I. Information on Instructor and Tutor
Instructor: Dr. Yulei Luo
Email: yulei.luo@gmail.com
Office: K.K.Leung Building 916
Phone: 2859-1042
Office hours: Thursday 3 – 5 pm or by appointment
Lecture times: Wednesday 6:45-9:45pm
Place: KKLG104

II. Course Description and Objectives
This is the first course in macroeconomics for PhD students in economics and finance of HKU. It is largely based on dynamic optimization and general equilibrium theory. Students are expected to learn the key tools (e.g., optimal control and dynamic programming) and canonical models of modern dynamic macroeconomics, and use them to study economic growth, business cycles, consumption, savings, investment, asset pricing, and government policies.

III. Course Intended Learning Outcomes (CILOs)
By the end of the course, students should be able to:
CILO01 Understand the techniques (e.g., dynamic programming, optimal control, time series analysis, log-linearization) used to solve the canonical macroeconomic models.
CILO02 Familiar with the canonical models in macroeconomics such as Ramsey’s optimal growth model, real business cycles models, Hall’s permanent income model, Lucas’ asset pricing model, and learn how to apply these techniques and models to address interesting macroeconomic questions qualitatively or quantitatively.

IV. Alignment of program ILOs and course ILOs

<table>
<thead>
<tr>
<th>Program ILOs</th>
<th>Course ILOs</th>
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<tbody>
<tr>
<td>Understanding of fundamental theories and new development in economics</td>
<td>CILO01, CILO02</td>
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<tr>
<td>Mastering of skills in analyzing economic data</td>
<td>CILO01, CILO02</td>
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<tr>
<td>Demonstration of ability to apply economic knowledge and analytical skills to address policy and business problems</td>
<td>CILO01, CILO02</td>
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<tr>
<td>Awareness of ethical concerns in economic issues</td>
<td>CILO01, CILO02</td>
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<tr>
<td>Mastering of communication skills</td>
<td>CILO01, CILO02</td>
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V. Course Evaluation

|         |%
|---------|---
| Problem sets | 10 |
| Midterm Exam | 30 |
| Final Exam | 60 |

There are approximately 4 problem sets. Some of the problem sets will involve using Matlab (or any other software you are familiar with) for numerical computation. Students are encouraged to study in small groups. However, the homework assignments that you hand in must be your own work. Students should submit the problem sets before the deadlines are due. The midterm exam is open book and open notes, and the final exam is closed book and closed notes. The dates of the midterm and final exams will be announced in class.

VI. Teaching and Learning Activities (TLA)

<table>
<thead>
<tr>
<th>TLA</th>
<th>Lecture</th>
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<tr>
<td>Lecture</td>
<td>Instructor will give lectures on major concepts and issues.</td>
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</table>
Instructor hold weekly consultation hours to answer students’ questions.

Alignment Among Course Intended Learning Outcome, Teaching and Learning Activities and Assessment Tasks:

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Teaching and learning activity (TLA)</th>
<th>Assessment</th>
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<tbody>
<tr>
<td>CILO01</td>
<td>TLA1, TLA2</td>
<td>Problem Sets, Take-home project, Final Exam</td>
</tr>
<tr>
<td>CILO02</td>
<td>TLA1, TLA2</td>
<td>Problem Sets, Take-home project, Final Exam</td>
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</table>

VII. Academic Conduct

Respect your instructors and your fellow students. Be considerate to others.

Academic Dishonesty

The University Regulations on academic dishonesty will be strictly enforced. Please check the University Statement on plagiarism on the web: [http://www.hku.hk/plagiarism/](http://www.hku.hk/plagiarism/)

Academic dishonesty is behavior in which a deliberately fraudulent misrepresentation is employed in an attempt to gain undeserved intellectual credit, either for oneself or for another. It includes, but is not necessarily limited to, the following types of cases:

1. **Plagiarism** - The representation of someone else's ideas as if they are one's own. Where the arguments, data, designs, etc., of someone else are being used in a paper, report, oral presentation, or similar academic project, this fact must be made explicitly clear by citing the appropriate references. The references must fully indicate the extent to which any parts of the project are not one's own work. Paraphrasing of someone else's ideas is still using someone else's ideas, and must be **acknowledged**.

2. Unauthorized Collaboration on Out-of-Class Projects - The representation of work as **solely** one's own when in fact it is the result of a joint effort.

3. Cheating on In-Class Exams - The covert gathering of information from other students, the use of unauthorized notes, unauthorized aids, etc.

4. Unauthorized Advance Access to an Exam - The representation of materials prepared at leisure, as a result of unauthorized advance access (however obtained), as if it were prepared under the rigors of the exam setting. This misrepresentation is dishonest in itself even if there are not compounding factors, such as unauthorized uses of books or notes.

Where a candidate for a degree or other award uses the work of another person or persons without due acknowledgement:

1. The relevant Board of Examiners may impose a penalty in relation to the seriousness of the offence;

2. The relevant Board of Examiners may report the candidate to the Senate, where there is **prima facie** evidence of an intention to deceive and where sanctions beyond those in (1) might be invoked.

VIII. Course Readings

Main reference books:


Some other useful references that you might want to look at include:

VIV. Course Schedule
*Any revision of this course outline will be announced in class and posted on http://www.sef.hku.hk/~yluo/teaching/6012_2017/econ6012_2017.htm. The required readings will be marked with “*” in the course schedule.

**Topic 1: Intertemporal Optimization (Optimal Control and Dynamic Programming)**
1. LS, Chapters 1, 3*.
2. GM, Chapter 4.
3. MW, Chapter 17*.
4. PK, Chapter 4*.

**Topic 2: Optimal Economic Growth and Competitive Equilibrium**
1. LS, Chapters 15*.
2. GM, Chapters 1, 2, 3.
3. MW, Chapters 2*, 3*, 4*.
4. PK, Chapter 5*, 9*.

**Topic 3: Uncertainty, Rational Expectations, and Economic Dynamics**
1. LS, Chapters 2*, 4, and 5.
2. PK, Chapter 6*.

**Topic 4: Stochastic Growth and Real Business Cycles**
1. GM, Chapters 5*, 6*, 7*.
2. MW, Chapter 11.
3. PK, Chapter 10*.

**Topic 5: Intertemporal Consumption**
1. PK, Chapter 8*.
2. BF, Chapters 6 and 7.

**Topic 6: Asset Pricing and the Macroeconomy**
1. LS, Chapters 13* and 14.
2. MW, Chapter 11.
3. PK, Chapter 12*.


**Topic 7: Investment**

1. BF, Chapters 6 and 7.

**Topic 8: An Introduction to Continuous-Time Stochastic Macro Models**

1. John Cochrane’s online lecture notes on continuous-time asset pricing: [http://faculty.chicagobooth.edu/john.cochrane/teaching/35904_Asset_Pricing/continuous_time_review.pdf](http://faculty.chicagobooth.edu/john.cochrane/teaching/35904_Asset_Pricing/continuous_time_review.pdf)
2. George G. Pennacchi’s online lecture notes on continuous-time theory of asset pricing: [https://business.illinois.edu/gpennacc/fin591.html](https://business.illinois.edu/gpennacc/fin591.html)