

MATH 231: Calculus II
University of Illinois, Urbana-Champaign
Spring 2021

Instructor: Lena Folwaczny

- **Email:** lfolwa2@illinois.edu
- **Office Hours:** Tuesday/Thursday 9 - 9:50am, 1 - 1:50pm, At these times I will be available on a zoom link via our class Moodle page, and via email. These times correspond to our regularly scheduled class times.

Course Information:

- **Description:** Calculus II is the second semester continuation of Calculus I, and assumes a very good working knowledge of limits, derivatives, basic integration, and integration by substitution. We will learn that integration is not nearly as straightforward as differentiation, and learn MANY different techniques for integrating functions (such as partial fractions and trig substitution). We go on to study infinite sequences and series and their applications, which is a major shift in methodology. For most people, Calculus II is the most challenging term in the calculus sequence, mainly because it takes a fair amount of maturity and creativity that you may not have needed up to this point. There are a larger number of interrelated concepts than before, and solving a single problem can require thinking about one concept or object in several different ways. Because of this, conceptual understanding is more important than ever, and it is not possible to learn a short list of “problem templates” in lecture that will allow you to do all the HW and exam problems. Thus, while lecture and section will include many worked examples, you will still often be asked to solve a HW problem that doesn’t match up with one that you’ve already seen. The goal here is to get a solid understanding of calculus so you can solve any such problem you encounter in mathematics, the sciences, or engineering, and that requires trying to solve new problems from first principles, if only because the real world is sadly complicated.
- **Textbook:** James Stewart, Calculus: Early Transcendentals, 8th edition, with Enhanced WebAssign.
- For complete information on purchasing options for both, see

<http://go.illinois.edu/CalculusBookInfo>

If you have the standard text and WebAssign package from Math 220 or 221 from the last semester, then you already have everything you need for this course. Even before you purchase WebAssign, you can freely use it for the first two weeks of class and so not miss any homework assignments.

Weekly Schedule:

- **Monday:**
- **Tuesday:** Watch Lecture Videos, take Lecture Quiz and start WebAssign HW.
- **Wednesday:** Meet with your Discussion Section for worksheet.
- **Thursday:** Watch Lecture Videos, take Lecture Quiz and start WebAssign HW.
- **Friday:** Meet with your Discussion Section for worksheet.

All course work and videos for the week will be posted on our class Moodle page on Monday morning 12:01 am. So on Monday you will see videos and lecture quizzes for Tuesday/Thursday lectures, worksheets for Wednesday/Friday discussions, Written HW for the week, and WebAssign HW for the week. The week before an exam, a study guide and a practice exam will be posted.

Approximate Schedule:

- Week 1: Sections 5.3, 5.4, 5.5
- Week 2: Sections 6.1, 6.2
- Week 3: Sections 6.3
- Week 4: Sections 7.1, 7.2, 7.3
- Week 5: Sections 7.3, 7.4, 7.5
- Week 6: Sections 7.8
- Week 7: Sections 7.7, 8.1, 8.2, 8.3
- Week 8: Sections 8.3, 11.1, 11.2
- Week 9: Sections 11.2, 11.3
- Week 10: Sections 11.4, 11.5, 11.6
- Week 11: Sections 11.7, 11.8, 11.9
- Week 12: Sections 11.10
- Week 13: Sections 11.11, 10.1
- Week 14: Sections 10.1, 10.2, 10.3
- Week 15: Sections 10.3, 10.4

Grade Information: Overall grade cutoffs will never be stricter than 90% for an A- grade, 80% for a B-, and so on. We will not curve the final averages down. For example, if your final average in the class is 80 % then your grade will be at least a B-. The precise function which assigns a letter grade to each percentage will be determined at the end of the course.

- **WebAssign Homework** (5% of overall grade): There will be regular online homework assigned via WebAssign for each lecture. Your two lowest homework grades will be dropped at the end of the semester. Each week's two WebAssign assignments are both due together the following week, on Tuesday at 8am.
- **Written Homework Solutions** (5% of overall grade): Each week, problems will be chosen from your assigned WebAssign Homework. The detailed solutions to these problems must be written up clearly and turned in by Tuesday at 8am.
- **Lecture Quizzes** (5% of overall grade) There will be a short Lecture Quiz assigned every Tuesday/Thursday to check basic comprehension of lecture material. The lecture quiz is due the following day by 8am.

