Apec 8002: Microeconomic Analysis of Production & Choice Under Uncertainty
Fall 2014

Instructor: Terrance Hurley
Office: 248H Ruttan Hall
Phone: 612-625-1238
E-Mail: tmh@umn.edu
Website: http://faculty.apec.umn.edu/thurley/APEC8002.html

Teaching Assistant: Akinori Kitsuki
Office: 218D Ruttan Hall
Phone: 612-625-7242
E-Mail: kitsu002@umn.edu

Lecture: Tuesday/Thursday
Time: 3:00 – 4:15 pm
Where: Magrath Library 8

Recitation: Thursday
Time: 4:30 – 5:45
Where: Ruttan Hall B36

Description: Applied Economics (APEC) 8002 is the second of four courses in the APEC 8001-2-3-4 sequence that is designed to provide first year Ph.D. students in Applied Economics, Carlson School of Management, Health Policy & Management and other programs with a mathematical treatment of fundamental microeconomic concepts that are used extensively in applied research. The focus of this course will be production without and with uncertainty, and competitive, monopoly and monopsony markets.

Recommended Texts: This course will be based on the instructor’s notes posted on the class website. These notes and many homework problems borrow extensively from

MasColell, Winston, & Green (MWG), Microeconomic Theory, Oxford University Press, 1995.

While I suspect you will find the course notes indispensable for the homework assignments and test, you are strongly encouraged to read the suggested material from these other resources to expand your perspective and further develop your understanding of the theory.

Prerequisites: The economics and mathematical background assumed for students enrolling in this class includes intermediate or M.S. level microeconomic theory (e.g., ECON 3101 and
APEC 5151); APEC 8001; linear algebra (e.g., MATH 2243); and multivariate calculus (e.g., MATH 2263).

**Homework:** There will be a homework assignment handed out during most weeks of class. The homework will be due on the assigned date and late homework will not be accepted. Turn in whatever you have had the chance to complete. Homework assignments and their solutions will be posted on the class website. You are encouraged to work together on homework assignments, but are required to submit your own assignment.

**Exams:** There will be one closed book exam on Tuesday, December 9, 2014 from 3:00 – 4:15 pm in Magrath Library 8.

**Grades:** Individual grades A – F will be assigned based on homework assignments (60%) and the exam (40%). Students taking the course on the S-N grade basis must achieve at least a C- to earn an S. No incompletes will be offered. No opportunities for extra credit will be offered.

**Topics in Expected Order of Coverage:**
1. Production (MWG, Ch. 5; Varian Chs. 1 - 6; Chamber Chs. 1 - 4, & 7; Cornes Ch. 5)
   a. Production Possibilities Sets, Production Functions & Distance Functions
   b. Cost Minimization & Revenue Maximization
   c. Profit Maximization
   d. Duality
   e. Aggregation
2. Production Under Uncertainty (CQ Chs. 1 - 5; Review: MWG, Ch. 6; Varian Ch. 11)
   a. Characterizations of Uncertainty
   b. State-Contingent Production Possibility Sets
   c. Cost & Revenue Functions Under Uncertainty
   d. Risk & Uncertainty Preferences
   e. Production Under Uncertainty Examples
   a. Perfect Competition
   b. Monopoly & Monopsony
Recommended Policy Statements for Syllabi

http://policy.umn.edu/Policies/Education/Education/SYLLABUSREQUIREMENTS_APPA.html

Student Conduct Code

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf.

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Use of Personal Electronic Devices in the Classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html.

Scholastic Dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: http://www1.umn.edu/oscai/integrity/student/index.html. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.
Makeup Work for Legitimate Absences

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html.

Appropriate Student Use of Class Notes and Course Materials

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html.

Grading and Transcripts

The University utilizes plus and minus grading on a 4.000 cumulative grade point scale in accordance with the following:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.000</td>
</tr>
<tr>
<td>A-</td>
<td>3.667</td>
</tr>
<tr>
<td>B+</td>
<td>3.333</td>
</tr>
<tr>
<td>B</td>
<td>3.000</td>
</tr>
<tr>
<td>B-</td>
<td>2.667</td>
</tr>
<tr>
<td>C+</td>
<td>2.333</td>
</tr>
<tr>
<td>C</td>
<td>2.000</td>
</tr>
<tr>
<td>C-</td>
<td>1.667</td>
</tr>
<tr>
<td>D+</td>
<td>1.333</td>
</tr>
<tr>
<td>D</td>
<td>1.000</td>
</tr>
<tr>
<td>S</td>
<td></td>
</tr>
</tbody>
</table>

For additional information, please refer to: http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html.

Sexual Harassment

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/polices/SexHarassment.pdf
**Equity, Diversity, Equal Opportunity, and Affirmative Action**

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf.

**Disability Accommodations**

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. Disability Services (DS) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DS at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, https://diversity.umn.edu/disability/.

**Mental Health and Stress Management**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: http://www.mentalhealth.umn.edu.

**Academic Freedom and Responsibility: for courses that do not involve students in research**

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost. [Customize with names and contact information as appropriate for the course/college/campus.]

* Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".