14.123 Microeconomic Theory III

Staff:
Instructor: Prof. Robert Townsend, E52-538, Office hours: Thursday 4-5:00 pm.
Teaching Assistant: Dejanir Silva, E52-480, dejanir@mit.edu, Monday 5-6:00 pm.

Logistics:
Two lectures per week, Tue., Thu. 1-2:30, 13 lectures total in E51-151
Recitations: Fri, 1-2:30 in E51-151
Course begins on 03/29/2016 and ends 05/12/2016
Exam: 05/19/2016, E52-164

Description:
This course provides an introduction to theory and data designed to meet the needs of students in the economics PhD program. It provides an introduction to consumer choice and especially to 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 a week after the last lecture.
• **Topic 1 (3/29): The Big(gest) Picture**


**References:**


• **Topic 2 (3/31): Villages and Larger Economies, and The Commodity Space in General Equilibrium Settings**


**References:**

• **Topic 3 (4/5 and 4/7): Introduction to General Equilibrium and The First Welfare Theorem**

  **References:**

• **Topic 4 (4/12 and 4/14): Second Welfare Theorem**

  **References:**
  - Second Welfare Theorem: MWG 16.D
  - Lotteries:


**References:**
– Core, core convergence and Aumann equivalence: MWG 18.B
– Nash bargaining: MWG 22.E
– Implementation:

**Topic 6 (4/28 and 5/3): General Equilibrium with Uncertainty**

**References:**
– Expected Utility Theory and Risk-Sharing: MWG Chapter 6
– Testing:
  – Townsend (1993), ”The Medieval Village Economy”, *Princeton University Press*, Section 2.2
• Policy:


**Topic 7 (5/5): Existence and Computation of Walrasian Equilibria**


**References:**

  - Classical Demand Theory: MWG 3.D
  - Alex Wolitzky 14.121 notes
  - Fixed Point Theorems: MWG M.H and M.I
  - Nash Equilibrium and Fixed Point Theorems: MWG 8.D and 8.A
  - 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 (5/10): Calibration and Basic Micro and 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
- Anna Mikusheva, course materials for 14.384 Time Series Analysis, Fall 2007, MIT OpenCourseWare (http://ocw.mit.edu), Massachusetts Institute of Technology

**Topic 9 (5/12): Identification in General Equilibrium**


**References:**

- Revealed preferences and law of demand: 2.E - 2.F
- Integrability:
  - MWG 3.H
- Sonnenchein-Mantel-Debreu Theorem: MWG 17.E
- Testable restrictions on equilibrium allocations: