

# 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.

- *No makeup assignments will be given.*

## Grades

- **Distribution:** Below is the weight given to each of the assignments you are expected to complete:

Pre-test	2%	Midterm	25%	Final Exam	30%
Participation	8%	Midterm	25%	Homework	10%

- **Reporting:** Grades will be uploaded to D2L as assignments are graded.
- **Curving:** Midterms *may* be curved individually, and a curve *may* be applied to the overall course grade to conform to departmental standards. I will automatically increase final course grades that are 0.5% below any grade cutoff after any final grading curve has been applied.
- **Letter Grade Cutoffs:** Below is the letter grade you will receive for the final score given in the class:

$\geq 93$	A	87-89.9	B+	77-79.9	C+	67-69.9	D+	$\leq 59.9$	F
90-92.9	A-	83-86.9	B	73-76.9	C	63-66.9	D		
		80-82.9	B-	70-72.9	C-	60-62.9	D-		

- **Grade Adjustments:** Other than the 0.5% bump discussed above, *I will not grant any request to increase your grade to meet a certain cutoff.* You will receive the grade that *you* earned throughout the course. If you are concerned about your grade(s) you should immediately come talk to me. I will do everything I can to help you be successful in this course.

## Homework

- A pre-test assignment due **June 5 by 5pm** will check your ability to use the prerequisite material. This assignment is graded only for completion.
- Recommended practice problems from your textbook will be posted on D2L. Detailed solutions will be either covered in class or posted on D2L. These problems will not be graded, but they will benefit your exam preparation.
- You will submit one graded homework assignment at 5pm the day before each exam (for a total of 4). Late assignments will receive a score of 0. The problems will mirror the types of questions appearing on the exams. Working in groups is encouraged, however each student must turn in an individual assignment with the names of group members written at the top of the page. Groups may have at most 3 members. I will randomly choose two problems from each assignment to grade. Your lowest homework score will be dropped.

- 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).
- **RELIGIOUS OBSERVATION POLICY:** Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. If you have a conflict, please make arrangements with me no later than the first week of the semester.
- **CODE OF BEHAVIOR POLICY:** Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards

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 obtained at <http://www.colorado.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	<ul style="list-style-type: none"> <li>• Topics: Administration, Introducing Derivatives</li> <li>• Sections: 6.1, 6.2, 6.5; <i>EC</i> Ch. 1, Ch. 2</li> </ul>
June 5	<ul style="list-style-type: none"> <li>• Topics: Uses of Derivatives; <b>Pre-test due by 5pm</b></li> <li>• Sections: 6.3, 6.4, 6.6; <i>EC</i> Ch. 3</li> </ul>
June 6	<ul style="list-style-type: none"> <li>• Topics: Rules of Derivatives</li> <li>• Sections: 6.7, 6.8; <i>EC</i> Ch. 4</li> </ul>
June 7-8	<ul style="list-style-type: none"> <li>• Topics: More Rules of Derivatives; <b>Homework 1 due 6/8 by 5pm</b></li> <li>• Sections: 6.9, 6.10, 6.11 ; <i>EC</i> Footnote, Ch. 5</li> </ul>
June 11	<ul style="list-style-type: none"> <li>• Topics: Review; <b>Midterm 1</b></li> <li>• Sections: Ch. 6 review</li> </ul>
June 12-13	<ul style="list-style-type: none"> <li>• Topics: Using Derivatives</li> <li>• Sections: 7.1, 7.2, 7.7, 7.8; <i>EC</i> Ch. 6, Ch. 7</li> </ul>
June 14-15	<ul style="list-style-type: none"> <li>• Topics: Introduction to Optimization</li> <li>• Sections: 8.1, 8.2, 8.3</li> </ul>
June 18	<ul style="list-style-type: none"> <li>• Topics: Tools for Optimization in Economics</li> <li>• Sections: 8.6, 8.7</li> </ul>
June 19-20	<ul style="list-style-type: none"> <li>• Topics: Review; <b>Homework 2 due 6/19 by 5pm, Midterm 2 6/20</b></li> <li>• Sections: Ch. 7/8 review</li> </ul>
June 21	<ul style="list-style-type: none"> <li>• Topics: Multivariable Functions</li> <li>• Sections: 11.1, 11.5</li> </ul>
June 22	<ul style="list-style-type: none"> <li>• Topics: Partial Derivatives</li> <li>• Sections: 11.2, 11.6</li> </ul>
June 25-26	<ul style="list-style-type: none"> <li>• Topics: Using Partial Derivatives, Review</li> <li>• Sections: 11.7, 11.8, 14.1, Ch. 11 Review</li> </ul>
June 27-28	<ul style="list-style-type: none"> <li>• Topics: Review; <b>Homework 3 due 6/27 by 5pm, Midterm 3 6/28</b></li> <li>• Sections: Ch. 11 Review</li> </ul>
June 29	<ul style="list-style-type: none"> <li>• Topics: Introduction to Integrals</li> <li>• Sections: 9.1, 9.2; <i>EC</i> Ch. 8</li> </ul>
July 2	<ul style="list-style-type: none"> <li>• Topics: Anti-derivatives and Their Interpretations, Intro to Definite Integrals</li> <li>• Sections: 9.3, 9.4; <i>EC</i> Ch. 9</li> </ul>
July 3-5	<ul style="list-style-type: none"> <li>• Topics: Definite Integrals, Review, <i>No class on July 4th</i>, <b>Homework 4 due 7/5 by 5pm</b></li> <li>• Sections: 9.3, 9.6, Ch. 9 Review, Semester Review</li> </ul>
July 6	<ul style="list-style-type: none"> <li>• <b>Final Exam: Fri., June 6 9:15am – 10:50am</b></li> </ul>