SYLLABUS
Math 118: Fundamental Principles of Calculus
Section 39447
Fall 2020

Lectures: MWF 1:00 – 1:50pm, online
Instructor: Spencer Gerhardt
Course Webpage: https://blackboard.usc.edu/webapps/login/
Email: sgerhard@usc.edu
Office Location: https://usc.zoom.us/j/5478778449
Office Hours: MW 2 – 3pm, W 7:30 – 8:30pm, or by appointment

Course Description: (4 units) Derivatives; extrema. The definite integral; the Fundamental Theorem of Calculus. Extrema and definite integrals for functions of several variables. Not available for a credit toward a degree in Mathematics.

Prerequisites: Either Math 108 or Math 117.

Text: Hughes-Hallett, et al., **Applied Calculus**. Sixth Edition. ISBN: 978-1-119-39935-3. Please note that we are using a custom version that is not sold on Amazon. You may purchase **WileyPLUS** including the text and online access code through Blackboard.

Discussions: TTh, see your class schedule for the specific room and time.

Teaching Assistant: Wuji Zhang
Email: wujizhan@usc.edu
Office Hours: Math Center Schedule

Math Center: The virtual Math Center is open Monday-Friday from 8am to 7pm on most days. It is primarily run by math graduate students here at USC. The office hours of your TA will also be held in the Math Center, although you can go to the Math Center at any time it is open to ask for help.

LOGISTICS

Our course will use the following online systems:

- Blackboard as the main hub for all communication, links, and course materials.
- Zoom for lectures, office hours, and exams.
- **WileyPLUS** as our required textbook and online homework system.
- Gradescope for all written classwork.

You will access the latter systems through links in our Blackboard page and none of them should require separate logins. We'll work through the initial setup in our first lecture. All are free except for WileyPlus, which costs about the same as a standard textbook.

Lectures will be held MWF in Zoom from 1:00 – 1:50pm PST.

Zoom etiquette: This will be a hands-on course with interaction in small groups, and we'll try to maintain the atmosphere and norms of a classroom as much as possible, meaning that you should be in lecture on time and have your **cameras on** for meetings.

To register for **WileyPLUS**, just click on any of the WileyPLUS links in the "Content" folder of our Blackboard page and you'll be prompted to purchase online-only access. All other assignments will be handled through the Gradescope link in Blackboard and you can register with the Entry Code: **MDBBBX** .

You will need to submit your documents to Gradescope in PDF format.

There are many free phone apps that you can use to scan your work, including Adobe Scan and others.

During the submission process please tag each question so the grader can find it.

ASSIGNMENTS

Homework: There will be homework problems posted after each lecture. They will typically be due before the following lecture. Any exercises submitted after their due date will receive half-credit, regardless of circumstances.

Quizzes: There will be quizzes each week except for the midterms. There will be both take home and in-section quizzes. Each quiz will be submitted by the end of the Thursday discussion section.

The in-section quizzes will prepare students for taking the midterms and final exam. The take home quizzes will involve applications of the course material, and will typically be somewhat longer problems. You are welcome to work with other students in your discussion section on the take home quizzes. The lowest two quiz scores will be dropped.

EXAMS AND GRADING

Exams: There will be exactly 3 exams. The first two will be held during the normally scheduled class time. If you cannot be present, you must contact me **before** the exam date to make other arrangements. If you no-show for an exam and attempt to contact me afterward, do not expect to be allowed a make-up exam.

The Final will be a **cumulative** exam, written by the Math Department. It is university policy that no student may take this exam early, or be allowed to skip it.

Each exam will be conducted via Zoom, and will be an open-book, open-note test. You may use calculators, but you are also expected to show all of your work for every question and give detailed explanations for your answers. You may not consult with any other human during the exam, either in person, via chat, or in internet forums. This would be considered a serious violation of the Student Conduct Code.

- **Exam 1**: Friday, September 18 2020.
- **Exam 2**: Friday, October 23 2020.
- **Final Exam**: Wednesday, November 18 2020 (2 – 4pm).

Grading and Curves: Your grade for the course will be calculated as follows:

- Homework: 10%
- Quizzes: 15%
- Midterms: 20% each
- Final Exam: 35%

OTHER POLICIES

Disability Services: Any student requesting accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible.

http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html
213-740-0776 (phone)
213-740-6948 (TDD only)
213-740-8216 (fax)
ability@usc.edu

COURSE CALENDAR

We will cover the following sections of your textbook, on roughly the weeks listed. This calendar is very tentative.

Week 01: Exponential Functions, Business Vocabulary, Sections 1.1 – 1.4.

Week 02: Log Functions and exponential Growth, Sections 1.5 – 1.7.

Week 03: Derivatives, Sections 1.8 – 2.2. Sept 4 is last day to drop and receive a refund.

Week 04: Derivative Rules, Sections 2.3 – 2.5. **Monday Holiday**.

Week 05: Chain Rule, Products/Quotients, Sections 3.1 – 3.3. **Exam 1 on Friday 9/18.**

Week 06: Max/Min problems, Inflection Points, Second Derivative Test, Sections 4.1 – 4.3

Week 07: Applications of Max/Min problems, Sections 4.4 – 4.6. Oct 2 is the last day to drop without a grade of W.

Week 08: Contour Diagrams, Functions of two variables, Sections 8.1 –8.3.

Week 09: Partial Derivatives, Critical Points and Optimization, Sections 8.4 – 8.5.

Week 10: The Definite Integral, Sections 5.1–5.2. **Exam 2 on Friday 10/23.**

Week 11: Interpretations of Definite Integral, Fundamental Theorem of Calculus, Sections 5.3 – 5.5.

Week 12: Average value, Antiderivatives, Sections 5.6, 6.1 – 6.2. Nov 6 is the last day to drop with a W.

Week 13: Definite Integrals, Integration Techniques, Sections 6.3, 6.5 – 6.7.

Week 14: Double Integrals, Sections 11.1– 11.2.

Finals Week: Exam Wednesday, November 18 2020 (2-4pm).