectors and vector operations) to classify and distinguish between common equations and graphs of surfaces and curves.
2. Evaluate first and second partial derivatives of a multivariable function and relate these functions and their values to the behavior of a surface.
3. Use partial derivatives to determine equations of tangent planes, to locate and to classify critical points, and to calculate a rate of change of a surface in any direction.
4. Identify points in two-dimensional (Cartesian and polar) and three-dimensional (Cartesian, cylindrical, and spherical) coordinate systems and express common equations of surfaces and boundaries of regions in each system.
5. Write, reorder, evaluate, and interpret double and triple integrals of regions in the plane and space, respectively.
6. Set up, evaluate, and interpret line integrals of a scalar function or vector field over a given curve, applying famous results like the Fundamental Theorem for Line Integrals and Green's Theorem when appropriate.
7. Set up, evaluate, and interpret surface integrals of a scalar function or vector field over a given surface, applying famous results like Stokes' Theorem and the Divergence Theorem when appropriate.

Course Outline (See Course Calendar in Course for all Due Dates)

Module 1: Three-Dimensional Space (Sections 12.1-12.6)
Module 2: Differential Calculus in Two or More Variables (Sections 14.1, 14.3-14.8)
Module 3: Double Integrals (Sections 15.1-15.3)
Module 4: Triple Integrals (Sections 15.6-15.9)
Module 5: Parametric Curves and Line Integrals (Sections 13.1-13.3, 16.1-16.4)
Module 6: Parametric Surfaces and Surface Integrals (Sections 16.5-16.9)

Course Requirements and Grading

Summary of Course Grading:

Course Components	Weight
Practice Problem Points	25%
Exam I (Modules 1 & 2)	25%
Exam II (Modules 3 & 4)	25%
Exam III (Modules 5 & 6)	25%

Lecture Videos
In each module, you will need to watch several lecture videos, which are accessed through HuskyCT. This will replace the typical lecture component of a traditional in-person class. You should plan ahead to make sure you keep up with the lecture videos, and be sure to watch them actively. This means you will likely do a lot of pausing, working through examples, rewinding, and rewatching – so they will take much longer than the posted video times.

Practice Problem Points (PPP, 25% of final grade)

This component of your grade encompasses several options, a "choose your own adventure" type of practice style to suit your individual studying needs and goals. Each option below has an associated point value, and you do NOT lose points if an assignment is not completed; instead, your score is additive over the full course, and completing an assignment adds points to your total.

Your final percentage for this portion of your grade will be taken out of 100 points. Two important notes:

(1) there are more than 100 points available, so you can pick and choose what works best for you individually

(2) you will be allowed to earn up to 115 points total, which grants a small amount of extra credit in this component of your grade.

PPP Restrictions

In an effort to prevent anyone from working too far ahead in the course materials and to help keep everyone on pace with the course schedule, the following cap on PPP will be implemented:

- **Modules 1 & 2 – max of 45 PPP points (approximately 59 PPP points possible)**
- **Modules 3 & 4 – max of 25 PPP points (approximately 43 PPP points possible)**
- **Modules 5 & 6 – max of 45 PPP points (approximately 63 PPP points possible)**

Please note the approximate totals for each section do NOT include option 4 outlined below as those points can be earned in any module. Also, please note that once a due date has passed, you cannot go back and do those assignments. That is, no late work will be accepted for any PPP options below.

PPP Options

PPP points can be earned in the following ways. Please keep in mind the restrictions above. Some PPP options may also have a maximum total.

Option 1) WebAssign Assignments (2 points each)
In each module, you can complete assignments through WebAssign, which is accessed through HuskyCT. There are 30 graded assignments, each worth up to 2 points each; the points you earn are based on the problems completed correctly, and you do not have to complete the full assignment to get points. You can view your grades in HuskyCT anytime. WebAssign assignments for each module will be due while the module is open. Please see the course schedule for specific dates.

Option 2) Quizzes (2 points each)
There will be a quiz to complete each day of the course (there will not be quizzes that have to be completed over the weekends but some are due on Sundays). The quizzes are short and meant to help you see how you are understanding the previous day's material. I strongly encourage you to see what you can complete without the use of any resources like your notes, textbook, etc. Quizzes will be good preparation for the exams. Quizzes are located in the corresponding folders in the Learning Modules where all of the videos are located. Quizzes will be graded on completion, and solutions will be posted the day after each quiz is due.

Option 3) Practice Worksheets (2 points each)
There are practice worksheets posted for every topic covered in the course (some are combined into a single worksheet, like Practice With Vectors that covers 12.2, 12.3, and 12.4). In contrast to WebAssign, these problems help to hone your understanding of the concepts and generally involve more abstract questions and explanations, though there are also computational problems throughout. These will be graded on completion. Numerical solutions are provided on the second page for most problems- if a problem is a setup or sketch question, the solution is likely not provided since it would give away how to do the full question.

Option 4) Post on Campuswire (1 point each post, 12 points maximum)
If you ask a new, meaningful question on Campuswire and/or provide a thoughtful reply to a question asked by a peer, you will receive 1 practice point each time you do so, with a limit of 12 points total.

Option 5) Practice Exams (4 points each)
There will be a set of practice problems to help prepare for each exam. These will be due on the day of the exams and will be graded on completion.

Option 6) Attending Office Hours (1 point each, 5 points maximum per exam)
If you bring a meaningful question to office hours you will receive 1 point. Please note that you may need to make an appointment for office hours. Also be sure to confirm with the TA or instructor at the end of the meeting that you have earned the point. It is up the discretion of the TA or instructor if the meeting is sufficient to earn the point.

Exams (25% each, 75% total)

There will be **three** exams in this course.

There are two options to take the exams.

