

**The University of Iowa
The College of Liberal Arts and Sciences
Spring 2024**

Title of Course: Calculus III, MATH:2850

Course meeting time and place:

Section 0091 12:30P - 1:20P MWThF 217 [MLH](#)

Section 0111 9:30A - 10:20A MWThF 218 [MLH](#)

Delivery Mode: In-Person. This course section will be held face-to-face in a physical instructional space.

Department of Mathematics: <https://math.uiowa.edu/>

Mathematics DEO Contact Information:

Professor Ryan Kinser, 14 MLH, 319-335-0714, ryan-kinser@uiowa.edu

Course ICON site: To access the course site, log into [Iowa Courses Online \(ICON\)](#) using your Hawk ID and password.

Course Home:

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the “second-grade only” option (SGO), academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

Instructor: Oguz Durumeric, Department of Mathematics

Instructor Contact Information

Office location: 1D MLH (MacLean Hall)

Student drop-in hours: Mon, Wed & Thu 11:00 am-12:00 noon, in my office 1D MLH. I am also available by appointment if you are unable to attend my drop-in hours. The appointments may be at the Zoom or in-person depending on the day and time.

The primary mode of communication: My UI E-mail: oguz-durumeric@uiowa.edu

This is the fastest and safest way to contact me. Please send your e-mails from your UI e-mail. Phone: 319-335-0774. Please send an e-mail to the UI address above, the messages left by phones are not recorded well, usually there is lot of room for misunderstanding, and it is not effective in general. Messages left through ICON are not preferable since the responses may not be prompt. Please use my UI E-mail: oguz-durumeric@uiowa.edu

Course Supervisor None.

Please talk to the Mathematics DEO Professor Ryan Kinser. ryan-kinser@uiowa.edu

TA for the course: Yilin Zhu, Department of Mathematics, yilin-zhu@uiowa.edu

Catalog Description of Course: Multivariable calculus; vector functions, line integrals, total differentials, gradient, implicit functions, coordinate systems, Taylor's expansion, extrema, multiple integrals, vector fields, line integrals, surface integrals, Green's, Stokes' and divergence theorems.

Prerequisites: Calculus II MATH 1860 (or equivalent or MATH 1560) with a minimum grade of C- Students may take MATH:2700 and MATH:2850 in any order or at the same time; however, it is recommended MATH:2700 be taken before or along with MATH:2850. In Spring 2024, the classes are taught by a faculty member with a teaching assistant.

Objectives and Goals of the Course: This is a multivariable calculus course designed for the students majoring in mathematics, statistics, actuarial and data science and most of the physical sciences (but not engineering, who are recommended to take MATH 3550.)

Learn multivariable differential and integral calculus of real and vector valued functions, curves, surfaces, and 3D geometry. Specifically learn graphing, continuity, partial derivatives, gradient, total derivative, chain rule, implicit and inverse function theorems, extrema, Taylor polynomials, maximization & minimization, Lagrange multipliers, double and triple integrals, change of variables for multiple integrals, cylindrical and spherical coordinates, vector fields, conservative vector fields, line integrals, surface integrals, flux, to reach the classical generalizations of the Fundamental Theorem of Calculus, namely, Green's, Stokes' and Divergence (Gauss') theorems.

Required Textbook/Materials

Vector Calculus 5th Edition

ISBN: 9780136799887

Author: Susan J. Colley; Santiago Sanz

Publisher: Pearson ©2021

Approximately \$35.91 will be billed to your U-Bill, if you are using ICON Direct

Students using **The ICON Direct Program** can access the e-text for the text above from the ICON of this course, by choosing [ICON Direct eTexts](#) on the left column. To access the course ICON site, log into [Iowa Courses Online \(ICON\)](#) using your Hawk ID and password.

The ICON Direct program will be used to provide required course materials via your ICON course site. Your U-Bill will be charged automatically after your course has started, unless you opt out prior to the last day for tuition and fee reduction [course deadline](#). FOR MOST SPRING 2024 16-WEEK COURSES THE OPT-OUT DEADLINE IS MONDAY JAN 29, 2024, AT 6 P.M. Specific opt out information will be provided in the opt out tool:

<https://teach.uiowa.edu/icon-direct>

[Student Frequently Asked Questions](#)

<https://teach.uiowa.edu/icon-direct/opt-out>

You can look at <http://www.math.uiowa.edu/~odurumer/> for my MATH 2850 courses from 2016-2017, where you can find **old exams, review sheets, and old lecture notes**.

GRADES

Grading: Plus/minus grading will be used. With **criterion-reference grading**, students receive grades based on the quality of their work in relation to the criteria defined by the instructor and by the rubrics or models specifying the qualities of each grade. We may choose to adjust the scale (criteria) below if a need arises.

