Faculty of Business and Economics
Department of Economics

THE UNIVERSITY OF MELBOURNE

Advanced Macroeconomics
March 2019

Chris Edmond

Office hours:	Mondays 12:00–13:00		Office:	FBE 423
	or by appointment		Phone:	8344 9733
			Email:	cedmond@unimelb.edu.au

Course description

This course is an advanced introduction to macroeconomics. By that, I mean the course will cover core topics in macroeconomics — long run economic growth, business cycle fluctuations, unemployment, inflation, optimal stablization policy, etc — but will do so using relatively formal economic models. By the end of the course you will have learned how to set up, solve, and work with simple quantitative versions of these models on a computer. The first half of the course will cover models of long-run economic growth and real business cycles, models that are essentially 'frictionless' and so do not generally admit any interesting role for macroeconomic policy. Nonetheless, these models serve as important theoretical benchmarks. In the second half of the course we will study various kinds of frictions, including nominal rigidities that give rise to monetary non-neutralities, labor market frictions that give rise to unemployment, and financial market frictions that can amplify exogenous shocks and also serve as an endogenous source of volatility.

For completeness, here's the official handbook entry written for an earlier incarnation of the course:

> This subject presents recent developments in macroeconomics. There will be a mix of theory and applications. The main theories to be covered may include overlapping generations models, dynamic optimisation, real business cycle theory, intertemporal open economy models and the theory of economic growth. Various theories will be illustrated using examples drawn from domestic and international policy issues, as appropriate.

Course material

There is no set text for the course. But if you would like to use a text to supplement the class notes, the best fit for this course is probably:

⬦ David Romer (2012): *Advanced Macroeconomics*. 4th Edition. McGraw-Hill.

The course will also draw on various journal articles and working papers. I will post copies of these articles and all other course material to the LMS.

Assessment

The grade for this course will be based on:

Task	Due date	Weight
Problem set #1	in class, Wednesday March 27	5%
Problem set #2	in class, Wednesday May 1	5%
Problem set #3	in class, Wednesday May 22	5%
Group presentation	in class, beginning Monday April 29	15%
Final exam	exam block	70%

Problem sets (15%).   There will be three problem sets over the course of the semester. The problem sets may be done in groups subject to the following rules: All members of a group submit a single solution and will be given the same mark. No more than five students may make up a group. Students may choose to work and hand in an assignment on their own. No two groups may hand in the same assignment. All students in a group should be in the same tutorial.

Group presentation (15%).   There will be a single 30-minute presentation of a research article related to the course material. These presentations will be done in 10 groups of 4–5 students. The presentations will be scheduled in the latter part of the semester, beginning Monday April 29.

Final exam (70%).   There will be a closed-book final exam covering the whole course.

Timetable

Lectures:

Mondays	10:30−12:00	The Spot 4012
Wednesdays	13:00−14:30	Alan Gilbert G21 (Theatre 1)

Tutorials:

Wednesdays	15:00−16:00	The Spot 2015
Fridays	10:00−11:00	Alan Gilbert 101
Fridays	15:15−16:15	FBE 211 (Theatre 4)

The tutors for this course will be Daniel Minutillo ⟨daniel.minutillo@unimelb.edu.au⟩ and Daniel Tiong ⟨d.tiong@student.unimelb.edu.au⟩.

Lecture Schedule

Lecture 1 (March 4).

Introduction and course overview. Introduction to advanced macroeconomics.

Lectures 2–8 (beginning March 6).

Growth theory and dynamic optimization. (i) Solow-Swan growth model in discrete and continuous time: qualitative dynamics, comparative statics, quantitative implications and applications. (ii) Ramsey-Cass-Koopmans neoclassical growth model in discrete and continuous time: introduction to dynamic optimization, phase diagram and qualitative dynamics, log-linearization, solution by method of undetermined coefficients, introduction to MATLAB and DYNARE. (iii) Further topics: e.g., technological change, factor shares, capital-labor substitution, automation, competition.

⋄ Romer, chapter 1, chapter 2 sections 2.1–2.7, and chapter 3 sections 3.4–3.5

Lectures 9–12 (beginning April 1).

Real business cycles. Motivating facts about business cycle fluctuations, stochastic growth model, elastic labor supply and employment fluctuations, balanced growth and standard parameterizations, calibration, impulse response functions and simulations, building intuition for the core RBC mechanisms, quantitative implications and evaluation.

