

ECON 11B – Mathematical Methods for Economists II

Quarter: Summer Session I, 2016

Class Time:

MW: 9:00am–12:30pm

Class Location:

Physics Sciences 140

Instructor: Wei Xu

email: wxu11@ucsc.edu

Office: Room 405C, E2

Office Hours:

MW: 2:00pm-3:00pm (or by email appt.)

1 Course Description

1.1 Course materials and objectives:

Coupled with Econ 11A, the course is designed to pave the way for students to a clear understanding of the fundamental concepts of calculus and related topics as well as a range of skills allowing them to work effectively with the concepts and with applications to economics in particular. Because this is essentially a maths class, students should be prepared for general calculation and technical proofs as well with emphasis on developing the skills of algebraic calculation.

The course materials are drawn from univariate and multivariate calculus including topics of definite and indefinite integrals, elementary differential equations, partial derivatives, linear and quadratic approximation, optimization with and without constraints, and Lagrange multipliers.

The knowledge of precalculus and univariate differentiation is a prerequisite. Econ 11A (or AMS 11A, or Maths 11A, or Maths 19A, or any other equivalent) is required as preparation.¹

1.2 Textbook:

Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences (13th edition) by Ernest F. Haeussler, Jr., Richard S. Paul, and Richard J. Wood.

The UCSC custom edition is more budget friendly and contains all of the materials covered in the course, and is available at the bookstore. Furthermore, there are also book copies (probably of older editions) available in the library.

The textbook is not required as the class notes will include all the necessary concepts, skills, and techniques. However, the textbook is well organized and provides more than plenty of explanations, examples, and exercises that definitely benefit the learning experience. Besides, **the quiz problems and some of the exam problems will resemble the review problems in the textbook.** Students are also encouraged to take other textbooks of calculus as reference.

1.3 Ecommons:

An ecommons page has been created for this course, where the syllabus, additional materials, notes, and review questions for midterm and final can be found. Let me know if there is any problem accessing the webpage as well as its contents. I will also post grades on this page so that students know where they stand.

¹Prerequisite course is waived for non-UCSC students.

2 Grading and assessments

2.1 Course requirements:

Attendance is not mandatory, but is highly recommended. I encourage all of you to utilize the resources available for this course, especially the office hours. I also expect all the students to be keeping up with the class materials as past students have found this course to be very challenging. **Integration is much harder and trickier than differentiation in general.**

Note that there will be **two quizzes, one midterm and one final exam**, all of which are closed-book exam. Quizzes are short and each consists of only 2 to 3 questions. Midterm is about 1.5 to 2 hours long, while the final shall take nearly the whole class of the last day. Much of the lessons in the course build off of older materials. In this way, they are all comprehensive. However, the content of each exam will be weighed much more heavily on the latest part of the course. Make-up quizzes or exams will not be given, so plan accordingly. **Cheating in any form is intolerable, and so is any other type of dishonesty. Such behavior will earn the student an automatic fail of the course.**

There will be no homework or assignments. But students are highly recommended to practice with the review questions following every section and chapter in the textbook. Instead, I will spend the first 20 minutes of each class (when there is no scheduled quiz or exam) with some examples of the review questions that helps in going over the materials of the previous class.

2.2 Grading policy:

The overall grade is determined by the components as follows.

- class attendance and participation: 5%
- quizzes: 10%
- midterm: 40%
- final: 50%

Note that the scores of midterm and final are likely to be curved to accommodate the overall class average. This curve can only benefit students (especially so for those who keep improving themselves). Therefore, the overall grade will be assessed according to a student's absolute and relative achievements.

The 5% of class attendance and participation constitutes bonus points that motivate students to study actively during the class.

3 Planned Schedule of Class

The proposed schedule is subject to change according to actual teaching/learning efficiency. For example, the topic of differential equations is likely to be moved up to the first half of the session (i.e., before July 4), and hence included in the midterm. However, the dates of quizzes and exams are set for sure. The final review is expected to be in the form of *Q&A*.

A typical day starts with 20 minutes of review questions and 90 minutes of lecturing followed by a 10-minute break, and it ends with another 90-minute class.

Table 1: Class Calendar

Week	Date	Materials	Textbook Chapters
1	June 20	review of univariate differentiation, differentials, indefinite integral	Ch14
	June 22	integration w/ initial conditions, additional integration formulas and techniques	
2	June 27	definite integral, area b/w curves, economics application, Quiz 1	Ch15
	June 29	integration by parts, average value of a function	
3	July 4	National Holiday	
	July 6	Midterm , differential equations	
4	July 11	multivariate partial derivatives, applications	Ch 17
	July 13	implicit partial differentiation, approximation, chain rule, Quiz 2	
5	July 18	optimization w/ and w/o constraints, economics applications	
	July 20	review Final	

4 Other Information

4.1 Deadlines for drop and withdraw

- The drop deadline of summer session I is June 27, 2016.
- The withdraw deadline of summer session I is July 8, 2016.

4.2 DRC accommodations

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, **preferably within the first week** of the Summer quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.

You may visit the webpage: <http://drc.ucsc.edu/services/drc-students/request-services.html> and follow the procedure to request a DRC service.

5 Tips for Success

To succeed in the class - in the language analogy - for conversational fluency, it is very important that you not only read the text but also do the exercises, because to achieve proficiency in mathematics, as in any other subject, there really is no substitute for practice, practice, practice!