

**The University of Iowa  
The College of Liberal Arts and Sciences  
Spring 2025**

**Title of Course:** MATH:1860:0431 – Calculus II  
**Time and Location:** MTWTh 2:30-3:20pm, 25 PH  
**Department of Mathematics:** <https://math.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: Kevin Wang**

**Office hours:** Tuesday, Wednesday 3:30-4:30pm; Friday 2:30-3:30pm.

*Students are invited to drop by during these hours to discuss questions about the course material or concerns. I am also available by appointment if you are unable to attend my drop-in hours.*

**Office location:** B12 MLH

**Email:** [kevin-wang@uiowa.edu](mailto:kevin-wang@uiowa.edu)

Course Supervisor: Dr. Xiaoyi Zhang, 25E MLH, [xiaoyi-zhang@uiowa.edu](mailto:xiaoyi-zhang@uiowa.edu)

DEO: Dr. Ryan Kinser, 14 MLH, [ryan-kinser@uiowa.edu](mailto:ryan-kinser@uiowa.edu)

### **Additional Resources**

The Math Lab (125 MLH) offers free, drop-in tutoring for students enrolled in this class. Schedule and information about the Math Lab are available [here](#).

### **Prerequisites**

MATH:1550 with a minimum grade of C- or MATH:1850 with a minimum grade of C- or MPT Level 3 score of 15 or higher

### **Description of Course**

This course is a continuation of MATH:1850 and intended to teach one-variable calculus beyond Calculus I to prepare math, physics, statistics, computer science, chemistry, and other STEM majors for more advanced courses in math.

### **Learning Objectives**

Our goal is to cover

- Chapter 7 Sections 1-5, 7-8: Techniques of integration including by-parts, trigonometric integrals, trigonometric substitutions, partial fractions, approximation of integrals, and improper integrals
- Chapter 8 Sections 1-5: Applications such as arclength and areas of surfaces of revolution; applications to physics, engineering, biology, and statistics
- Chapter 9 Sections 1-6: Differential equations topics such as modeling, direction fields, Euler’s method, separable equations, population growth, linear equations, predator-prey systems
- Chapter 10 Sections 1-6: Parametric curves; polar coordinates; conic sections
- Chapter 11 Sections 1-11: Infinite sequences and series including convergence tests, power series, and Taylor polynomials and series

## Required Course Materials

1. Textbook: *Single Variable Calculus: Early Transcendentals, 9th Edition*  
Author: James Stewart, Daniel K. Clegg, Saleem Watson  
Publisher: Cengage ©2020  
ISBN: 9780357022269  
(available for purchase in ICON through ICON Direct)

## Grading Policy

Final course grades will be assessed based on the following categories:

In-class Activities	10%
Homework	20%
Exam 1	20%
Exam 2	20%
Final Exam	30%

## Grading Scale

Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Minimum Percentage	93	90	87	83	80	77	73	70	67	63	60	0

This scale is tentative. Cutoff lines may be decreased.

## In-class Activities

We will engage in weekly, collaborative in-class activities, excluding exam weeks. These activities will help check for understanding and highlight important concepts. Each activity will be graded by effort and must be submitted to Gradescope (available through ICON) within one week of the date that the activity is assigned.

## Homework

For almost all students, doing problems is the best way to learn the material. Homework assignments will be posted weekly on ICON. They will be assigned on Thursdays and due by the following Thursday, excluding exam weeks, on Gradescope (available through ICON). Each assignment is graded both on completion and correctness of a select few problems. You must show your work, and it must be legible, neatly organized, and have the problems clearly labeled. You are encouraged to work with others, but you are required to write your own solutions. Late homework will be accepted for up to one week after the due date but a 20% penalty will be assessed to the missing assignment. Your lowest homework score will be dropped. You will always have the opportunity to ask questions about the homework at the start of each class or during my office hours.

For both in-class activities and homework assignments, you must scan your work as a pdf before submitting them to Gradescope. You may use the Gradescope app to do this, or you may use other scanning apps.

