

# SYLLABUS

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Course title: Advanced Macroeconomics

Term: Fall 2020

Meeting times and location: 3:10 pm - 6:00 pm, Tuesday, Electrical Teaching Building, Room 114

TA session: 8:00 am -9:50 am, Tuesday, Second Teaching Building, Room 408.

## Course Description

This course is the first half of the core Macro sequence. We first cover the theory of dynamic programming and the neoclassical growth model. These are the basis of modern macroeconomics, which discuss the determination of consumption, investment and saving. Then we discuss asset pricing models. Last we discuss models with business cycles. Useful numerical methods are taught along the way. The objective of the course is to teach basic tools to be used in future research in macroeconomics.

## Learning Outcomes or Course Objectives

Understand the basic structure and conclusion of modern Macroeconomic models. Become familiar with both analytical and numerical methods in solving dynamic macroeconomic models. Be able to use the model to analyze the effects of fiscal policies and monetary policy.

## Instructor Information

Name: Shenzhe Jiang

Email address: shenzhejiang@nsd.pku.edu.cn

Office Hours: 10:00 am-12:00 am, Tuesday

Office location: Exchange Center 417N

## TA Information

Name: Ling Wang

Email address: lwang2018@nsd.pku.edu.cn

## Textbook and/or Resource Material

1. **Recursive macroeconomic theory.** Lars Ljungqvist and Thomas Sargent, The Mit Press, Third Edition. ISBN: 9780262018746.
2. **Recursive methods in economic dynamics.** Nancy Stokey, Robert Lucas and Edward Prescott, Harvard University Press, 1989.
3. **Monetary Policy, Inflation, and the Business Cycle.** Jordi Gali, Princeton University Press, 2008.

## Grading Policies

Your final grade  $\in [0, 100]$  will be based on homework assignments (20 percent), one midterm (35 percent) and a comprehensive final exam (45 percent). Late work is not accepted, unless proof of a university-authorized excuse is presented. Make-ups on the midterms and the final exam are available only to those with university approved valid justification. If you miss a midterm or the final, you are responsible for providing the evidence of unusual circumstances. Based on satisfactory evidence, you will receive a prorated score.

## Grading Scale

Standard Letter Grading Scale:

A = 90-100

B = 80-89

C = 70-79

D = 60-69

F = < 60

## Course Outline

- Introduction of Dynamic Model
  - brief history of modern macroeconomics
  - households' sequential saving problem and Euler equation
  - Ramsey model
  - First and Second Welfare Theorem
- Dynamic Programming
  - recursive representation on sequential problem and optimality principle
  - contraction mapping theorem and maximum theorem
  - dynamics of neoclassical growth model
  - stochastic dynamic programming
  - example: search unemployment
- Asset Pricing and Equilibrium in Complete Market
  - time 0 vs sequential trade
  - Pareto weight and optimal allocation
  - Arrow securities and Lucas-tree model
- Real Business Cycle and New-Keynesian model
  - real business cycle model
  - log-linearization
  - calibration with the U.S. history data
  - Calvo model
  - anti-crisis monetary policy and fiscal policy