Principles of Economics

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OFFICE: D303 Economics Building
OFFICE HOUR: Tue 2:00 - 4:00pm or by appointment
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COURSE HOMEPAGE: jiamingmao.github.io/principles-of-economics
GITHUB REPOSITORY: github.com/jiamingmao/principles-of-economics

COURSE DESCRIPTION

Economics, as a study in human behavior, relates to all of us. Behind its elegantly formulated theories are stories of people and their lives as consumers, workers, investors and entrepreneurs in an inter-connected world. It is the story of a Brazilian farmer who grows coffee beans brewed into espresso in Paris and Montreal. It is the story of a New York architect working with engineers in Tokyo to build a school in Cairo. And it is the story of a Chinese migrant worker who sends money home so that his children can go to college to achieve their dreams. To study Economics is to study the choices of these people given the constraints they face and the individual and collective consequences of their choices.

In this course, we introduce you to the basic principles and theories of Economics. We start from *microeconomics* — the study of the decision-making of individuals, households, and firms, to *macroeconomics* — the study of output, inflation, unemployment, and various aggregate phenomena that are the results of millions of individuals interacting with each other through the market place.

Throughout the course, we will study economic models, read papers, do experiments, watch films, discuss current events, and get our hands dirty with real economic data. You will be learning some statistical tools and programming along the way. The goal is to equip you with a fundamental understanding of how the economy works and develop your skills in using economic thinking and statistical tools to analyze the world.

Course Features

Three features distinguish this course from a conventional introductory Economics course:

THEORY In teaching economic theory, I emphasize the development of economic intuition behind the theory and use a combination of lecture and the Socratic method. Whenever possible, I introduce a model by starting from scratch and invite students to participate in its creation by asking students to think along with me what features the model should have in order to capture the effects we are studying. For example, instead of imposing the rational agent assumption, I ask students to think about how we can mathematically represent the idea that individuals respond to incentives and generally try to do their best. The ideal course is thus a progression in economic thinking: starting from the simplest conceivable model, to the discovery of its implications and shortcomings, and to new models that attempt to address these shortcomings and better represent reality. During this process, students are involved as fellow explorers rather than passive recipients of knowledge.

EXPERIMENTS Many classroom experiments will be incorporated into the teaching of this course. Students will play games that mimic real economic settings, from trading in competitive markets to multilateral bargaining. Each game revolves around a core topic of this course and is carefully designed to help students better understand the theories we learn in class[1]. By incorporating experiments into teaching, the goal is to not only facilitate learning, but encourage students to think on a deeper level how economic theory works or fails to work in practice.

DATA ANALYSIS Economics is an empirical science. Even though this is an introductory course, I believe it is important to cultivate a student's empirical skills as early as possible. To this end, lots of data exercises are assigned in this course. Students are asked to gather, process, and analyze real data, from oil prices to unemployment and job vacancy numbers. In this process, students will learn basic programming and data analysis skills[2], as well as develop a better understanding of the theories we learn in class.

Textbook

Main   Wu, Y., P. Yan et al., *Western Economics*, Higher Education Publications, 2011.

Supplementary   Mankiw, G., *Principles of Economics*, 8th-ed., Cengage Learning, 2017.

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[1]The games are developed by MobLab and chosen according to the topics covered by this course.
[2]We will use the programming language `R`.

Requirements and Grading

Final Grade		
Homework	30%
Experiment	10%
Midterm Exam	30%
Final Exam	30%

Participation   Active participation in class discussion is encouraged and will be considered toward the final grade.

Homework   Homework assignments will be given throughout the semester. You are encouraged to discuss homework with your classmates, but must prepare your assignments individually. Late homework will not be accepted unless you have documented family or medical emergencies.

Experiment   After each experiment, you are required to write a summary report that describes the main idea of the experiment and how the experiment outcomes compare with theoretical predictions.

Exams   There will be one midterm and one final exam. The exams will cover materials in the textbook as well as in lecture notes and supplementary readings. If you have to miss any exam due to family or medical reasons, you should inform me *prior to* the exam and provide verifiable documentation. In these cases, no makeup exams will be given and your final grade will be based on the rest of your exams and homework scores.

Computing

Git and Github   The materials for this course are hosted on Github. Since the course materials are continually updated throughout the semester, it is recommended that you `fork` this repository, and regularly sync it with the original. This tutorial walks you through the steps to do so.

