# ECON4422
## Macroeconomic Theory

<table>
<thead>
<tr>
<th><strong>Mode of Delivery</strong></th>
<th>On campus</th>
</tr>
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<tr>
<td><strong>Prerequisites</strong></td>
<td>As listed in <em>Programs and Courses</em></td>
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<td><strong>Incompatible Courses</strong></td>
<td>As listed in <em>Programs and Courses</em></td>
</tr>
<tr>
<td><strong>Co-taught Courses</strong></td>
<td>None</td>
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<tr>
<td><strong>Course Convener:</strong></td>
<td>Dr. Timothy Kam</td>
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</tbody>
</table>

**Email:** timothy.kam@anu.edu.au

*Caveat emptor:* Due to the mountain of garbage I receive from university administration and the occasional spam tempting me to get the Supro TremoVerb amp, I will likely not get to read your emails.

The best way to get quick response and feedback from me is via the [WATTLE](http://wattle.anu.edu.au) forum. Otherwise, please come and see me during the Student Consultation Hours.

**Student Consultation Hours:**
- Friday 4-6pm
- Other daily walk-in office hours listed on [WATTLE](http://wattle.anu.edu.au)

**Research Interests:**
- Macroeconomic Theory and Policy, Monetary Economics, Computational Economics

**Course Contact:**
- Mr. Jamie Cross
- Phone: +61 2 612 58109
- Email: j.cross@anu.edu.au
- Lecturer(s): Timothy Kam
- Phone(s): Use [WATTLE](http://wattle.anu.edu.au) forum please
- Email(s): Use [WATTLE](http://wattle.anu.edu.au) forum please
- Office hours for student consultation: Daily. See WATTLE.

**Head Tutor:**
- Mr. Jamie Cross. Contact him in the first instance for all course-related inquiries.

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This Outline will be superseded by its official version on [WATTLE](http://wattle.anu.edu.au). Enrolled students should rely on the latter for policies and on [WATTLE](http://wattle.anu.edu.au) for weekly task updates. This version: February 2, 2017, 06:11 (AEST)
COURSE OVERVIEW

Course Description
This course will introduce you to some basic aspects of modern Macro-economics. In elementary macroeconomics courses we have been exposed to the following questions: On average why is each generation of people “better off” than its predecessors? Why do some nations catch up in economic well being, while others are persistently poor? What drives poverty and inequality of living standards? What is inflation? What is unemployment? What is the business cycle? Are they socially costly? How do we logically think about what drives these measurable economic outcomes? How do banking, finance and information play a role in these outcomes? What role do economic policies play in these various economic issues? How do we think about major Recessions and economic crises? From undergraduate economics, we think we know most of the proposed answers, albeit informally. In this course, we will emphasize formal theory and modelling tools that will enable you to address major macroeconomic questions in a deeper way.

These are very big and difficult questions if one is to study them in carefully considered and quantitative ways. However, given time limitations, we will selectively study some of these questions and relevant policy issues as illustrations of more general theory and necessary tools that have to be picked up along the way. These important tools form the backbone for modern quantitative and policy research in macroeconomics that is disciplined by structured theoretical thinking. More sophisticated versions of these skillsets are now widely used in the best policy institutions around the world. They also find use in some discerning consultancies, investment banks and international organisations.

In order to analyze and understand a given macroeconomic reality, and in order to hopefully make useful predictions or policy prescriptions, we begin from basic and known logical paradigms. Once we learn how these baseline paradigms behave, we can step outside of these “boxes” to critique some of their deficiencies. We will also discuss how economists consider alternative solutions and modes of thinking. This course will be presented at a level suitable for the working professional seeking a career “tooling-up”, the advanced undergraduate and graduate student. To do well in this course, you should possess an aptitude for critical/analytical thinking and an openness to learning new quantitative/computational skills. A logical progression from this course is ECON8001 Topics in Macroeconomics (S2). A concurrent enrolment on ECON8011 Microeconomic Theory A is strongly advised for students from outside of the RSE.

Learning Outcomes
At the completion of this course, students should be able to:

1. Understand Key Empirical Facts and Issues relating to Macroeconomics;
2. Apply modelling and quantitative/computational skills;
3. Interpret macroeconomic time series phenomena and study dynamic policy design using well-structured theory;
4. Begin to develop original ideas extending from the basic literature;
5. Discuss the usefulness and limitations of existing competing theories; and
6. Critically read and understand many research articles, newspaper and magazine articles covering current economic events.

