

# Advanced Macroeconomics

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## Syllabus

### 1 Description

Macroeconomists are concerned with explaining observed aggregate behavior and with evaluating the welfare and allocations under alternative policy choices. To that end, they need to construct, solve and confront with the data intertemporal models describing the evolution of the aggregate economy over time.

The main objective of the course is to introduce fundamental techniques for constructing and solving dynamic-stochastic general equilibrium (DSGE) models.

The course begins with the basic RBC (Real Business cycle) model—the cornerstone for most modern macroeconomic business cycle models. The model (and its extension) will be used to illustrate the concept of equilibrium, market completeness, and solution techniques. We will consider both stochastic Lagrangian multipliers methodology and dynamic programming.

The second part of the course introduces the overlapping generation (OLG) model—the second major workhorse of modern macroeconomics—and, if time permits, incomplete markets model—the case in which agents face idiosyncratic and uninsurable labor income risk.

### 2 Lectures

The class meets on Mondays 16:15–19:00 on Długa 44/50.

### 3 Office hours

By appointment. You may contact me at [jacek.suda@gmail.com](mailto:jacek.suda@gmail.com)

### 4 Course website

All available notes, problem sets, and materials for this course will be posted on the course website:

<http://jaceksuda.com/teach/AdvancedMacroeconomics>

### 5 Requirements

There will be three homework assignments with the weight of 30% of final grade (10% each). The class ends with in-class 2 hour long exam.

## 6 Readings

There is no single textbook for this course, however, a number of textbooks covers a part of material discussed in class. Books that covers most of the material are

- *Frontiers of Business Cycle Research* by Thomas Cooley, Princeton University Press, 1995.
- *Recursive Macroeconomic Theory* by Lars Ljungqvist and Thomas Sargent, Princeton University Press, 2010.
- *The ABCs of RBCs: An Introduction to Dynamic Macroeconomic Models* by Geroge McCandless, Harvard University Press, 2008.

Other texts that cover discussed material or serve as good introduction are

- *Dynamic Economics* by Jérôme Adda and Russel Cooper, MIT Press, 2003.
- *Structural Macroeconometrics* by David N. DeJong with Chetan Dave, Princeton University Press, 2007.
- *Advanced Macroeconomics* David Romer, McGraw Hill, 1996.
- *Recursive Methods in Economic Dynamics* by Nancy Stokey and Robert Lucas with Edward Prescott, Harvard University Press, 1989.
- *Bayesian Estimation of DSGE Models* by Edward Herbst and Frank Schorfheide, Princeton University Press, 2015.

The readings include journal articles and chapters from the above books.

## 7 Outline

The detailed outline and suggested readings will be updated along the course.

1. Real Business Cycles (RBC) Model
  - (a) Introduction to dynamic stochastic general equilibrium (DSGE) models
  - (b) The basic RBC model
2. Dynamic Programming
3. Overlapping Generation (OLG) Model
4. Incomplete Markets (*if times permit*)