## Exam Dates

Exam 1	February 27, in class
Exam 2	April 10, in class
Final Exam	Week of May 12, specific time/location TBA

## Exams

There will be three exams given at the above dates. All exams are comprehensive with a focus on recently covered material. Each exam is closed book, but you may bring a standard (8.5in x 11in) piece of paper with notes to use and a scientific calculator. Makeup exams will only be given for excused absences (illness, religious holidays,

certain university activities, etc.). If you need to miss an exam, I must be informed BEFORE the exam takes place (except in extreme cases). To qualify for a makeup in the case of an official university event (sporting event, field trip, etc.), your supervising professor/coach must confirm your intended participation via letter or email BEFORE the day of the exam.

### **Date and Time of the Final Exam**

The [final examination date and time](#) will be announced by the Registrar generally by the fifth week of classes, and it will be announced on the course ICON site once it is known. **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 the 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 scheduled for the same day (see the [policy](#) here).

### **Collaboration**

You are encouraged to work with others on homework and all in-class activities unless you are specifically instructed not to do so. You may also visit the Math Lab or consult online resources. **However, all homework solutions submitted must be your own work.** Please be aware that to master the skills needed for this class, a lot of practice is required. To do well on exams you will need to work many of the problems multiple times without help. Be sure to test your knowledge by doing much of the homework on your own.

### **Attendance and Absences**

You are expected to attend all classes. The concepts in this class build on one another. To get the most out of class time, it is important that you stay up to date with assignments and class material.

### **Other Expectations of Student Performance**

Students have the right to a distraction-free learning environment. I expect that you are silent when me or students are talking. All electronics must be put away unless they're being used to further explore the topics we cover in class. In addition, I strongly encourage you to actively participate in class by asking questions or for more explanations whenever you feel confused. In this class, ALL questions are good questions!

[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.

### **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](#).

### **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 CLAS courses [here](#).

### **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](mailto: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 an 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](#)

### Course Schedule

Below is the approximate schedule for the course. Exam dates will not change, but sections covered might.

Week	Section	Topic
1 (1/21-1/23)	7.1-7.2	Calculus I Review Integration by Parts Trigonometric Integrals
2 (1/27-1/30)	7.3-7.4	Trigonometric Substitution Integration of Rational Functions by Partial Fractions
3 (2/3-2/6)	7.5, 7.7-7.8	Strategy for Integration Approximate Integration Improper Integrals
4 (2/10-2/13)	8.1-8.2	Arc Length Area of a Surface of Revolution
5 (2/17-2/20)	8.3-8.5	Applications to Physics and Engineering Applications to Economics and Biology Probability
6 (2/24-2/27)	9.1-9.2, Review, Exam 1	Modeling with Differential Equations Direction Fields and Euler's Method Review
7 (3/3-3/6)	9.3-9.5	Separable Equations Models for Population Growth Linear Equations
8 (3/10-3/13)	9.6, 11.1-11.2	Predator-Prey Systems Sequences Series
(3/17-3/21)		Spring Break
9 (3/24-3/27)	11.2-11.4	Series The Integral Test and Estimates of Sums The Comparison Tests
10 (3/31-4/3)	11.5-11.7	Alternating Series and Absolute Convergence The Ratio and Root Tests Strategy for Testing Series
11 (4/7-4/10)	11.8-11.9, Review, Exam 2	Power Series Representations of Functions as Power Series Review

12 (4/14-4/17)	11.10-11.11, 10.1	Taylor and Maclaurin Series Applications of Taylor Polynomials Curves Defined by Parametric Equations
13 (4/21-4/24)	10.2-10.4	Calculus with Parametric Curves Polar Coordinates Calculus in Polar Coordinates
14 (4/28-5/1)	10.5-10.6	Conic Sections Conic Sections in Polar Coordinates
15 (5/5-5/8)	Review	Review
Finals Week (5/12-5/16)	Final Exam	Final Exam (time/location TBA)