Staff:
Instructor: Prof. Robert Townsend, E17-230, Office hours: after class.
Teaching Assistant: Germán Gieczewski, ggieczew@mit.edu

Logistics:
Two lectures per week, Mon, Wed. 1-2:30, 14 lectures total
Recitations: Fri, 1-2:30 in E51-057
Course begins on 9/4/2013 and ends 10/25/2013
Exam: 10/25/2013

Description:
This course provides an introduction to microeconomic theory designed to meet the needs of students in the economics PhD program. It provides an introduction to consumer Choice Theory and General Equilibrium models, with an overview of the main results and tools used in these subjects and both directly and indirectly in a variety of other fields.

Enrollment in this course is limited and permission of the instructor is required. Permission can be obtained by attending the first class meeting and providing information about previous coursework in mathematics and economics. The course assumes that students have taken undergraduate intermediate microeconomics classes. It also assumes that students are comfortable with multivariable calculus, linear algebra and have had some exposure to real analysis. Historically, many students from outside the economics department have had difficulty with the course. The enrollment limit may result in well-qualified students being turned away.

Textbook:


Some students have also found the following books helpful:


Grading and Requirements:
The course will be graded on the basis of a series of problem sets and a final exam. Problem sets will be due in class on assigned lecture dates. They will be graded on a check-, check, check+ basis.

The grades are intended primarily to give you an idea of how you are doing in the course. You may work in groups, but please do the write-ups individually. We do not expect to see identical answers from different students. Class participation is strongly encouraged. The final exam will be held two days after the last lecture.
• **Topic 1 (9/4): The Big(gest) Picture**

**References:**

• **Topic 2 (9/9): Introduction to General Equilibrium and Fundamental Welfare Theorems in \( \mathbb{R}^n \)**

**References:**

• **Topic 3 (9/11): First Welfare Theorem**
First Welfare Theorem and its failures.

**References:**

• **Topic 4 (9/16): Second Welfare Theorem and Optimization**

**References:**
– Kuhn-Tucker conditions and Envelope Theorem: MWG M.J - M.L

**Topic 5 (9/18): General Implementation and Bargaining Foundations of General Equilibrium**


**References:**

– Core, core convergence and Aumann equivalence: MWG 18.B
– Nash bargaining: MWG 22.E
– Economies with endogenous commodity spaces:

**Topic 6 (9/23 and 9/25): General Equilibrium with Uncertainty**


**References:**

– Expected Utility Theory and Risk-Sharing: MWG Chapter 6
– Applications:

**Topic 7 (9/30): Existence and Computation of Walrasian Equilibria**


**References:**

– Classical Demand Theory: MWG 3.D
– Fixed Point Theorems: MWG M.H and M.I
- Negichi’s Algorithm: Judd (2005), "Solving Dynamic Stochastic Competitive General Equilibrium Models", in "Frontiers in applied general equilibrium modeling: in honor of Herbert Scarf".

- **Topic 8 (10/2): Aggregate Demand and Representative Consumer. Gorman Aggregation**

  **References:**
  - Indirect utility functions: MWG, 3.D
  - Aggregate demand: MWG, 4.B, 4.D

- **Topic 9 (10/7): Calibration and Basic Macroeconomics**

  **References:**
  - Calibration:
    * Dawkins, Srinivasan and Whalley (2001), "Calibration", on Handbook of Econometrics, vol 5, Chapter 58
  - Leontief production function and input-output matrices: MWG 5.A
  - Linear Programming: MWG M.M

- **Topic 10 (10/9 and 10/16): Identification in General Equilibrium**

  **References:**
  - Revealed preferences and law of demand: 2.E - 2.F
Integrability:
* MWG 3.H

Sonnenchein-Manel-Debreu Theorem: MWG 17.E
Testable restrictions on equilibrium allocations:

• Topic 11 (10/21 and 10/23): Generalizations of GE: what can go “right” and “wrong”

References:

Infinite Horizon economies, overlapping generation models:
* Acemoglu (2009), "Introduction to Modern Economic Growth" Princeton Press, Sections 5.2-5.7

Product Diversity:


Private Information Economies:

Monetary Economics: