**EMET 3006**  
**Applied Micro-Econometrics**

<table>
<thead>
<tr>
<th>Mode of Delivery</th>
<th>On campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisites</td>
<td>As listed in Programs and Courses</td>
</tr>
<tr>
<td>Incompatible Courses</td>
<td>As listed in Programs and Courses</td>
</tr>
<tr>
<td>Course Convener:</td>
<td>Kailing Shen</td>
</tr>
<tr>
<td>Phone:</td>
<td>6125 3903</td>
</tr>
<tr>
<td>Office</td>
<td>Crisp 2090</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:kailing.shen@anu.edu.au">kailing.shen@anu.edu.au</a></td>
</tr>
<tr>
<td>Office hours for student consultation:</td>
<td>Tuesday 3:30-5pm</td>
</tr>
<tr>
<td>Research Interests</td>
<td>Empirical and/or policy-related questions of the labor market as broadly defined, such as unemployment insurance, job search and matching behavior, discrimination, gender differentials, income inequality, higher education, migration, marriage and intergenerational relationship.</td>
</tr>
</tbody>
</table>

Relevant administrator  
Karissa Carkeet  
Phone: 6125 0384  
Email: Enquiries.rse@anu.edu

Lecturer(s)  
Kailing Shen  
Phone(s): 6125 3903  
Email(s): kailing.shen@anu.edu.au  
Office hours for student consultation: Tuesday 3:30-5pm

**SEMESTER S1**  
2016
COURSE OVERVIEW

Course Description
In econometrics, we are often interested in causal questions. Parents want to know if the costs of sending their children to private school are justified by improved learning outcomes. An NGO that teaches business skills to tradespeople in Africa wants to know by how much this improves their livelihood. The Australian Government wants to know whether handing out hundreds of dollars in cash to more than 13 million people was an effective way of avoiding the looming recession (as happened in 2009)?

Disentangling causation from association is the holy grail of modern econometrics. In this course, we will look at how we can uncover and estimate causal effects (also called “treatment effects”). We cover econometric strategies such as randomised controlled trials, instrumental variables, difference-in-differences models, and regression discontinuity designs. We will discuss many important examples of causal inference in econometrics, and you will spend time discovering causal relationships in the computer lab. Along the way, we will also talk about model specification (how to decide what variables go on the right-hand side) and, time permitting, propensity score matching estimators.

Learning Outcomes
Upon successful completion of this course, students will be able to

1. Explain econometric concepts related to causal inference such as endogeneity, confounding factors, measurement error, sample selection, simultaneity, etc
2. Recognise and identify issues and problems (such as endogeneity) in empirical applications which may affect the analysis or the interpretation of estimates and tests.
3. Explain modern approaches to identifying causal effects such as instrumental variables methods, regression discontinuity designs, and difference-in-difference models
4. Analyse economic data for causal relationships using appropriate econometric techniques and computer software

Assessment Summary
Assignments, 30%; participation, 10%; midterm exam, 30%; final exam, 30%.

Scaling of Grades:
Final scores for the course will be determined by scaling the raw score totals to fit a sensible distribution of grades. Scaling can increase or decrease a mark but does not change the order of marks relative to the other students in the course. If it is decided that scaling is appropriate, then the final mark awarded in a course may differ from the aggregation of the raw marks of each assessment component.

Research-Led Teaching
Based on all the econometrics tools previously studied, this course prepares students for applying the most appropriate econometric tools in empirical works, especially using micro data. By explaining the advantages and potential problems of common identification strategies, students will develop a sense of how to make choices among different strategies based on available data and economic research questions at hand.

Feedback
Staff Feedback
Students will be given feedback in the following forms in this course:
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

Required Resources

Commonwealth supported students and domestic full-fee paying students generally must be able to complete the requirements of their program of study without the imposition of fees that are additional to the student contribution amount or tuition fees. Provided that its payment is in accordance with the Act, a fee is of a kind that is into any one or more of the following categories:

(a) It is a charge for a good or service that is not essential to the course of study.
(b) It is a charge for an alternative form, or alternative forms, of access to a good or service that is an essential component of the course of study but is otherwise made readily available at no additional fee by the higher education provider.
(c) It is a charge for an essential good or service that the student has the choice of acquiring from a supplier other than the higher education provider and is for:
   (i) equipment or items which become the physical property of the student and are not consumed during the course of study; or
   (ii) food, transport and accommodation costs associated with the provision of field trips that form part of the course of study.
(d) It is a fine or a penalty provided it is imposed principally as a disincentive and not in order to raise revenue or cover administrative costs.

Examination material or equipment

To be announced through course site at wattle.
Recommended Resources

There will not be designated textbooks, but the following books at the graduate level might be helpful:


- Microeconometrics: Methods and Applications, by Cameron and Trivedi


COURSE SCHEDULE (tentative)

Meeting time and location:
Wednesdays, 10:00-11:00 lectures, Arndt Lecture Theatre 1;
Wednesdays, 15:00-16:00 computer lab, COP G025;

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Calendar week</th>
<th>date</th>
<th>Topics for undergraduate students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>17 Feb</td>
<td>Paper [154] + intro to Stata</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>24 Feb</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>2 March</td>
<td>Empirical research overview (data types, sampling, descriptive, reduced and structural)</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>9 March</td>
<td>Control for confounding variables</td>
</tr>
<tr>
<td>5</td>
<td>11</td>
<td>16 March</td>
<td>Paper [1] + data sets</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>23 March</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>30 March</td>
<td>Fixed effects and dif-in-dif</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>20 April</td>
<td>Paper [4] + assignment 1</td>
</tr>
<tr>
<td>9</td>
<td>17</td>
<td>27 April</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>18</td>
<td>4 May</td>
<td>Instrumental variables</td>
</tr>
<tr>
<td>11</td>
<td>19</td>
<td>11 May</td>
<td>Paper [80]</td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>18 May</td>
<td>Regression discontinuity</td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td>25 May</td>
<td>Extra (propensity score, LATE, ATT, etc.)</td>
</tr>
</tbody>
</table>

The details of papers referred above can be found at the end of this document.
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

Participation

Active participation and discussion will be expected. The participation will be judged by the quantity and quality of discussion on class.

Details of Assessment Tasks will announced through Wattle and on class.

Examination(s)

There will be formal midterm and final exams for this course. Details will be announced through Wattle and on class.

Assignment submission

Online Submission: Unless an exemption has been approved by the Associate Dean (Education) a submission must be through Turnitin. 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

Through Turnitin

Resubmission of assignments

Students wish to resubmit some or all assignments will need to get the permission from the lecturer.
Referencing requirements

The Chicago Manual of Style’s author-date should be used for this course. For guidance, please refer to http://www.chicagomanualofstyle.org/tools_citationguide.html

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/
EMET 3006 Reading list:

**Week 1 & 2: descriptive research**


**Week 5&6 Difference in Difference**


**Week 8 & 9 Instrumental Variables**


**Week 11 Regression Discontinuity**