

# ECON 1088-100 { Math Tools for Economists II

Summer 2018, Term A

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<b>Instructor:</b>	Brach Champion	<b>Time:</b>	M-F 9:15am { 10:50am
<b>Email:</b>	<a href="mailto:brachel.champion@colorado.edu">brachel.champion@colorado.edu</a>	<b>Room:</b>	HLMS 267
<b>Office Hours:</b>	M-F 11:00am { 12:00pm	<b>Office:</b>	ECON 309A

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## 1 Course Information

**Course Website:** <https://learn.colorado.edu/>

**Required Textbook:** Knut Sydsaeter, Peter Hammond, Arne Strom and Andres Carvajal, *Essential Mathematics for Economic Analysis*, Pearson, 5th ed., 2016 (3rd or 4th edition are also acceptable).

**Prerequisites:** ECON 1078 or equivalent.

**Course Description:** This class is the second of a two course sequence, building upon the basic foundation developed in ECON 1078. We will study derivatives, optimization, and integrals (chapters 6, 7, 8, 9 and 11 in the textbook). These tools will help you understand the mathematical structure of modern economics and the models used to explain human behavior. A strong grasp of these concepts is **necessary** (but not sufficient) to succeed in later economics courses.

## 2 Course Policies

### General policies

Class periods will be devoted to lecture and practice, which means that participation is important and will be a decent component of your grade. Participation will be recorded with pre-class questions on D2L or in-class collected questions. I will record attendance for the first week of class, and if you do not attend the first three class meetings and do not contact me, I will administratively drop you according to departmental procedure.

**Students are not permitted to use any electronic devices during class time. This includes laptops, tablets and cellphones.** While these devices can be useful in learning mathematics, in the classroom they are no substitute for paper and pencil and are generally detrimental to your own education and to the education of those around you. Students violating this policy will be asked to put away their device(s) or to leave the classroom if the problem persists. Any student may petition for an exemption by emailing me prior to June 8. Students granted an exemption will be expected to use their device(s) as inconspicuously as possible to reduce any negative externalities.

Please allow 24 hours for me to respond to emails. I will not discuss grades over email per FERPA guidelines.



I will periodically recommend videos from [3Blue1Brown's](#) YouTube series *Essence of Calculus* to supplement the material covered. Each video is an excellent presentation of the deep intuition behind calculus and will help answer the question "What am I even doing?". Viewing is optional, but highly recommended.

## Exams

**Midterms:** Three midterms will be given during lecture time on the fixed dates in the schedule given in this syllabus. The lowest exam score will be dropped, and therefore **no makeup or separate time exams will be given** (except for students with documented accommodations). You must notify me with documentation of your accommodation at least one week before the first exam in order for it to apply.

**Final Exam:** The final exam is cumulative. The exam is held in our regular classroom on the last day of class, July 6, 9:15 { 10:50am. This date is non-negotiable.

Partial credit will be awarded on all exams.

## Cheating

If you are caught cheating in any fashion (on exams or homework) you will be given an *F* for the semester and your case will be reported to the Honor Code Council for review.

## 3 University Policies

**DISABILITY POLICY:** I am committed to providing everyone the support and services needed to participate in this course. If you qualify for accommodations because of a disability, please submit to your instructor a letter from Disability Services in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu).

**HONOR CODE:** Students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. Incidents of academic misconduct will be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from myself and non-academic sanctions (including but not limited to university probation, suspension, or expulsion).

may be subject to discipline. Faculty has the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which we express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences or race, culture, religion, politics, sexual orientation, gender variance and nationalities.

**DISCRIMINATION AND HARASSMENT POLICY:** CU Boulders policy on Discrimination and Harassment can be found on the university website. The policy on Sexual Harassment and on Amorous Relationships applies to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH and the campus discrimination and harassment resources can be found at [www.cu.edu/odh](http://www.cu.edu/odh).

## 4 Tentative Schedule

The daily coverage might change as it depends on the progress of the class. The sections listed below denote the topics to be covered and their associated textbook sections. *EC* denotes the relevant *Essence of Calculus* video.

Dates	Content
June 4	Topics: Administration, Introducing Derivatives Sections: 6.1, 6.2, 6.5; <i>EC</i> Ch. 1, Ch. 2
June 5	Topics: Uses of Derivatives; <b>Pre-test due by 5pm</b> Sections: 6.3, 6.4, 6.6; <i>EC</i> Ch. 3
June 6	Topics: Rules of Derivatives Sections: 6.7, 6.8; <i>EC</i> Ch. 4
June 7-8	Topics: More Rules of Derivatives; <b>Homework 1 due 6/8 by 5pm</b> Sections: 6.9, 6.10, 6.11 ; <i>EC</i> Footnote, Ch. 5
June 11	Topics: Review; <b>Midterm 1</b> Sections: Ch. 6 review
June 12-13	Topics: Using Derivatives Sections: 7.1, 7.2, 7.7, 7.8; <i>EC</i> Ch. 6, Ch. 7
June 14-15	Topics: Introduction to Optimization Sections: 8.1, 8.2, 8.3
June 18	Topics: Tools for Optimization in Economics Sections: 8.6, 8.7
June 19-20	Topics: Review; <b>Homework 2 due 6/19 by 5pm, Midterm 2 6/20</b> Sections: Ch. 7/8 review
June 21	Topics: Multivariable Functions Sections: 11.1, 11.5
June 22	Topics: Partial Derivatives Sections: 11.2, 11.6
June 25-26	Topics: Using Partial Derivatives, Review Sections: 11.7, 11.8, 14.1, Ch. 11 Review
June 27-28	Topics: Review; <b>Homework 3 due 6/27 by 5pm, Midterm 3 6/28</b> Sections: Ch. 11 Review
June 29	Topics: Introduction to Integrals Sections: 9.1, 9.2; <i>EC</i> Ch. 8
July 2	Topics: Anti-derivatives and Their Interpretations, Intro to Definite Integrals Sections: 9.3, 9.4; <i>EC</i> Ch. 9
July 3-5	Topics: Definite Integrals, Review, <i>No class on July 4th</i> , <b>Homework 4 due 7/5 by 5pm</b> Sections: 9.3, 9.6, Ch. 9 Review, Semester Review
July 6	<b>Final Exam: Fri., June 6 9:15am { 10:50am</b>