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CONTACT INFO

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See the Math Center webpage for TA Office Hour schedules

Last Update: August 26, 2021. I reserve the right to make necessary modifications mid-semester.

WHAT YOU SHOULD KNOW

Officially, the course prerequisites are either **Math 117** or **Math 108**. But regardless of the courses you've taken or what your grades were, there are certain skills that you will need to have from the very first day of classes. You will be expected to:

- be proficient in **basic arithmetic**. This includes rules of exponents/roots, such as

$$25^{3/2} \quad \text{or} \quad \left(10^{-3}\right)^2 \quad \text{or} \quad 4^6 \cdot 32^{-5}$$

- **solve** either linear or quadratic **equations** for an unknown variable. You should know how to factor, complete the square, and use the quadratic formula.

- be familiar with the **slope** and **intercepts** of a linear equation.

- understand how **functions** work, and know basic vocabulary about them, such as their domains/ranges and whether or not a function is one-to-one. You should be familiar with a good number of examples.

- be able to **graph** a given function, identify features of the graph like intercepts or max/mins, and, importantly, how to find the **intersection** of two graphs.

- be familiar with **graph transformations**; i.e., how an algebraic modification of a function will affect its graph.

- understand when two functions are **inverse** to each other, or how to find the inverse of a given function.

- more specifically, be familiar with both **exponential** and **logarithmic** functions. These will make up a significant number of our examples.

- use basic arithmetic with respect to logarithms; i.e., the **rules of logarithms**, such as

$$\log_2(8) \quad \text{or} \quad \ln\left(\frac{x^2}{y^3}\right) \quad \text{or} \quad \log(25000) = 3 + 2\log(5)$$

We will be reviewing some of this material during the first few weeks as students are add/dropping classes. But our review will be exactly that - **a review**. If any of this is new/unfamiliar, you'll be at a *significant* disadvantage going forward. In any case, do not be shy about using outside resources like the USC Math Center or Kahn Academy.

WHAT YOU WILL LEARN

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. (4 units)

Specifically, this is a course in **Business Calculus**, so you should expect many topics, definitions, and applications that do not occur in a typical "Calculus 1" course. Our main goals will be to help you:

- develop and practice Calculus knowledge and computational skills,

- gain an intuition for a variety of rates of change/growth,

- differentiate between absolute data and relative data,

- read, write, and speak about Mathematics in a coherent and consistent way.

DAILY LOGISTICS

Each Monday/Wednesday/Friday I will deliver lectures at **9-9:50am PST** (Section 39429) and at **10-10:50pm PST** (Section 39432). The two lectures on each day will be the same. I will record all lectures live (via Zoom) from our assigned classrooms. Therefore, on each day you may choose whether you'd like to attend in-person, participate via Zoom, or watch the recording later.

The discussion sections will be led by the Teaching Assistants each Tuesday/Thursday in a similar format. In these discussions you will practice your own skills, both solo and in small groups. The classwork you complete in these discussions will be due in Gradescope at **7pm PST** that same day. Late work will not be accepted under any circumstances and the class attendance will be checked against the Gradescope submissions. However, from the ∼24 discussion sections we will drop the lowest **eight** scores.

Every student who chooses to attend a classroom in person must wear a **mask** that covers the entire nose and mouth. This rule will be in effect for the entirety of the semester.

TECH SETUP

Our course will use the following online systems:

- **Blackboard** as the main hub for all communication, links, and course materials

- **Zoom** for lectures, discussions, and office hours

- **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.

For all live **Zoom** sessions you will need a camera, microphone/speakers, and a stable internet connection. If any of this is an issue you can also use the free Zoom app for cell phones and tablets.

To register for **WileyPLUS**, do **not** go to the WileyPLUS website. Instead, just go to the "WileyPLUS" folder on our Blackboard page and click on any of the WileyPLUS links. You'll be prompted to register for online-only access, which includes an online textbook. **You do not need to buy a physical textbook**.

There will be homework sets due at **7pm PST** on most weekdays so you are expected to do problems every day and stay ahead of the due dates. Any exercises submitted after their due date will receive half-credit, regardless of circumstances.