**Assessment Summary**

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
<th>Feedback</th>
<th>Linked Learning Outcomes</th>
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<tbody>
<tr>
<td>1. Mid-term Examination</td>
<td>36%*†</td>
<td>Week 6</td>
<td>Week 7</td>
<td>1-6</td>
</tr>
<tr>
<td>2. Final Examination</td>
<td>67%-100%</td>
<td>ANU Exam Period</td>
<td>None</td>
<td>1-6</td>
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**Research-Led Teaching**

Some of the skillsets, major questions, insights and case studies learned in this course relate directly to the frontier work your instructor and his colleagues are engaged in. In particular, the instructor’s emphasis on physical presence of students in intellectual discourse, self-disciplined learning, critical and research-like independent thinking is designed to encourage students to become leaders in their own future spheres who are capable of tackling new and challenging issues. Your instructor is an active researcher in the fields of Macroeconomics and Monetary Economics. He sometimes develop new computational methods for solving difficult economic problems, such as dynamic public insurance games in the face of agent heterogeneity, or in models with endogenous market incompleteness in which monetary policy has a non-trivial redistributive role. He publishes regularly in the leading journals of his fields. He is also a regular visitor and contributor to leading policy institutions around the world, such as the U.S. Federal Reserve Bank system, the Reserve Bank of New Zealand, Bank of Japan, and the Hong Kong Monetary Authority. He currently serves as Treasurer and Chief Technology Officer of the not-for-profit Australasian Macroeconomics Society, and, as the convenor of Australia’s leading 4-th-year Honours in Economics program.

**Feedback**

**Staff Feedback**

- **Problem Set and Coding Activities.**
  - To maximize your experience and feedback on your progress, please attempt all the tutorial problem sets before attending tutorials.
  - You will not have mastered anything if you just show up to copy down answers or worse, read the answer sheet.

- **Lecturer Office Hours.**
  - For maximal value, you should have read the relevant materials (textbook, lecture slides) and attempted problems, before turning up to office hours with questions. If you have any difficulties, please do not hesitate to come and see us; and do not wait
until the end of semester to do so. I am here to assist your learning and also to ensure that your university experience continues to be a fun and rewarding one!

- **Tutorial Preparation, Participation and Feedback.**
  - Answers to these activities and general discussions relating to how you understood the material tested will be provided in class.

**WATTLE Forum.**

- Feel free to post short questions related to the course material on WATTLE Forum. The usual internet etiquette applies. The teaching team may answer your questions occasionally. However, please reserve long queries to physical office hours, as we can best help you there.

**Student Feedback**

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement.

For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to

http://unistats.anu.edu.au/surveys/selt/students/ and
http://unistats.anu.edu.au/surveys/selt/results/learning/

**Policies**

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University’s academic standards, and implement them. You can find the University’s education policies and an explanatory glossary at: http://policies.anu.edu.au/

Students are expected to have read the Academic Misconduct Rule before the commencement of their course.

Other key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations

**Required Resources**

- Economic Dynamics in Discrete Time, 2014 (MIT Press): Main textbook
  by Jianjun Miao (“Mi”)

  **ISBN:** 978-0262027618
  
  by Lars Ljungqvist and Thomas J. Sargent (“LS”)


• Custom Notes (a.k.a. “CN”):
  
  – Linked from WATTLE

• Other Useful References:
  
  
  
  
  
  
  
  
  
  

If you cannot afford, or do not wish to own, a personal copy of the textbook, copies are available from the ANU Library’s 2-Hour Reserve listing.

Scientific Computation:

The modern economics student is expected to possess not just analytical skills but increasingly computational skills, both in academia and in the wider marketplace for economists. You are not expected to have any prior training in such skills, but you are expected to have a flexible and open mind towards learning it as we go.

In this course, we will use the high-level (i.e. user friendly) programming language called Python (http://python.org or https://store.continuum.io/cshop/anaconda/).
Field trips

Weekly participation in intellectual discourse in lectures and tutorials is an increasing sequence of life-transforming mental field trips.

Additional course costs

This is an economics course, and students should expect to understand the crucial nature of finite resources (e.g., time), trade-offs (e.g., intertemporal trade-offs), and incentives. You will incur some major opportunity costs in this course, such as short-term gains from current employment wants, excess sleep, and travel. In return, if you put in serious time and effort to show up and to master the material in the course, you stand to reap greater future rewards.

Examination material or equipment

To be announced on WATTLE at the opportune time.
### COURSE SCHEDULE

<table>
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<tr>
<th>Week/Session</th>
<th>Summary of Activities (Feb 20 - Apr 1)</th>
<th>Assessment</th>
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</table>
- Random Variables and Stochastic Processes; Example of a Stochastic OLG Model; Simulating “cyclical” economic outcomes.  
**Reading assignment:** CN; LS, 2 |           |
| 2            | - Economic Growth and Empirical Regularities.  
- Prior Encounters—Recursive Equilibrium by Example: Solow-Swan and other model variations; OLG model.  
- Special Cases: Linear Dynamical Systems.  
**Reading assignment:** Mi 1.1-1.6 and 2.1; LS, 2 and 9 (optional); Ac, Ch-9 | **Problem Set 1** with Feedback |
| 3-4          | - Business-cycle Measurement and Empirical Regularities  
- Complete financial markets benchmark: Representative-agent result  
- Asset Pricing  
- Fundamental Welfare Theorems of General Equilibrium: Equivalent Planner Problem  
- Model Variations  
**Reading assignment:** CN; Mi, 13-14; Wa, 2, 3 (optional) | **Problem Set 2-3** with Feedback 5-6 |
|              | - Turning infinite-horizon decision problems (infinite-dimensional optimization) into recursive finite-dimensional problems  
- Application to RBC models  
- Approximate linear solution methods (Undetermined Coefficients Method); Connections to black-box time-series modelling; Taking Theory to Data: Structural Estimation  
**Reading assignment:** CN; Mi 12; LS, 2 | **Problem Set 4** with Feedback  
Mid-semester examination |
|              | Semester 1 Teaching Break (April 3-18) |            |
### Week/Session

#### Summary of Activities (Apr 19 - May 26)

- More Empirical Evidence and Policy Issues
- Rationalizing the undergraduate AD-AS framework as New Keynesian model
- Solving and Simulating a NK economy; Policy Counterfactuals
- Introduction: Dynamically inconsistent policy plans and credible public policies  
  **Reading assignment:** CN; Mi 19, 21; Wa, 8

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<tr>
<th>Week/Session</th>
<th>Assessment</th>
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<tr>
<td>7-9</td>
<td>Problem Set 5 with Feedback</td>
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</table>

- Unemployment, Job Search and Matching
- Money, Finance and Payments Revisited: A Critique of Mainstream Monetary Policy Models  
  **Reading assignment:** Mi, 18; LS, 6; NR, 1-4

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<th>Week/Session</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-11</td>
<td>Problem Set 6 with Feedback</td>
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- Where have we been; where to from here?
- Woodshed Sessions

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<tr>
<th>Week/Session</th>
<th>Assessment</th>
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<tbody>
<tr>
<td>12</td>
<td>Final Examination</td>
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**WARNING:** The schedule above may be subject to variations during the semester. Keep up with the WATTLE Lecture Log (*).

### Examination

**Midsemester Examination (0% or 33%).** The midsemester examination gauges you consistency in learning in this course and tests your ability to apply you knowledge in the subject. This component is redeemable against the final exam. Because this is a redeemable component, your failure to attend this examination for any reason implies that you will be solely tested on the final examination.

**Final Examination (67% or 100%).** Completion of the final examination is necessary for a successful completion of the course.

### Scaling

Your final mark for the course will be based on the raw marks allocated for each of your assessment items. However, your final mark may not be the same number as produced by that formula, as marks may be scaled. Any scaling applied will preserve the rank order of raw marks (i.e. if your raw mark exceeds that of another student, then your scaled mark will exceed the scaled mark of that student), and may be either up or down.
Privacy Notice

The ANU has made a number of third party, online, databases available for students to use. Use of each online database is conditional on student end users first agreeing to the database licensors terms of service and/or privacy policy. Students should read these carefully.

In some cases student end users will be required to register an account with the database licensor and submit personal information, including their: first name; last name; ANU email address; and other information.

In cases where student end users are asked to submit content to a database, such as an assignment or short answers, the database licensor may only use the students content in accordance with the terms of service including any (copyright) licence the student grants to the database licensor.

Any personal information or content a student submits may be stored by the licensor, potentially offshore, and will be used to process the database service in accordance with the licensors terms of service and/or privacy policy.

If any student chooses not to agree to the database licensors terms of service or privacy policy, the student will not be able to access and use the database. In these circumstances students should contact their lecturer to enquire about alternative arrangements that are available.

SUPPORT FOR STUDENTS

The University offers a number of support services for students. Information on these is available online from http://students.anu.edu.au/studentlife/