The following is the starting scale for the overall course grades. The cut scores (e.g., 90 for A-'s) will never go up, but they may go down for some exams, to improve your letter grades, and each exam will be treated separately:

A+ ≥ 98	B+ ≥ 87	C+ ≥ 75	D+ ≥ 60	F < 50
A ≥ 93	B ≥ 83	C ≥ 70	D ≥ 55	
A- ≥ 90	B- ≥ 80	C- ≥ 65	D- ≥ 50	

Grading System:

- 50% 2 midterms (Thursdays February 22 and April 4, 6:30-8:00 pm in 101 BBE)
- 25% Final exam (date, time, and place to be announced)
- 15% 5 Quizzes, on Thursdays about every other week (on 2/1, 2/15, 3/7, 3/28, 4/18)
- 10% Homework, assigned by Fridays, and usually due the following Friday.
- +/- 5% Attendance and class participation

ALL EXAMS ARE COMPREHENSIVE, unless specified otherwise.

Date and time of the two Midterms:

Start and end times of Midterm 1	6:30PM - 8:00PM 02/22/2024 Thu	101 BBE
Start and end times of Midterm 2	6:30PM - 8:00PM 04/04/2024 Thu	101 BBE

Date and Time of the Final Exam: The final examination date and time will be announced by the Registrar usually by the fifth week of classes and it will be announced on the course ICON site once it is known. MyUI usually shows the date, time, and place of the final exams, as well as the midterms (if they are outside class meeting time) Do not plan your end of the semester travel plans until the final exam schedule is made public. It is your responsibility to know the date, time, and place of the final exam. According to Registrar's final exam policy, students **have a maximum of two weeks after the announced final exam schedule** to request a change if an exam conflict exists or if a student has more than two exams in one day (see the [policy](#) here).

Course Grades

Final course grades will be assessed based on your performance in the following activities:

Exams: Two midterms and a final exam of equal weight (25%) will be given. Each exam is comprehensive but with more emphasis on the untested material, and the sections covered in each exam will be posted on ICON. They will include the material presented in lecture, textbook, and the assigned homework. The exams will evaluate students' knowledge of basic concepts, terms, solutions, and calculations discussed in the course. In the quizzes and the exams, you are expected to show all your work in an organized and coherent fashion. In the long problems, all work must be shown. Giving only a final solution obtained by guessing (or using a calculator) may not earn full credit. **No calculators in the exams or quizzes.**

Quizzes: To ensure that students are covering and understanding the course material, regular quizzes covering the material of the lectures and the textbook will be given. They will evaluate key information presented in the course for the sections covered by the quiz. The quizzes will be on Thursdays every 2-3 weeks (excluding the weeks of the exams) starting with week three of the semester. The quizzes will consist of problems like those assigned as homework or done in class or in the textbook. We will drop one lowest quiz grade.

Homework: Homework will be assigned by Fridays, and usually due the following Friday. There will be about 12-13 HW assignments, we will count the best 10. **No late homework without a good excuse, and no make-up for homework.**

Class participation, Attendance and Absences: Regular and prompt attendance is essential for this course. Since a percentage of your grade will be based on class attendance and participation (+/- 5%), it is in your interest to attend almost every class and make significant contributions to the discussions. Class attendance will be taken on many days, and missing the class meetings up to 10% will not affect your grade. However, active, and meaningful participation is especially important, and it will affect your grade positively. Please use the **absence explanation form** in ICON under Student Tools if you have a good reason to be absent. You can find CLAS guidance on absences [here](#).

Structure of the Lectures and Discussions: Mondays, Wednesdays, and Fridays will always be lectures. On Thursdays, the lecturer and the TA will be conducting discussion sessions, answering questions, and using worksheets. All quizzes will be given on Thursdays. Since the midterms are on Thursday evenings, the class hour on those dates will be used for answering questions, and reviews. One exception, the first Thursday January 18 will be a lecture.

Calendar of Course Assignments and Exams: We plan to cover Chapters 1-7 of the textbook. The starting dates and the time spent on each topic are subject to change. All changes will be announced in class or on ICON. It is solely the student's responsibility to be informed of such announced changes.

Weeks	Start	Chapters	Subject
1-2	Jan 17	1 (1-6)	Vectors
3-6	Jan 29	2	Differentiation in several variables
MIDTERM 1, February 22, Thursday			
7	Feb 26	3 (1, 2)	Vector valued functions
7-9	Mar 1	4	Taylor's formula, Max-Min, Lagrange multipliers
9-12	Mar 20	5, and 1.7	Multiple integration
MIDTERM 2, April 4, Thursday			
12-13	Apr 12	6 and 3.3,4	Vector fields, line integrals, path independence, Green's Theorem
14-15	Apr 25	7	Parametric surfaces, area, surface integrals, Gauss' and Stokes' Theorems

Other course resources: You are **strongly encouraged** to go to your lecturer's and TA's office hours for more help as needed. If you have conflicts with the listed office hours, make an appointment for more office hours. There is limited help available through the Math Tutorial Lab. <https://math.uiowa.edu/math-tutorial-lab>

Students may find the Writing Center and the Speaking Center useful for this course:

Writing Center: <http://www.uiowa.edu/~writingc/>

Speaking Center: <http://clas.uiowa.edu/rhetoric/for-students/speaking-center>

Tutor Iowa: <https://tutor.uiowa.edu/>

COURSE POLICIES

Students are expected to attend all lectures and do all the homework regularly. Students are responsible for everything covered in the lectures, textbooks, and the prerequisites. Important announcements about changes (if necessary) to the syllabus, homework, exams, etc. will be made in the lectures, announced on ICON and/or they will be e-mailed to your UI e-mail address. **Taking all quizzes and the three exams (two midterms and final) is mandatory. No Calculators in the quizzes or exams.**

You are strongly encouraged to go to your lecturer's and TA's office hours. Make an appointment if you have a conflict with the listed office hours.