- **Groupwork** (5% of overall grade) During discussion sections on Wednesday/Friday, you will be assigned a group of 4 students that will meet 4 times together. The group will work together to solve worksheet problems, but each student should fill out their own worksheet. Exactly one student from the group must upload the worksheet to Moodle by 8am the next morning for grading. The names of all group members who were present must be on this worksheet, as well as listing all the group members who were absent. Each group member will receive the same score from this worksheet. Each group member must take turns uploading worksheets so there is no dominant uploader in the group. A group member uploading a worksheet in a dominant manner will result in a score of 0 for the group (unless this was absolutely necessary due to an absence). If the designated person chosen to upload the worksheet does not do so by 8am, any other group member has a chance to upload the worksheet by noon, but **MUST** list the designated uploader as absent for the worksheet to be eligible for credit for the other group members.
- **Midterm exams** (Lowest Exam 5%, Second Lowest Exam 10%, Other 3 exams 15% each): There will be 5 midterm exams during class, each administered via CBTF Remote, the Computer-Based Testing Facility at U of I. Midterm exams begin at 7pm. The complete list of Midterm Exams is as follows:
 - Midterm 1 Tuesday, February 9th, 7pm
 - Midterm 2 Tuesday, February 23rd, 7pm
 - Midterm 3 Tuesday, March 9th, 7pm
 - Midterm 4 Tuesday, March 23rd, 7pm
 - Midterm 5 Tuesday, April 20th, 7pm
- **Final exam** (20%): This will cover all class material. Exact days and times to be announced later.

Weekly Due Date Schedule

- Monday:
- Tuesday: 8am - Written HW and WebAssign HW due
- Wednesday: 8am - Lecture Quiz due
- Thursday: 8am - Group Worksheet due
- Friday: 8am - Lecture Quiz due
- Saturday: 8am - Group Worksheet due

Policies:

- Calculators: While calculators may be used in class or to help with homework, they will not be permitted in exams.
- Netiquette: Write clearly and professionally. In any course-related communication (emails, chats, discussions), use standard proper English with correct grammar. Stay on topic. Whether you are writing a discussion post or a message to your instructor, stay focused on the topic.

In an online course, most communication is done through written messages either in private posts or public discussions. It is important that students in online courses be especially sensitive to how messages and sentiment are communicated and received. Remember you are communicating with real people.

Stay on topic. Whether you are writing a discussion post or a message to your instructor, stay focused on the topic. Be kind and ethical. Do not belittle other students or the instructor. You may disagree with what someone says, but focus on the issue, not the person. Instead, be overly kind. Thank people for their response. Let them know you appreciate their time, how quickly they responded, etc. Behave online as you would in person. Be forgiving of the mistakes of others.

- Technology: You will need:
 - To have access to the internet using a laptop or desktop computer, in order to watch class videos, participate in discussion sections on zoom, and take exams. Students are responsible for having a backup plan if the primary computer crashes and/or Internet service fails. Mobile devices cannot be used for timed online exams.
 - The ability to scan homework and worksheets to a .pdf file (for this a smartphone will suffice).
 - To know how to download files and have the ability to install software. Students must have Adobe Acrobat Reader (free download) installed on the computer.
- Response time: I check the course frequently for postings and emails throughout the week. I will try to respond to any weekday messages within 24 hours, and weekend messages by the end of Monday.
- Late work and absence: Late work is not accepted. I understand that situations arise during the semester, which is why I will drop your lowest 2 written HW scores, your lowest 2 WebAssign HW scores, and your lowest 2 worksheet scores at the end of the semester. This is the only reason I drop scores. The university policy on excused absences will be followed; in particular, please let the instructor know in advance if you must miss work.
- Honor code: All work is conducted under the UIUC Student Conduct Code. In particular, all graded work you turn in must be your own.

Disability Services: Students with disabilities who require reasonable accommodations to participate in this class should contact me as soon as possible. In particular, any accommodation on quizzes and exams must be requested at least a week in advance and will require a letter from DRES.

Cheating: Cheating is taken very seriously as it takes unfair advantage of the other students in the class, and is handled as per Article 1 Part 4 of the student code. Penalties for cheating on exams, in particular, are very high, typically resulting in a 0 on the exam or an F in the class.