

Math 118 - Fundamental Principles of Calculus

4 units, Spring 2017, MWF 1:00-1:50pm in VKC 152

Contact information

- **Instructor:** Christian Zillinger
 - **Office hours:** W 10-12, W 2-3
 - **Office:** KAP 416F
 - **email:** zillinge@usc.edu
- **Teaching Assistant:** Mengsha Yao
 - **Consulting hours:** tba
 - **Location:** Math Center, KAP 263
 - **email:** mengshay@usc.edu

Course description

We will cover derivatives and integration and consider various applications. These include optimization (extrema) and computing definite and indefinite integrals, also in several variables.

Prerequisite: Math 108 or Math 117 or placement exam.

Learning objectives

A particular focus will be on getting accustomed to and fluent in various techniques of differentiation and integration and their applications. Students will learn about

- Applications of derivatives in optimization. Here, we will in particular consider examples from economics.
- How to use calculus for modeling, e.g. how to set up such optimization problems
- Common techniques of differentiation and integration and their efficient use: chain rule, product rule, substitution, integration by parts, etc. .
- Finding and computing indefinite and definite integrals.

Students will improve their problem solving skills and learn how to apply calculus to analyse problems.

Required reading

Hughes-Hallett. Applied Calculus (w/ WPOrion Card Set) (USC) (CUSTOM) Here, we will make use of WileyPlus, an online platform provided by the publisher. More information will be provided in the first week of classes.

Online resources

WileyPlus

<https://www.wileyplus.com> This platform provides an electronic versions of homework and assignments.

Blackboard

Materials such as **homework assignments** or **results** will be posted on blackboard, <http://blackboard.usc.edu> . You are required to **check blackboard regularly**.

Description and Assessment of Assignments

There are weekly **homework** sets available on blackboard. Not all of these have to be handed in. Instead, in some weeks **quizzes** will be administered in the discussion sessions on Tuesdays. Information for a given week will be given out in class and announced on blackboard. Discussion and collaboration is strongly encouraged, but only individual, independent submissions will be accepted.

Two midterms will be administered in-class on Monday, **February 13** and **March 27**.

This lecture has a **common final exam** on Wednesday, **May 10 at 8am-10am**, which is an **exception to the final exam schedule**, see <https://classes.usc.edu/term-20171/finals/> .

Grading breakdown

Assignment	% of Grade
Homework+Quizzes	15%
Midterm I	25%
Midterm II	25%
Final Exam	35%
Total	100%

These weights might still change in the beginning of term for consistency with other sections.

Assignment Submission Policy

Problem sets will be available on Blackboard every Wednesday and are due in discussions on the following Tuesday. In some weeks, instead quizzes will take place in the discussions on Tuesdays.

Additional Policies

In the interest of fairness to all students, there will be no make-up exams or quizzes and late homework will not be accepted without prior approval by the instructor. In case of scheduling conflicts or emergencies, you should contact me as early as possible (at least two weeks; for sudden sickness at least before the scheduled time).

In exams **no calculators** or other technical tools (smartphones etc) will be allowed.

Getting help

If you have any feedback, problems, questions or want to chat, please do not hesitate to drop by at my office. Learning mathematics requires active practice and it can be very difficult to catch up again, so I encourage you to come by already early in the semester.

The Math Center, <http://dornsife.usc.edu/mathcenter>, is located in KAP 263 and is intended to give students a place to work on homework and get help from graduate students. During the Spring and Fall semesters, the Math Center is open Monday to Thursday 8am to 7pm and Friday 8am to 5pm. The TA's consulting hours will take place in the math center.

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, Behavior Violating University Standards, <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions>. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity <http://equity.usc.edu> or to the Department of Public Safety <http://adminopsnet.usc.edu/departments/departments-public-safety>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and

the sexual assault resource center webpage <http://sarc.usc.edu> describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.