

## Math 20A (Shenk). Summer, 2011.

**Lectures:** MWF, 10:00–11:55 AM in APM B402A

**Recitation sections:** MW, 9:00–9:50 AM in APM B402A

**Web sites:** <http://www.math.ucsd.edu/~ashenk/> (This course)

<http://www.math.ucsd.edu/~jeggers/math20a/> (A previous Math 20A course)

**Instructor:** Al Shenk (ashenk@ucsd.edu), APM 6353 (Summer school office)

**Office hours:** MWF 1:00 PM–1:45 PM and by appointment

**Teaching Assistant:** Craig Timmons (ctimmons@math.ucsd.edu) APM 6414

**Office hours:** MW, 12:00–1:00 PM

T, 11:00 AM–12:00 PM

**Text:** *Calculus, Early Transcendentals* by Rogawski, 2008

**Calculators:** No calculators will be allowed on quizzes or exams.

**Quizzes:** 11:15–11:55 AM Friday, July 8, and Friday, July 22.

**Midterm exams:** 11:00–11:55 AM Wednesday, July 13, and Monday, July 25.

**Final exam:** Saturday, July 30.

**Grading:** Homework: 5%; Quizzes: 10%; Midterm 1: 25%; Midterm 2: 25%; Final Exam: 35%.

**Web support:** The course web site will contain announcements, the syllabus, interactive examples, and—as they occur—lecture note outlines and quiz and examination solutions.

**Participation credit:** Students will receive 1 extra point (up to 3 points) on the final exam for responding to the instructor's questions during lectures.

**Exams:** Students must work alone and use no books, notes, or calculators on quizzes, midterm exams, and the final exam, and must bring picture ID's to the exams.

**Grading:** Homework, quiz, and exam grades will be curved. The final exam grade will replace midterm exam scores with lower grade points. No make-up midterm exams will be given. A student must pass the exams to pass the course and must earn a C on exams to earn a C in the course.

## Tentative schedule

### Week 1

M, 6/27 Introduction to the course. Lecture 1. Inequalities, functions, graphs (*Rogawski*: Sections 1.1–1.4).

W, 6/29 Lecture 2. Limits and continuity (*Rogawski*: Sections 2.1–2.5).

F, 7/1 Lecture 3. Derivatives (*Rogawski*: Sections 3.1–3.2).

### Week 2

M, 7/4 Holiday

W, 7/6 Lecture 4. Derivatives of powers, sums, products, and quotients. *Homework 1 due before class.*

F, 7/8 Lecture 5. The Chain Rule. *Quiz 1 at 11:15 AM* on the assigned material through Section 3.6

**Week 3**

- M, 7/11 Lecture 6. Derivatives of transcendental functions. *Homework 2 due before class.*
- W, 7/13 Lecture 7. More related rate problems. *Exam 1 at 11:00* on the assigned material in Chapters 1–3.
- F, 7/15 Lecture 8. First- and Second-Derivative Tests. Sketching graphs of functions.

**Week 4**

- M, 7/18 Lecture 9. Optimization (*Rogawski*: Section 4.6). *Homework 3 due before class.*
- W, 7/20 Lecture 10. L'Hopital's Rule and piecewise-constant rates of change. (*Rogawski*: Section 4.7).
- F, 7/22 Lecture 11. The definite integral (*Rogawski*: Sections 5.1 and 5.2). *Quiz 2 at 11:15 AM* on the lecture material through l'Hopital's Rule.

**Week 5**

- M, 7/25 Lecture 12. The Fundamental Theorems of Calculus (*Rogawski*: Sections 5.3, 5.4, and 5.5).  
*Homework 4 due before class. Exam 2 at 11:00 AM* on the lecture material through l'Hopital's Rule.
- W, 7/27 Review.
- F, 7/29 Review.
- S, 7/30 *Final exam* at a time and place to be announced.

**Homework 1, due Wednesday, July 6 before class. Exercises from *Rogawski*.**

Section 1.1: 17, 21, 70, 71

Section 1.2: 11, 15, 19, 41

Section 1.4: 3, 29

Section 1.5: 24, 27

Section 2.1: 9

Section 2.2: 1, 37, 45, 47

Section 2.3: 25, 27

Section 2.4: 83, 85

Section 2.5: 5, 9, 17, 19

Section 3.1: 5, 11, 13, 23, 29, 33, 41

Section 3.1: 5, 21, 25, 49

Exercises at the end of the class notes for Lecture 3