

Course Description

This class is designed to familiarize students with the intersection of economics, data and computer programming. The value of undergraduate economics is to present students with a basic idea of how economic models are used to explain real world events. This class will take basic economic models and operationalize these models by developing computer simulation models that links the theoretical models to real data. Students will primarily use excel to develop both static and dynamic models. The sequence of topics will start with a graphical model, then present the model mathematically, and then construct the computational form of the model.

After successfully completing this course the student will be able to:

1. Construct the connections between a graphical model and its mathematical counterpart
2. Extend the mathematical model into a computational form
3. Perform computer simulations to better understand how economic theory is used to explain real world events

Textbooks and course materials

- Online readings

Software Programs: The software required for the class is Gretl. It is free to download at the following website:

<http://gretl.sourceforge.net/>

Excel is also required.

We may be downloading additional software programs during the semester.

Colorado State University Guidance

Academic Integrity:

As per university policy, "Any student found responsible for having engaged in academic dishonesty will be subject to academic penalty and/or University disciplinary action." (*General Catalog 2009-2010*, 1.6, p. 6). Any academic dishonesty in this course will result in a grade of "F" for the course and will be reported to the Office of Conflict Resolution and Student Conduct Services.

Please be aware that the General Catalog specifically identifies the following examples of academic dishonesty: cheating in the classroom, plagiarism, unauthorized possession or disposition of academic materials, falsification, and facilitation of cases of academic dishonesty. Plagiarism is defined as follows:

"Plagiarism includes the copying of language, structure, ideas, or thoughts of another, and representing them as one's own without proper acknowledgment. Examples include a submission of purchased

research papers as one's own work; paraphrasing and/or quoting material without properly documenting the source." (*General Catalog 2009-2010*, 1.6, p. 6).

Accommodation of students with disabilities (refer all students with disabilities to Resources for Disabled Students -- see <http://rds.colostate.edu/accommodation-process>).

Students are expected to attend all classes, however, there are some exceptions

ATTENDANCE POLICY

The *Academic Faculty and Administrative Professional Manual* notes that students must be exempted from your regular attendance policy when they attend University sanctioned activities such as athletic events. (See <http://facultycouncil.colostate.edu/files/manual/sectioni.htm#1.14.4>). In addition, the University has formulated a policy to avoid religious discrimination: "Reasonable accommodation should be made to allow individuals to observe their established religious holidays. Such accommodation, in the case of a student, might be the rescheduling of an exam or giving a make-up exam, altering the time of the student's presentation, releasing a graduate assistant from teaching or research responsibilities, etc."

Class attendance regulations can be found here:

<http://catalog.colostate.edu/general-catalog/academic-standards/academic-policies/>

COURSE CONTENT NOTE: CSU's Discrimination, Harassment, Sexual Harassment, Sexual Misconduct, Domestic Violence, Dating Violence, Stalking, and Retaliation policy designates faculty and employees of the University as "Responsible Employees." This designation is consistent with federal law and guidance, and requires faculty to report information regarding students who may have experienced any form of sexual harassment, sexual misconduct, relationship violence, stalking or retaliation. This includes information shared with faculty in person, electronic communications or in class assignments. As "Responsible Employees," faculty may refer students to campus resources (see below), together with informing the Office of Support and Safety Assessment to help ensure student safety and welfare. Information regarding sexual harassment, sexual misconduct, relationship violence, stalking and retaliation is treated with the greatest degree of confidentiality possible while also ensuring student and campus safety.

- Any student who may be the victim of sexual harassment, sexual misconduct, relationship violence, stalking or retaliation is encouraged to report to CSU through one or more of the following resources:
 - Emergency Response 911
 - Deputy Title IX Coordinator/Office of Support and Safety Assessment
(970) 491-1350
 - Colorado State University Police Department (non-emergency)
(970) 491-6425

For counseling support and assistance, please see the CSU Health Network, which includes a variety of counseling services that can be accessed at: <http://www.health.colostate.edu/>. And, the Sexual Assault Victim Assistance Team is a confidential student resource that does not have a reporting requirement and that can be of great help to students who have experienced sexual assault. The web address is <http://www.wgac.colostate.edu/need-help-support>.

Grading Components

Assessment Components – 4 problem sets – 25% each

Problem Set 1

- Supply and demand curve model

Problem Set 2

- Simple growth model examining the tradeoff between consumption and investment

Problem Set 3

- Harris-Todaro Model of Urban Unemployment (to be determined)

Problem Set 4

- Modeling areas in consumer theory: utility functions, substitution and income effects, price indices and measures of welfare changes (to be determined)