Course Description.

Much of what you saw in 8001–02 was about the ways in which markets work well, and some of this class will be in the same vein. People are rational optimizing agents, whether maximizing utility while facing competitive markets or when participating in strategic situations. Markets clear. In the first section of this course, that will all still be true.

In the second half of the course, though, we will extend our reach outside the domain where markets are perfect. We’ll see that, in fact, market forces don’t always produce desirable outcomes. In the presence of public goods, markets fail. When groups of people attempt to make collective decisions, they face significant barriers. Attempting to achieve good outcomes through the clever use of game theory, as is attempted with mechanism design, is often not much more successful.

This part of micro can be pretty dismal, I know. But I will be careful to give my views on where one can find more optimism than the various impossibility results would suggest. My goal is to help you see how to reconcile the competing demands: for optimality and for realism; for fine theoretical consistency and for practical applicability.

Books and other readings.

The course will draw, where appropriate, on Mas-Colell, Whinston, and Green. You will also want to spend some time with a handful of articles and book chapters. The readings not in MWG will be found at the University library’s online reserve. The web address is reserves.lib.umn.edu. Log in with your X.500 id and password. For most of the course, I will also provide my own lecture notes.

How it all fits together

We start with the treatment of general equilibrium. Leaving aside equilibrium under uncertainty and over time, this material spans five chapters and more than 170 pages in Mas-Colell. We cannot possibly do it justice in three weeks; there is no choice but to trim ruthlessly. My goal is to treat a few major results with some care. The big three are the first and second welfare theorems and the equilibrium existence theorem. If time permits I hope also to introduce Edgeworth’s notion of the core.

The proof of the first welfare theorem is straightforward. Every textbook treats it in the same way. But there are many versions of the second welfare theorem and the existence theorem. I have found my favorites and they are the versions that we will study carefully. Mas-Colell is good background reading on this material.
The rest of the term will include three topics, each of which could easily occupy an entire semester course: public goods; social choice; and mechanism design. Here again the only goal is to show you some of the most fundamental results. In all three, the theme is mostly dismal. Nothing works as we might hope, or at least market forces and decentralized decision-making are not likely to achieve desirable outcomes. I will emphasize the interconnections between them, always trying to explain how (or if) they are relevant to policy.

There will be a set of readings for each, but I have tried hard not to burden you with an excessive reading load. Students will be expected to have read the required readings before each class. I will do a fair bit of straight lecturing, but I will encourage discussion as much as I can. Throughout the term, active participation by all will be expected. Note that your participation in discussion will be used in determining your final grade for the course.

**Assigned Workload**

The assigned workload will include one final exam, held on the last day of class, and a series of problem-oriented homework sets, probably either four or five in total. Homeworks will be due at class time on the due date. Feel free to work together on home problems, but be sure to turn in a solution set that is your own.

**Grading**

Your semester grade will be determined according to the following weights:

<table>
<thead>
<tr>
<th>Workload Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeworks</td>
<td>40 percent</td>
</tr>
<tr>
<td>Final Exam</td>
<td>55 percent</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5 percent</td>
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</tbody>
</table>

Final grades will be calculated on a curve, using these weights. Plus and minus grades will be used, with scoring based on the following table:

<table>
<thead>
<tr>
<th>Weighted Average</th>
<th>Final Grade</th>
<th>Weighted Average</th>
<th>Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>93–100</td>
<td>A</td>
<td>83–86.9</td>
<td>B</td>
</tr>
<tr>
<td>90–92.9</td>
<td>A</td>
<td>80–82.9</td>
<td>B–</td>
</tr>
<tr>
<td>87–89.9</td>
<td>B+</td>
<td>–79.9</td>
<td>C</td>
</tr>
</tbody>
</table>

**University Grading Standards**

I will follow the *University Grading Standards*, found on the web at [policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html](http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html).

**Final Exam**

The exam will be given on May 8, the last scheduled day of class. We will not have a discussion session that day.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Required Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar 25</td>
<td>General equilibrium: introduction</td>
<td>Lecture notes; MWG ch. 15</td>
</tr>
<tr>
<td>Mar 27</td>
<td>General equilibrium: optimality and</td>
<td>Lecture notes; MWG ch. 16</td>
</tr>
<tr>
<td></td>
<td>equilibrium</td>
<td></td>
</tr>
<tr>
<td>Apr 1</td>
<td>GE: 1st welfare thrm</td>
<td>Lecture notes; MWG ch. 16</td>
</tr>
<tr>
<td>Apr 3</td>
<td>GE: 2nd welfare thrm</td>
<td>Lecture notes; Mas-Colell ch. 16</td>
</tr>
<tr>
<td>Apr 8</td>
<td>GE: existence</td>
<td>Lecture notes; MWG ch. 17</td>
</tr>
<tr>
<td>Apr 10</td>
<td>GE: the core (if time allows)</td>
<td>Lecture notes; MWG ch. 18</td>
</tr>
<tr>
<td>Apr 15</td>
<td>Public goods: introduction</td>
<td>Laffont; MWG ch. 11.C</td>
</tr>
<tr>
<td>Apr 17</td>
<td>Public goods: BBV</td>
<td>BBV</td>
</tr>
<tr>
<td>Apr 22</td>
<td>Social choice: Arrow’s theorem</td>
<td>MWG ch. 21.C; Geanakoplos</td>
</tr>
<tr>
<td>Apr 24</td>
<td>Social choice: Gibbard-Satterthwaite</td>
<td>Craven ch. 5; Moulin</td>
</tr>
<tr>
<td>Apr 29</td>
<td>Mechanism design: introduction</td>
<td>Moore; MWG ch. 23</td>
</tr>
<tr>
<td>May 1</td>
<td>Mech design: economic environments</td>
<td>Hurwicz; Maskin</td>
</tr>
<tr>
<td>May 6</td>
<td>Mech design: Clarke-Groves</td>
<td>Bergstrom notes</td>
</tr>
<tr>
<td>May 8</td>
<td><strong>Final exam</strong></td>
<td></td>
</tr>
</tbody>
</table>
March 26. General equilibrium: introduction
1. *Lecture notes
2. *Mas-Colell, Ch. 15

March 28. General equilibrium: exceptions
1. *Lecture notes
2. *Mas-Colell, Ch. 16

April 2. General equilibrium: first welfare theorem
1. *Lecture notes
2. *Mas-Colell, ch. 16

April 4. General equilibrium: second welfare theorem
1. *Lecture notes
2. *Mas-Colell, ch. 16

April 9. General equilibrium: existence
1. *Lecture notes
2. *Mas-Colell, ch. 17

April 11. General equilibrium: the core
1. *Lecture notes
2. *Mas-Colell, ch. 18

April 16. Public goods: introduction
3. Mas-Colell, ch. 11.C

April 18. Public goods: Vickrey-Clarke-Groves and BBV
1. *Laffont
April 23. Social choice: Arrow’s theorem

1. *Lecture notes

April 25. Social choice: Gibbard-Satterthwaite

1. *Lecture notes
3. Craven, ch. 5
4. Mas-Colell, ch. 23.C

April 30. Mechanism design: introduction

2. Mas-Colell, ch. 23

May 2. Mechanism design: economic environments

3. Mas-Colell, ch. 23

May 7. Virtual implementation

1. *Lecture notes

May 9. Final exam