1) You may take the exam **proctored in person**, on the day of the exam on Campus at Storrs. The location and time of the exam will be announced as it approaches. (Likely in the afternoon.) Please note that you MUST inform the instructor at least two days before the exam takes place to take it in person. The instructor will then give you the time and location of the exam. The exam will be two hours in length.

2) You may take the exam **online using Lockdown Browser**. There will be two window periods on the day of the exam in which you can take the exam — one in the morning and one in the evening (Eastern time) on the date of the exam. The exact times the window will open and close will be announced as the exams approach. The window period will be for approximately four hours, however the exam itself will only be two hours long. You may start the exam any time during the window period, however you must submit your exam no later than two hours and 15 minutes after you start it. If you submit your exam later than this you may lose points on the exam. If it is extremely late, your exam will not be accepted.

Please note that however you take the exam that calculators and other electronic devices will NOT be allowed. You also may NOT work with others, use notes, books, or any other resources that are not explicitly stated as allowed.

Finally, please note that if you do not contact the instructor about taking the exam in person (option 1) you MUST take the exam online using Lockdown Browser (option 2).

Exam Dates

Exam I (Monday, July 27)
This exam will cover Modules 1 & 2. See above for more details including which sections this exam will cover.

Exam II (Monday, August 3)
This exam will cover Modules 3 & 4. See above for more details including which sections this exam will cover.

Exam III (Friday, August 14)
This exam will cover Modules 5 & 6. See above for more details including which sections this exam will cover.

Exam Grading

With few exceptions, most questions on the exams will be graded on the following basis:
4 points- answer is correct and complete
2 points- work and explanation make progress in solving but are incomplete and/or have multiple errors
0 points- no work submitted or no progress made in solving the problem in an appropriate manner

Feedback and Grades
I will make every effort to provide feedback and grades within 24-48 hours, with the exception of Exam III and final course grades, which may take longer to finish. To keep track of your performance in the course, refer to My Grades in HuskyCT.

Grading Scale:

Grade	Letter Grade	GPA
93-100	A	4.0
90-92	A-	3.7
87-89	B+	3.3
83-86	B	3.0
80-82	B-	2.7
77-79	C+	2.3
73-76	C	2.0
70-72	C-	1.7
67-69	D+	1.3
63-66	D	1.0
60-62	D-	0.7
<60	F	0.0

Final grades will be rounded naturally (i.e., a 92.5 would be rounded up to 93 and receive an A and a 92.3 would be rounded down to a 92 and receive an A-).

Due Dates and Late Policy
Due to the large number of PPP available and ample opportunities to earn those points, **no late work will be accepted. No make up exams can be given either.**

All course due dates are identified in the **Course Schedule**. **Deadlines are based on Eastern Time; if you are in a different time zone, please adjust the times accordingly to ensure your work will be graded**. *The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate and timely manner.*

I urge you to start assignments before they are due. **There are no makeup exams.** If there are extenuating circumstances for why you are unable to take the exam, you may be excused from that exam. However, is up to the discretion of the instructor if the exam will be excused. If you think you will miss an exam for any reason, please contact the instructor as soon as possible.

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Academic Integrity

All students shall act in accordance with the Student Code at the University of Connecticut, which states: "Academic misconduct is dishonest or unethical academic behavior that includes, but is not limited to, misrepresenting mastery in an academic area (e.g., cheating), failing to properly credit information, research, or ideas to their rightful originators or representing such information, research, or ideas as your own (e.g., plagiarism)."

In particular, this means that any work you submit in this course should be your own. It is expected that you will struggle with various aspects of this course, and you are encouraged to seek help from me, your peers, the Q Center, and other sources in understanding the concepts and computations. **However, you are expected to turn in work that reflects your own understanding of the topics and ideas. Therefore, your work should not bear resemblance to that of any other student in the course or to any other sources used, and any ideas used for which any other party had a share in developing should be cited as such.**

For example, it is a good idea to look at examples in the text, notes, or online for problems similar to the one you are stuck on, and looking for ways to adapt the ideas and methods to your current problem. **In the interest of both your learning and academic honesty, I do not recommend searching for solutions to the specific problem you are stuck on.** However, if you search for solutions to a specific assigned problem, you will need to carefully cite your source **and also write up a solution that is completely in your own words and honestly reflects your own understanding of the ideas (i.e., without looking at the solution, or possibly even at any notes you took while looking at the solution).**

Consequences of academic misconduct include, but are not limited to, a zero on the assignment or exam and/or a grade of F in the course. If you are unsure that what you are doing to complete the work of this course is acceptable, contact the instructor for helpful tips and advice on how to protect your work and ensure that you are not violating the academic integrity policies of the instructor, the course, or the university.

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important standards, policies and resources, which include:

- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

Students with Disabilities

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from Blackboard's website)

Software/Technical Requirements (with Accessibility and Privacy Information)

The software/technical requirements for this course include:

- HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)
- WebAssign (Cengage Accessibility Statement, Cengage Privacy Policy)
- Campuswire (Privacy Policy)
- Adobe Acrobat Reader (Adobe Reader Accessibility Statement, Adobe Reader Privacy Policy)
- Microsoft Office (free to UConn students through uconn.onthehub.com) (Microsoft Accessibility Statement, Microsoft Privacy Statement)
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).
- Video recording capabilities, such as a webcam or smartphone.

NOTE: This course has NOT been designed for use with mobile devices.

Help

Technical and Academic Help provides a guide to technical and academic assistance.

This course is completely facilitated online using the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the Help Center. You also have 24x7 Course Support including access to live chat, phone, and support documents.

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.
- Create, upload, and view video files.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by Budget Planning and Institutional Research (BPIR).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.