R   `R` is a programming language for statistical computing. Throughout the semester, we will be using `R` to conduct basic data analysis. See here for an introduction to `R`.

Markdown   `Markdown` is a lightweight markup language for writing documents using an easy-to-read, easy-to-write plain text format, which can then be rendered into `html`, `pdf`, and other formats. In this course, it is recommended that you write your homework and experiment reports using the `markdown` language. For assignments that involve data analysis, you should write your homework in `R markdown`, which allows you to include `R` codes and automatically generate their output.

COURSE SCHEDULE

1. Introduction

- *Western Economics*: Preface

2. Supply and Demand

- *Western Economics*: Ch. 1.

EXPERIMENT

- Competitive Market

    - Experience the "invisible hand" of the market; individual profit maximization leads to competitive-market equilibrium.

    - Explore how shifts in supply and demand alter equilibrium predictions.

- Competitive Market with Interventions

    - Demonstrate the equilibrium effects of price ceilings and floors.

DATA ANALYSIS

- Crude Oil and Corn Prices

- Income and Food Expenditure

3. Welfare Analysis

- *Western Economics*: Ch. 2.

4. Economic Analysis of Taxation

- *Western Economics*: Ch. 1.

EXPERIMENT

- Competitive Market with Interventions

    - Demonstrate the equilibrium and surplus effects of per-unit taxes and subsidies.

DATA ANALYSIS

- Reagan and Bush tax cuts and U.S. Government Tax Revenue

5. Externalities

- *Western Economics*: Ch. 8.

EXPERIMENT

- Externalities with Policy Intervention

  - Show a divergence between market price and quantity and the socially optimal price and quantity for an externality-generating good.
  - Explore interventions like tax, subsidy, and tradable permits for externality generating goods.

DATA ANALYSIS

- China Carbon Emissions Trading Volume and Prices

6. Public Goods and Common Resources

- *Western Economics*: Ch. 8.

EXPERIMENT

- Public Goods

  - Highlights the features of public goods: non-rival and non-excludable. Shows the tension between individual and group welfare.
  - Experience the free-rider problem.

- Commons: Fishery

  - Individual profit maximization leads to overuse of a common-pool resource.

7. Asymmetric Information

- *Western Economics*: Ch. 8.

EXPERIMENT

- Market for Lemons

  - Experience a market with asymmetric information.
  - Asymmetric information may lead to adverse selection and market failure.

8. Search, Unemployment and Labor Market Dynamics

- *Western Economics*: Ch. 6.

EXPERIMENT

- Simple Labor Market

  – When a perfectly competitive market determines wages, the equilibrium wage
  is equal to the value of the marginal product of labor of the last worker hired.

DATA ANALYSIS

- Unemployment, Job Vacancies, and the Beveridge Curve

9. Measuring the National Economy

- *Western Economics*: Ch. 9.

DATA ANALYSIS

- China's National Accounts

- Nominal and Real GDP, GNP, National Income (NI), Personal Income (PI) and
  Disposable Personal Income (DPI) of Selected Countries

- Ireland's GNI/GDP Ratio

- Trends in Global Labor Shares

10. Measuring the Cost of Living

- *Western Economics*: Ch. 9.

DATA ANALYSIS

- Inflation and Core Inflation of Selected Countries

- CPI, Chained CPI, PPI, PCEPI, and their Implied Inflation Rates

11. Productivity and Growth

- *Western Economics*: Ch. 14.

12. Savings, Investment, and the Financial System

- *Western Economics*: Ch. 10.

EXPERIMENT

- Interest Rate and Inflation

    - Supply and demand for loans determine the equilibrium interest rate.
    - The Fisher Effect: The nominal interest rate approximately equals the real interest rate plus the inflation rate.

- Asset Market

    - Highlights the determinants of an asset's value: income generated from interest, dividend payments, and resale value.
    - Shows how asset bubbles may develop even with complete information.

- Bank Run

    - Highlights the underlying concept of fractional banking.
    - Demonstrates the trade-off between profit and risk, and shows how bank runs may arise.
    - Policy interventions, such as deposit insurance, can reduce the possibility of bank runs.

DATA ANALYSIS

- U.S. Treasury and Corporate Bond Rates

- U.S. Federal Reserve Balance Sheet during and after the 2008 Financial Crisis

- Japanese Inflation and Government Bond Rates

13. Open Economy Macroeconomics

- *Western Economics*: Ch. 15.