EMET 4305/8005  
Economic Models and Introductory Econometrics  
Semester 1, 2016

This is a unit in basic econometrics, emphasising the problems involved in the empirical measurement of economic relationships and the techniques used to solve these problems. While the application of econometric techniques is of prime importance, the results are not just presented but derived using a mixture of rigour and intuition so as to leave as few loose ends as possible.

<table>
<thead>
<tr>
<th>Mode of Delivery</th>
<th>On campus, lecture and tutorial based</th>
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<tbody>
<tr>
<td>Prerequisites</td>
<td>-</td>
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<td>Incompatible Courses</td>
<td>-</td>
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<tr>
<td>Course Convener:</td>
<td>Zach Ward</td>
</tr>
<tr>
<td>Office:</td>
<td>HW Arndt 2014</td>
</tr>
<tr>
<td>Office Phone:</td>
<td>02 6125 3363</td>
</tr>
<tr>
<td>Email (preferred):</td>
<td><a href="mailto:zach.ward@anu.edu.au">zach.ward@anu.edu.au</a></td>
</tr>
<tr>
<td>Office hours for student consultation:</td>
<td>TBA</td>
</tr>
<tr>
<td>Relevant Administrator</td>
<td>Ms Karissa Carkeet</td>
</tr>
<tr>
<td>Phone:</td>
<td>6125 0384</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:Karissa.Carkeet@anu.edu.au">Karissa.Carkeet@anu.edu.au</a></td>
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Course URL: Wattle

SEMESTER 1  
2015
COURSE OVERVIEW

Course Description
This is a graduate-level course in basic econometrics, where we will learn how to use actual data to analyse economic relationships. For example: How many jobs does international trade create or destroy? To what extent has technological advance contributed to inequality? By how much does a graduate degree increase your earnings?

You will learn how to apply the standard tool in econometrics, linear regression, to a variety of datasets. Beyond linear regression, we will learn different techniques such as non-linear methods, instrumental variables, and time series analysis; techniques that are commonly found in modern-day economic research and policy analysis. We will first learn the theory behind the techniques, but then will apply the theory to understanding real-world situations.

Accordingly, also important for this course is also learning the statistical (computer) packages that economists use when testing these theories. I will be mostly using Stata for this course, make sure you purchase a copy of it to do problem sets.

Text
- Wooldrige, Jeffrey M., *Introductory Econometrics: A Modern Approach*

Other useful texts (not-required):

**Beginner level:**
- Stock and Watson, *Introduction to Econometrics*, Addison Wesley
- Wooldrige, Jeffrey M., *Introductory Econometrics: A Modern Approach*

**More Advanced-level:**
- Greene, William H. *Econometric Analysis*, Pearson Education
- Wooldridge, Jeffrey M. *Econometric Analysis of Cross Section and Panel Data*

Learning Outcomes
Upon successful completion of the requirements for this course, students should be able to

- interpret and make sense of relationships in economic data
- develop empirical models to test basic economic questions
- analyse and plot data using statistical software
- explain the theory and intuition behind econometric models
- recognise the limitations of linear regression, especially related to causation or correlation
- gain the background to take EMET 8001 Applied Micro-Econometrics or EMET 8010 Applied Macro and Financial Econometrics
Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
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<tbody>
<tr>
<td>1. Assignments</td>
<td>25%</td>
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<tr>
<td>2. Mid-semester examination</td>
<td>35%</td>
</tr>
<tr>
<td>3. Final Examination</td>
<td>40%</td>
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Feedback

Staff Feedback
Students will be given feedback in the following forms in this course: written comments, verbal comments, and comments to the entire class.

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 Student Academic Integrity Policy before the commencement of their course.

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

Additional course costs
Students will be expected to complete assignments in Stata. You may use Stata in the computer labs, but purchasing your own copy will be helpful in the long run.
COURSE SCHEDULE
The course schedule is tentative and may change based on progress or needs of the class

1. Introduction
   a. Expectation operators
   b. Random variables, conditional mean and distribution
   c. Probability density functions
3. Simple and Multiple Regression
   a. Common Issues: multiple collinearity, heteroskedasticity,
   b. Analysis and Interpretation of Randomized Trials
   c. Experiments and Potential Outcomes framework
4. Non-Linear Methods
   a. Probit, Tobit
5. Introduction to Applied Econometric Techniques and Issues
   a. Instrumental Variables and Endogenous Regressors
   b. Fixed Effects and Difference-in-Differences
6. Introduction to macro-econometrics

ASSESSMENT REQUIREMENTS
The ANU is using Turnitin to enhance student citation and referencing techniques, and to assess assignment submissions as a component of the University's approach to managing Academic Integrity. For additional information regarding Turnitin please visit the ANU Online website.

Students may choose not to submit assessment items through Turnitin. In this instance you will be required to submit, alongside the assessment item itself, copies of all references included in the assessment item.

Assessment Tasks
There will be the following problem sets, given approximately every two weeks. In addition to these, some problem sets will be based on questions from the text. You will need to upload a .log file from stata for each assignment to Wattle using Turnitin.

Examination(s)
The mid-semester exam will consist of short-answer questions regarding the textbook material and problem sets.

Assignment submission
Online Submission: Assignments are submitted using Turnitin in the course Wattle site. You will be required to electronically sign a declaration as part of the submission of your assignment. Please keep a copy of the assignment for your records.

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.

**Returning assignments**
Assignments will be returned within a 2 week time frame.

**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/](http://students.anu.edu.au/studentlife/)