Course meeting times and places:
Lecture 000A 12:30P-1:20P MWF W290CB
Lecture 000B 1:30P-2:20P MWF W290CB
Discussion sections all meet TuTh in 117 MLH

Course ICON site: To access the course site, log into Iowa Courses Online (ICON) https://icon.uiowa.edu/index.shtml 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.

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

Instructor
Office location: 325K MLH
Student drop-in hours: Tuesdays and Thursdays 7:30 pm-8:30 pm on Zoom and Fridays, 2:30 pm-3:30 pm in 325K MLH
Phone:319 335 0795
E-mail: walter-seaman@uiowa.edu

DEO: Professor Ryan Kinser, 14 MLH, ryan-kinser@uiowa.edu

Course Supervisor Walter Seaman
Office and hours: 325K MLH Hours TBA
Phone and e-mail:319 335 0795 walter-seaman@uiowa.edu

Description of Course
The goal of this course is to make you proficient users of calculus in three-dimensional space in preparation for a variety of engineering and science courses. A general description of the goals is in the preface to the text. Topics to be covered include vector geometry; functions of several variables; polar coordinates; partial derivatives, gradients, directional derivatives; tangent lines and planes; parametric curves,
curvilinear motion; multiple integrals; vector fields, flows; integration on curves, work; divergence, flux, Green’s theorem; series and Taylor series. This means we will work from chapters 1-4, 8-13, and 21 of the text. See the weekly syllabus on line for more details.

Learning Objectives

Students will become proficient users of

i. vector geometry for analyzing vector sums, differences, angles and projections, regions spanned by several vectors and their areas/volumes, etc.

ii. multivariable calculus techniques of differentiation, integration, gradient analyses and optimization.

iii. vector field and force field topics and techniques along with applications to work flows along and across planar curves, conservation of energy and Green’s theorems.

iv. Convergence and divergence of infinite series in general and Taylor series for differentiable functions, the ‘classical’ examples and applications

Students will be able to extract from real-world contexts the use of these techniques to solve the problem(s) in question.

eTextbook/Materials

The required etextbook for this course is:

- Title Required eText: Advanced Calculus using Mathematica (.nb Edition)
- Author K. D. Stroyan

See the course ICON page for instructions on purchasing and downloading this etext.

This etext is written entirely in Mathematica notebooks (.nb files). So you need Mathematica to read it. However, the first two chapters (chapters 1 and 2) are also available in pdf format on the ICON course page. You do not need Mathematica to read the chapter 1 and 2 pdf chapters.

Mathematica is installed in all UI ITS computer centers and Engineering computer labs. Mathematica is also available on your UI Virtual Desktop.

If you want to read the eText on your own computer, you will need to install your free copy of Mathematica, which can be downloaded through Wolfram. Instructions for downloading Mathematica are on the ICON page.

Course Grades

Final course grades will be assessed based on your performance in the following activities:
Written Homework = 20% of your cumulative course percentage score (25 assignments, drop lowest 5, average remaining 20)

Activity work = 16% of your cumulative course percentage score (15 assignments, drop lowest 3, average remaining 12)

In lecture exams, one-hour each = 44% of your cumulative course percentage score (average of your 4 one hour, in lecture 10-question MC exam scores, none dropped)

Final exam two hours = 20% of your cumulative course percentage score (two hour, cumulative 20-question MC exam score)

Exam calculator policy: NO CALCULATORS, CELL PHONES, COMPUTERS, WATCHES, TABLETS, NO DEVICE OR MACHINE THAT CAN COMMUNICATE WITH ANY OTHER DEVICE, INFORMATION SOURCE OR PERSON. You will be allowed to bring a 3” by 5” paper or cardboard, non-electronic, note card with hand-written notes on both sides of it. More details are in the on-line ICON course materials.

Grading System and the Use of +/-

Final letter grades will be awarded based on the following ranges of your cumulative course percentage scores:

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<tr>
<th>Grade</th>
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<tr>
<td>A</td>
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<td>A</td>
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<td>87-89.9</td>
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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.

You should feel free to work with your classmates on homework, but try to understand the work and not just copy if you get help. Copying from another person's homework, or simply writing down word-for-word, or close to word-for-word what another person such as a peer or tutor or math lab assistant says or does, is considered plagiarism and will be documented and reported to the College of Liberal Arts and Sciences Dean's office for further review and possible disciplinary actions.

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.

**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 and withdrawing here.

**Calendar of Course Assignments and Exams**
See the course ICON page for a detailed list of assigned graded work along with information about when those assignments are due and details of what constitutes work which is acceptable for grading.

**College of Liberal Arts and Sciences (CLAS) Course Policies**

**Attendance and Absences**
University regulations require that students be allowed to make up examinations which have been missed due to illness or other unavoidable circumstances. Students with mandatory religious obligations or UI authorized activities must discuss their absences with me as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

**Attendance:**

*We expect you to attend lectures, discussion sections, and complete written homework on time.*

**Late assigned work:**

*We will NOT accept late work without documented illness or other approved excused absences, delivered within one week of the due date for the course work. Official CLAS policies for exams are at:*

**Exam Policies**

https://clas.uiowa.edu/faculty/examination-policies-and-best-practices#makeup

(Emphases added)
“Make-up Examinations Policy

University policy requires that students be permitted to make up examinations missed due to illness; religious holy days; military service obligations, including service-related medical appointments; other unavoidable circumstances; and University-sponsored activities (Operations Manual, IV-8.1). Instructors must offer reasonable options without penalty to students who have missed examinations for legitimate reasons.

It is the student’s responsibility to contact the instructor as soon as possible about the reasons for a missed exam and, if the instructor so wishes, to provide appropriate documentation.

Make-up examinations should be scheduled at a reasonable time and location. The make-up examination, if different, should be equivalent to the original in form, content, difficulty, and time limits, and the standards for scoring and grading should be equivalent to those used for the original examination.

“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.

Other Expectations of Student Performance
All students are expected to attend class and to contribute to its learning environment in part by complying with University policies and directives regarding appropriate classroom behavior.
See the following quote on classroom behavior from the CLAS link

https://clas.uiowa.edu/students/handbook/student-rights-responsibilities

“All students are expected to be engaged during class time. Students who sleep in class or read non-class materials during class disrupt the course, as do students who engage in other non-class activities such as using a cell phone and working on an assignment for another course. This behavior disrupts the learning environment for all involved and compromises the learning process.”

Where to Get Help
For help with course material, talk to your MATH:1560 Professor, TA, go to the Math Lab in MLH, the Engineering Tutoring center, and the UI tutoring Iowa: https://tutor.uiowa.edu/

University Policies
Accommodations for Students with Disabilities
Basic Needs and Support for Students
Classroom Expectations
Exam Make-up Owing to Absence
Free Speech and Expression
Mental Health
Military Service Obligations
Non-discrimination
Religious Holy Days
Sexual Harassment/Misconduct and Supportive Measures
Sharing of Class Recordings