14.003x: Microeconomic Theory and Public Policy

Instructor:

- David Autor, Ford Professor in the MIT Department of Economics

Course Descriptions:

Microeconomic Theory and Public Policy is an intermediate course in microeconomic theory that draws primarily on examples derived from the US and other advanced economies. Specifically, this course applies microeconomic theory to analysis of public policy. It builds from the microeconomic model of consumer behavior and extends to the operation of single and multiple markets and analysis of why markets sometimes fail. We will study empirical examples to evaluate theory, focusing on the causal effects of policy interventions on economic outcomes. Topics include minimum wages and employment, food stamps and consumer welfare, economics of risk and safety regulation, the value of education, and gains from international trade.

Unlike traditional introductory economics courses, which only provide cursory evidence related to the theories discussed, this course aims to form questions, frame them analytically, figure out ways to test them with data, and then draw conclusions. We will spend a lot of time in this course reading recent papers from leading economics journals and interrogating them. What is the research design? What do they conclude, and what are the limitations?

The class is organized around three themes:

- 1. Economic theory: Where does it come from, what does it predict, and in what ways is it useful?

- 2. Causality: What is it, and how do we measure or estimate causal effects? How do we actually test these theoretical models? Are they correct, incorrect, or somewhere in-between?
- 3. Empirical applications: Economic theory is a way of organizing facts and interpreting and patterns in the world. This class will use data to test theory and use theory to interpret data. We will analyze a number of randomized experiments and quasi-experiments in the light of economic theory.

This Course and the MicroMasters:

This course is part of the Public Policy track of the MITx MicroMasters Program in Data, Economics, and Design of Policy (DEDP). The program consists of two tracks and eight online courses and proctored exams. This course is an advanced elective in the Public Policy Track. Learners who pass the three core classes and two elective courses can earn their MicroMasters credential. The program is co-designed by and run by MIT's Department of Economics and the Abdul Latif Jameel Poverty Action Lab (J-PAL), a global leader in conducting randomized evaluations to test and improve the effectiveness of programs aimed at reducing poverty. The MicroMasters program is intended for learners who are interested in building a full set of tools and skills required for data analysis in the social sciences, understanding the problems facing the world's poor, and learning how to design and evaluate social policies that strive to solve them. You can learn more about this program on our website – we hope that many of you will decide to join us!

Prerequisites:

Basic understanding of calculus and familiarity with microeconomics will be helpful for this course.

Assignments and Grading Scheme:

For every week during the course, there will be a homework assignment that covers the main topics in that unit. Homework assignments will be released on Tuesdays along with the videos, and will be due Tuesday. In addition, there will be a comprehensive review at the end of the course. Please see the online calendar for further information.

Grades of the course are calculated as follows:

- Homework Assignments: **14%**
- Finger Exercises: **9%**
- Comprehensive Review: **7%**
- Proctored Exam: **70%**

Lectures and Time Commitment:

The material for each topic will be posted weekly, and you should keep pace with the rest of the class. There will be about two lectures per week. You will have access to videos of the lecture presented in short segments (8-10 minutes on average), followed by finger exercises. You will also have access to the lecture notes and presentation slides.

The minimum commitment will be approximately 12 hours per week for watching the lectures, doing the readings, and completing the assignments.

Honor Code Pledge:

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- Maintain only one user account and not let anyone else use my username and/or password.
- Not engage in any activity that would dishonestly improve my results, or improve or hurt the results of others.
- Not post online or share answers to problems that are being used to assess learner performance.

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- Receiving a zero or no credit for an assignment;
- Having any certificate earned in the course or program withheld or revoked;
- Being unenrolled from a course or program; or
- Termination of your use of the MITx Online Site.
- Additional actions may be taken at the sole discretion of MIT.

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Honor Code violations will be determined at the sole discretion of MIT. You will be notified if a determination has been made that you have violated this Honor Code and you will be informed of the corresponding action to be taken as a result of the violation.

Course Syllabus:

Week One: Introduction and a First Application: The Minimum Wage Debate and Causal Inference in Economics

- Lecture 1: Introduction and a First Application
- Lecture 2: The Minimum Wage Debate and Causal Inference

Week Two: Introducing consumer theory: The foundation of microeconomics

- Lecture 1: Axioms of Consumer Preference and the Theory of Choice
- Lecture 2: Axioms of Consumer Preference, Utility Maximization

Week Three: Theory of Choice and Individual Demand

- Lecture 1: Individual Demand
- Lecture 2: Individual Demand: The Expenditure Function, Demand Curves, Income Substitution Effects

Week Four: Demand Functions: Income Effects, Substitution Effects, and Labor Supply

- Lecture 1: Income Effects, Substitution Effects, and Labor Supply
- Lecture 2: Giffen Goods and Subsistence Consumption

Week Five: Applied Competitive Analysis: Two Examples

- Lecture 1: Applied Competitive Analysis I: The US Sugar Program
- Lecture 2: Applied Competitive Analysis II: The Market for Residential Real Estate Brokers

Week Six: General Equilibrium: Theory and Application

- Lecture 1: General Equilibrium in a Pure Exchange Economy
- Lecture 2: Applying the GE Framework: Fishing in the state of Kerala, India

Week Seven: International Trade and Comparative Advantage

- Lecture 1: International Trade and the Principle of Comparative Advantage
- Lecture 2: Measuring the Gains from Trade — Using the Method of Instrumental Variables
- Lecture 3: Why Free Trade is Controversial

Week Eight: Externalities and Choice Under Uncertainty

- Lecture 1: Externalities, the Coase Theorem, Traffic Congestion, and Hockey Helmets
- Lecture 2: Uncertainty, Expected Utility Theory and the Market for Risk

Week Nine: Risk Preference and the Market for Risk

- Lecture 1: Risk, Safety Regulation, and the Value of a Statistical Life
- Lecture 2: Private Information and Adverse Selection
- Lecture 3: Moral Hazard and Subprime Lending

Week Ten: Signaling in Markets

- Lecture 1: Education, Human Capital, and Labor Market Signaling
- Lecture 2: Gender Norms, Dating/Marriage Market Signaling, and 'Acting Wife'

Week Eleven: Mandating a Pooling Equilibrium

- Lecture 1: Criminal Records, Statistical Discrimination, and Ban the Box Laws