Make-up may be given for the exams and quizzes missed due to unavoidable circumstances and compelling reasons which are documented in writing. The CLAS rules will be followed: <https://clas.uiowa.edu/students/handbook/attendance-absences> If you have a conflict or a medical reason, discuss your situation with your lecturer as soon as possible.

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by the [CLAS Code of Academic Honesty](#). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures](#). Graduate academic misconduct must be reported to the Graduate College according to Section F of the [Graduate College Manual](#).

Student Collaboration: In this course, students are not allowed to collaborate with others on quizzes, midterms, or the final exam. Do not share your written work with others or ask others to see their written work, both are considered academic misconduct. If you need help, please stop by during my office hours or talk to your TA. Exams showing strong similarities and/or duplication will be considered the result of academic dishonesty and will receive failing grades, and the students involved will be reported to the College. Do not share your quiz and exam work with others in the class. Students are responsible for understanding this policy. If you have questions, ask for clarification. **You are allowed to discuss HW problems with other students, but you are not allowed to share or copy other students' written homework.** Doing your HW by copying from the internet is not allowed. In summary, you are allowed to talk about the HW

questions and methods, but you write your answers in your own words and by yourself. HWs showing strong similarities and/or duplication may be considered the result of academic dishonesty.

Student Complaints

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor and/or the course supervisor (if applicable), and finally with the Director or Chair of the school, department, or program offering the course.

Undergraduate students should contact [CLAS Undergraduate Programs](#) for support when the matter is not resolved at the previous level. Graduate students should contact the CLAS [Associate Dean for Graduate Education and Outreach and Engagement](#) when additional support is needed.

Drop Deadline for this Course:

You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the [drop deadline for this course](#) here. When you drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the [Registrar’s website](#). Undergraduate students can find policies on dropping CLAS courses [here](#). Graduate students should adhere to the [academic deadlines](#) and policies set by the Graduate College.

Cell phones must be turned off during lectures, quizzes, and exams. If you must read or text a message during the lecture, please do it outside the classroom. During the exams, the cell phones must be put (far) away, preferably at the bottom of your backpack. During the exams, you cannot hold them in your hand, not keep them on your desk, chair, or anywhere easily accessible, and you cannot use it as a calculator.

General University and College Information and Policies

[University regulations require that students be allowed to make up examinations](#) that have been missed due to illness, religious holy days, military service obligations (including service-related medical appointments), or other unavoidable circumstances or University-sponsored activities. Students with UI-authorized activities must discuss their absences with the instructor as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

Communication: UI Email

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community. For the privacy and the protection of student records, UI faculty and staff can only correspond with UI email addresses.

Mental Health Resources and Student Support

Students are encouraged to be mindful of their mental health and seek help as a preventive measure or if feeling overwhelmed and/or struggling to meet course expectations. Students are encouraged to talk to their instructor for assistance with specific class-related concerns. For additional support and counseling, students are encouraged to contact University Counseling Service (UCS). Information about UCS, including resources and how to schedule an appointment, can be found at counseling.uiowa.edu. Find out more about UI mental health services at mentalhealth.uiowa.edu.

[Student Care and Assistance](#) provides assistance to University of Iowa students who are experiencing a variety of crisis and emergency situations, including but not limited to medical issues, family emergencies, unexpected challenges, and sourcing basic needs such as food and shelter. More information on the resources related to basic needs can be found at basicneeds.uiowa.edu/resources/. Students are encouraged to contact Student Care & Assistance in the Office of the Dean of Students (Room 135 IMU, dos-assistance@uiowa.edu, or 319-335-1162) for support and assistance with resources.

University Policies

Accommodations for Students with Disabilities

The University is committed to providing an educational experience that is accessible to all. If a student has a diagnosed disability or other disabling condition that may impact the student's ability to complete the course requirements as stated in the syllabus, the student may seek accommodations through [Student Disability Services](#) (SDS). SDS is responsible for making Letters of Accommodation (LOA) available. **The student must provide an LOA to the instructor as early in the semester as possible, but requests not made at least two weeks prior to the scheduled activity for which accommodation is sought may not be accommodated.** The LOA will specify what reasonable course accommodations the student is eligible for and those the instructor should provide. Additional information can be found on the [SDS website](#).

Free Speech and Expression

Absences for Religious Holy Days

Classroom Expectations

Non-discrimination

Sexual Harassment/Misconduct and Supportive Measures

Sharing of Class Recordings (if appropriate)