⋄ Romer, chapter 5

Lectures 13–18 (beginning April 15).

Monetary economics. Imperfect competition and nominal rigidities, the basic new Keynesian model and a forward-looking Phillips curve, optimal monetary policy in the basic new Keynesian model, discretion versus commitment, new Keynesian model in continuous time, liquidity traps and the zero lower bound, optimal monetary policy in a liquidity trap, fiscal policy.

⋄ Romer, chapter 6 sections 6.5–6.6, chapter 7, and chapter 11 sections 11.5–11.6

⋄ Werning (2012): Managing a liquidity trap: Monetary and fiscal policy, MIT working paper.

Lectures 19–21 (beginning May 13).

Unemployment and labor market frictions. Mortensen-Pissarides model of search unemployment, labor market flows and Beveridge curve, matching, vacancies and unemployment, job creation and destruction, wage bargaining, quantitative implications and applications.

⋄ Romer, chapter 10 section 10.6

Lectures 22–24 (beginning May 22).

Financial crises. Diamond/Dybvig model, bank runs old and new, Brunnermeier/Sannikov model of financial frictions, nonlinear dynamics and endogenous risk, volatility paradoxes, Geanakoplos model of heterogeneous beliefs and leverage cycles.

⋄ Romer, epilogue

⋄ Diamond and Dybvig (1983): Bank runs, deposit insurance, and liquidity, *Journal of Political Economy.*

⋄ Brunnermeier and Sannikov (2014): A macroeconomic model with a financial sector, *American Economic Review.*

⋄ Geanakoplos (2009): Leverage cycles, *NBER Macroeconomics Annual.*

Group Presentations

The class will be divided into 10 groups with each group consisting of 4–5 students. Each group will be allocated a paper on which they are to make a 30-minute presentation.

Guidelines

Here are some general guidelines for preparing your presentations:

- You should structure the presentation as if you were the author of the paper, and you want to disseminate the findings of your paper to an audience that is unfamiliar with your research area but has an excellent undergraduate education in economics.

- Tasks should be distributed evenly among group members.

- Each group should choose 2–3 students who will be responsible for delivering the presentation. All students are expected to contribute to the preparation of the presentation and to be prepared to answer questions on the presentation.

- Each group should plan to meet with me at least once prior to your presentation. There should probably be one meeting about 2 weeks before your presentation to go over any questions you have regarding your paper and then a second meeting a few days before your presentation to go over your slides.

Final exam

The final exam will include at least one multiple choice question on each of the papers that are presented in class. These questions will generally focus on three aspects:

- What is the research question that this article seeks to address?

- What is the research methodology used by in this article?

- What is the conclusion that this article reaches?

To help in studying for the final exam, I will post each group's presentation slides to the LMS.

Papers for group presentations

The schedule of papers is listed below. These papers are all posted to the LMS.

Presentations will take place at the beginning of each lecture starting on Monday April 29.

Growth and climate change.

- ⋄ Solow (1974): Intergenerational equity and exhaustible resources, *Review of Economic Studies*.
- ⋄ Nordhaus (2017): Revisiting the social cost of carbon, *Proceedings of the National Academy of Sciences*.

Jobs and robots.

- ⋄ Autor and Dorn (2013): The growth of low-skill service jobs and the polarization of the US labor market, *American Economic Review*.
- ⋄ Graetz and Michaels (2018): Robots at work, *Review of Economics and Statistics*.

Concentration and competition.

- ⋄ Gutiérrez and Philippon (2017): Declining competition and investment in the US, working paper.
- ⋄ De Loecker, Eeckhout and Unger (2018): The rise of market power and the macroeconomic implications, working paper.

Public debt and fiscal policy.

- ⋄ Diamond (1965): National debt in a neoclassical growth model, *American Economic Review*.
- ⋄ Blanchard (2019): Public debt and low interest rates, *American Economic Review* forthcoming

House prices and unconventional monetary policy.

- ⋄ Iacoviello (2005): House prices, borrowing constraints, and monetary policy in the business cycle, *American Economic Review*.
- ⋄ Gertler and Karadi (2011): A model of unconventional monetary policy, *Journal of Monetary Economics*.