**Mode of Delivery** | On campus  
---|---  
**Prerequisites** | As listed in *Programs and Courses*  
**Incompatible Courses** | As listed in *Programs and Courses*  
**Course Convener:**  
Phone:  
Email: tao.yang@anu.edu.au  
**Office hours for student consultation:**  
**Research Interests**  
**Relevant administrator if any (optional)** | Karissa Carkeet  
Phone: 6125 0384  
Email: Enquiries.rse@anu.edu.au  
**Lecturer(s)** | Thomas Tao Yang  
**Phone(s):**  
**Email(s):** tao.yang@anu.edu.au  
**Office hours for student consultation:** Tuesday 13:00-14:00  
**Tutor(s) (optional)**  

**SEMESTER 1**  
2016

http://programsandcourses.anu.edu.au/course/EMET8014
COURSE OVERVIEW
The overall aim of this course is to provide students with an advanced understanding of the principles underlying estimation methods and hypothesis tests in econometrics. The course first covers basic probability theory and statistics, then moves to econometrics.

The course is essentially a course in (univariate) mathematical statistics, with asymptotic theory.

Learning Outcomes
On successful completion of this course, students will be able to
1. Calculate expected values and higher order moments for random variables.
2. Derive distributional properties of random variables and statistics from first principles using various mathematical techniques.
3. Use asymptotic theory to calculate approximate distributions for random variables and statistics.
4. Derive properties of estimators and compare their performance.
5. Derive properties of test statistics.
6. Appreciate the connections between the many different methods used in econometrics.

A side-objective of the course is for students to practice rigorous mathematical reasoning and to enhance their analytical skills.

Course format
Each week there will be two 1 - 2 hour lecture and 0-1 hour tutorial.
Lecture: Tuesday 10:00 – 12:00   Friday 11:00 – 12:00
Tutorial: Tuesday 14:00 – 15:00
Office hours: Tuesday 13:00 – 14:00

There are 4 contact hours scheduled per week. The aim is to have 3 contact hours per week on average. On average on Tuesday the lecture and the tutorial lasts 2 hours in total. There might be “overtime” in a week; this will be offset with “undertime” in another. There will be a problem set after each lecture. The main purpose of tutorials is for students to solve problems on a white board. Problem solving is the most important aspect of this course. Each problem set is due at the next tutorial.

Recommended (NOT required) Reading:
Introduction to Statistics and Econometrics, Takeshi Amemiya, 1st Ed, 1994 Harvard University Press.

Assessment Summary
<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
<th>Date for Return of Assessment</th>
<th>Linked Learning Outcomes (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Problem sets</td>
<td>20% of mark</td>
<td>Next tutorial</td>
<td>Immediately</td>
<td></td>
</tr>
<tr>
<td>2. Mid term exam</td>
<td>35% of</td>
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<tr>
<td>3. Final exam</td>
<td>45% of mark</td>
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</tbody>
</table>

You can miss up to 2 assignments to get the 20% of mark.
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 Student Academic Integrity Policy before the commencement of their course.

Other key policies include:
- Student Assessment (Coursework)
- Student Surveys and Evaluations

Extensions and penalties
Extensions and late submission of assessment pieces are covered by the Student Assessment (Coursework) Policy and Procedure.

The Course Convener may grant extensions for assessment pieces that are not examinations or take-home examinations. If you need an extension, you must request it in writing on or before the due date. If you have documented and appropriate medical evidence that demonstrates you were not able to request an extension on or before the due date, you may be able to request it after the due date.

No submission of assessment tasks without an extension after the due date will be permitted. If an assessment task is not submitted by the due date, a mark of 0 will be awarded.