All other assignments will be handled through the **Gradescope** link in Blackboard and you can register with the Entry Code: **6P7BDK**.

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 you must tag each question so the grader can find it.

EXAMS AND GRADING

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Exam 1: Friday, 24 September 2021

Exam 2: Friday, 29 October 2021

Final Exam: Wednesday, 08 December, 2-4pm PST

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The timed midterms will be held **in-person** during our regular lecture periods. If you cannot be there on the date of an exam, 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, so plan your holiday travel appropriately.

Your grade for the course will be calculated as follows:

- Homework: 10%

- Discussion classwork: 15%

- Midterms: 20% each

- Final: 35%

Individual exams and quizzes will **not** be curved, except in the rare case of a typo or error in a question that makes the question unsolvable. For record-keeping during the semester, letter grades will be assigned based on standard 10-point intervals (A: 100-90%, B: 90-80%, etc.) with plusses and minuses given appropriately.

At the end of the course, it's **possible** that letter grades may be adjusted to reflect the final distribution of the scores in the class. Such a curve would always be in your favor, else the standard 10-point interval would apply. However, no one will know if such a curve is necessary, or what the curve would be, until all grades are in and all drops are made. Don't bother asking if there will be a curve, because even if I knew, I wouldn't tell you.

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POLICIES

Calculator Policy: For quizzes and exams you may use any standard scientific calculator that doesn't connect to the internet or a phone line. You may **not** use graphing calculators.

Academic Conduct: Don't cheat. You're encouraged to work together on homework and most discussion questions, but each student should submit their own work for grading.

As a general guideline: If you talk to someone about a problem, hear a good idea and scratch down some notes, then go home to write it up, that's collaboration. If you write up a solution while *looking directly* someone else's work, that's cheating.

If you have questions about what constitutes "cheating", or what will happen if you are caught, please review the Student Conduct Code or the General USC Policies.

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SUPPORT SYSTEMS

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
`studenthealth.usc.edu/counseling`
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

Office of Student Accessibility Services - (213) 740-0776
`osas.usc.edu`
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

Any student requesting accommodations based on a disability is required to register with DSP each semester. They will provide you with a letter of verification for that semester. Please deliver this letter to me as early in the semester as possible.

Notetakers: I often have requests from DSP for well-organized students who are willing to make their class notes available to approved DSP students. The DSP Office typically pays a nominal amount to the notetaker for their trouble. If you are interested in doing this, please contact me or email DSP directly at `notetake@usc.edu`.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free & confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free & confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 — Title IX – (213) 821-8298
equity.usc.edu,titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity—Title IX for appropriate investigation, supportive measures, and response.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Info on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.

COURSE CALENDAR

We will cover the following sections of your textbook, on roughly the weeks listed. Note that Chapter 8 is moved forward. This calendar is very tentative.

Week 01: Introductions, Sections 1.1 – 1.6

Week 02: Sections 1.7 – 1.9, 2.1 – 2.2.

Week 03: **Monday Holiday.** Sections 2.3 – 2.5. Drop deadline is Sep 10 (with refund).

Week 04: Sections 3.1 – 3.3.

Week 05: Section 3.4. **Exam 1 on 09/24.**

rates of change

Week 06: Sections 4.1 – 4.3.

Week 07: Sections 4.4, 8.1 – 8.2. Second drop deadline is Oct 08 (no refund).

Week 08: Sections 8.3 – 8.4. **Fall Recess (Thurs/Fri)**.

Week 09: Sections 8.4 – 8.5.

Week 10: Section 8.6. **Exam 2 on 10/29**.

optimization

Week 11: Sections 5.1 – 5.5.

Week 12: Sections 5.6, 6.1 – 6.3. Withdrawal deadline is Nov 12 (with a W on record).

Week 13: Sections 6.4 – 6.6.

Week 14: Section 6.7. **Thanksgiving Break (Wed/Thurs/Fri)**.

Week 15: Double Integrals.

integration

Finals Week is 08-15 Dec 2021. **Our final exam**: Wednesday, 08 December, 2-4pm PST.