Economics 11B: Mathematical Methods for Economists II
2015 Summer Session II

Instructor: Raul Tadle
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Office Hours: Mondays 3 PM – 5 PM
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Course Description

The materials in the course will cover mathematical tools and reasoning, with applications to economics. Topics are drawn from multivariable differential calculus and single variable integral calculus, and include partial derivatives, linear and quadratic approximation, optimization with and without constraints, Lagrange multipliers, definite and indefinite integrals, and elementary differential equations (course catalogue).

Required Text

Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences, Thirteenth 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 older editions available in the library, but take note of the differences in the various editions, especially in terms of the end of the chapter questions as well as text materials.

Course Schedule and Location

Physical Sciences Room 140
Tuesdays and Thursdays, 9:00 AM - 12:30 PM

Course Requirements

Attendance is not mandatory, but is *highly* recommended. I encourage all of you to utilize the resources available for this course, such as the office hours, TA sections, and tutoring sessions. I also expect all the students to be keeping up with the class material as past students have found this course to be very challenging. In addition, there is a tutor for the class. The tutor is an excellent resource for learning the class materials in a different way as well as for catching up with the course topics.

Note that there will be two midterms and a final exam. Much of the lessons in the course build off of older materials. In this way, they are comprehensive. However, the content of the final will be weighed much more heavily on the last part of the course (the materials covered after the

second midterm). Make-up exams will not be given, so plan accordingly. Please bring your student I.D. or driver's license to every exam. **Cheating is not tolerated, and those who are caught will be reported and will automatically fail the course.**

To make sure that there will be enough time to finish the exam as well as to motivate students to attend the full lecture, the midterms will be given during the second part of the class. However, the final will be given on the last day and no lectures will be held then.

There will also be 4 Problem Sets. These will be assigned to make sure that students are on track with the material and are able to pinpoint the topics they need to review. Students must show all of their work to receive full credit. Note that these problem sets are due by 2 PM on the due date. Please turn in hard copies, but in the case of an emergency, digital copies will be accepted. **Late submissions will not be accepted.**

Grading

Problem Sets	15%
Midterm 1	25%
Midterm 2	25%
Final	35%

Note that the overall grade will be curved to accommodate the different variables that affect the overall class average. This curve can only benefit students.

Ecommons

I have created an ecommons page for the course. Let me know if there are any problems accessing it as this page will be vital in the class. I will be posting grades on this so that students know where they stand.

TA Sections

TA: Mario Gonzalez
Email: mrgonz@ucsc.edu
Sections: Tuesdays 1:00 PM – 3:00 PM at Physical Sciences 130
Wednesdays 9:00 AM – 11:00 AM at Natural Sciences Annex 103

Learning Support Services

Tutor: Jessica Loya
Email: jmloya@ucsc.edu
Sessions: Tuesdays 3:30 PM – 4:30 PM ARCenter Rm 221
Thursdays 2:15 PM – 3:15 PM ARCenter Rm 221
If demand is high: Thursdays 4:00 PM – 5:00 PM Location TBD

Tutoring sessions are not to exceed ten students, but will likely be groups of around five students. Students may attend multiple sessions each week. To sign up for the services, use the OTSS link: https://eop.sa.ucsc.edu/OTSS/tutorsignup/

DRC Accommodations

If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me as soon as possible, preferably within the first week of the Summer Session. Contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu for more information.

Course Schedule[1]

Week 1:

Tuesday (7/28): Syllabus Discussion, Math Review, Differentials, Antiderivatives, Indefinite Integrals, Elementary Integration Formulas

Thursday (7/30): Integration with Initial Conditions, Additional Integration Techniques
Problem Set 1 due

Week 2:

Tuesday (8/4): Definite Integral, The Fundamental Theorem of Integral Calculus, Properties of Definite Integral, Review Questions for Midterm 1
Problem Set 2 due

Thursday (8/6): Area between Curves
Midterm 1

Week 3:

Tuesday (8/11): Additional Examples for Area between Curves, Integration by Parts, Consumer Surplus, Producer Surplus, and Applications

Thursday (8/13): Separable Differential Equations, Partial Derivatives, Implicit Partial Differentiation, Applications of Partial Derivatives
Problem Set 3 due

[1] This schedule is subject to change.

Week 4:

Tuesday (8/18): Higher Order Partial Derivatives, Optimization (first and second derivative test), Review Questions for Midterm 2
Problem Set 4 due

Thursday (8/20): Constrained Optimization
Midterm 2

Week 5:

Tuesday (8/25): Output and Utility Maximization, Cost Minimization
Review Questions for Final Exam

Thursday (8/27): **Final Exam**