## Midterm 2 information

The exam will be held on Monday, October 11, 7:15-8:15 pm.

- The exam is designed to last 1 hour, but you may stay and work until 8:30 pm if you wish to.
- Please arrive by 7:05.
- Bring your University ID card (I-card).

### Location:

#### 12pm lecture (Professor Ahlgren)

- BD0, 11am (TA: Alex Duda) - 116 Rogers Adam Lab
- BD4, 12pm (TA: Brian Schertz) - 116 Rogers Adam Lab
- BD5, 1pm (TA: Brian Schertz) - 116 Rogers Adam Lab
- BD7, 1pm (TA: Alex Duda) - 116 Rogers Adam Lab
- BD9, 12pm (TA: MTip Phaovibal) - 103 Talbot Lab
- BD6, 3pm (TA: Jan Vervoost) - 103 Talbot Lab
- BD8, 3pm (TA: Vyron Vellis) - 103 Talbot Lab
- BD1, 9am (TA: Scott Ahlgren) - 112 Chemistry Annex
- BD2, 10am (TA: Eunmi Kim) - 112 Chemistry Annex
- BD3, 11am (TA: Eunmi Kim) - 112 Chemistry Annex

#### 1pm lecture (Professor Laugesen):

All of Professor Laugesen’s students will take the exam in 112 Gregory Hall.

### Basic information

- The exam covers material from Lecture 9 (Related Rates) through Lecture 19 (Work, Average Value) on the Schedule.
- Of course, you still need to know the basic material from the earlier part of the course.
- You are responsible for all topics covered in homework, lectures, and discussion section worksheets.
- You are responsible for all topics in the text which have been mentioned in class, for example, differentiation rules, antiderivatives (indefinite integrals) of standard functions, and integration by substitution.
- See the schedule of topics covered, along with links to worksheets, announcements and so on, at the course web site.

- The lecture on Monday October 11 (the day of the midterm) will be dedicated to review.
- The section meeting on Tuesday October 12 is canceled. So is the tutoring room, that day.

- No notes, calculators or electronic aids of any sort, on the test.
- Any act of academic dishonesty (e.g. looking at another student's paper) will be dealt with under the student code of conduct.

### Studying

Here is a list of major topics which have been covered:

1. Related Rates.
2. Extreme value theorem, finding absolute max and min of a continuous function on a closed interval.
3. Mean value theorem.
4. Finding local and absolute max and min by analyzing the sign of the derivative.
5. Applied optimization (applied max/min) problems.
6. Definition of the integral as a limit of Riemann Sums, connection to area.
7. Computing integrals directly from this definition.
8. Fundamental Theorem of Calculus, parts I and II.
9. Integration by substitution.
10. Moments of Inertia.
11. Area between curves.
12. Volumes of revolution, using all methods.
14. Average value ("Average value" will not be examined on this Midterm).
   - In some questions, you will be asked to set up integrals without actually evaluating them.
   - In others, you will be required to evaluate the definite integrals which arise.
   - Be aware of material which was stressed in the lectures.
   - Be sure that you understand the worksheet problems.
   - Be sure that you understand all of the assigned homework problems and suggested practice problems.
   - Get help from your TA or your professor.

Then do new problems.
For the written and online homework problems, you can do nearby problems from the textbook. The chapter review sections are another good source.
Check your answers to odd-numbered problems in the back of the book, or in your Student Solution Manual.
Be strict with yourself about whether you got a correct answer, and whether you knew what you were doing.

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**Tutoring room.**

- The Tutoring Room is in 345 Altgeld, 5-7pm Mon-Thu.
- On the day of the midterm, the Tutoring Room will hold an extra session in a different location: 3-5pm in 152/154 Henry Administration Building. At 5pm the Tutoring Room moves back to 345 Altgeld. Then it closes at 6pm, on the day of the midterm.

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**Practice exam problems**

- In the discussion sections on Thursday, October 7 we will hand out a list of sample practice problems for the exam.
- Please remember that it is important to do many other problems in addition to these.
- Here are some additional practice problems from the chapter review sections which you can do as necessary.
  1. Chapter 4 review (Page 348): 1-6, 50, 51, 52, 53, 54, 57
  2. Chapter 5 review (Page 409): 2 b, 3, 4, 9-38 as needed, 43-48, 51-56, 60, 61, 62 a,b, 67, 69, 70
  3. Chapter 6 review (Page 446): 1-17, 19-22, 28, 29a, 30
  4. Practice on volumes: For each of the problems 19-30 in 6.2, set up both an integral with respect to x and an integral with respect to y.
  5. Practice on work: §6.4: 13-24 (do as many of these as you need to).
  7. Practice problems on moments of inertia and solutions.
  8. Review problems handed out in sections on Thursday, 10/7 and solutions.