

ECON2111: Econometrics

Newcastle City Precinct
Semester 1 - 2025



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

Our mission is to develop future business leaders who will create economic prosperity, social impact and raise awareness of sustainability issues in the communities that we serve. To achieve our mission, we will provide innovative and inclusive business education, develop entrepreneurial, technologically adept and data conscious graduates and will cultivate and grow a vibrant environment that fosters excellence, sustainability and social justice.

OVERVIEW

Course Description

This course is designed to introduce core econometric techniques that are used to analyse business, finance, and economic data. The course covers the properties of linear regression models, as well as the consequences of violating classic regression assumptions. Diagnostic testing and econometric remedies are discussed, including heteroscedasticity, autocorrelation, omitted variable bias, measurement error, and the use of instrumental variables. The course explores simple linear and multiple regression modelling and then progresses to time-series models, panel data models and limited dependent variable modelling, and the use of dummy variables and instrumental variables. Emphasis is placed on understanding the theory behind econometric modelling and critically analysing the strengths and weaknesses of econometric techniques. Additionally, students will learn about collecting real-world data and using an econometric package to analyse the data and interpret the empirical results to address business, finance and economic policy issues relevant to business decision-making.

Academic Progress Requirements

Nil

Assumed Knowledge

BUSN1010

Contact Hours

**Newcastle City Precinct
Integrated Learning Session**
Face to Face On Campus
2 hour(s) per week(s) for 13 week(s) starting Week 1

Students are expected to complete 4 hours of guided learning via online preparation, lectures, interactive workshops, tutorials, discussion groups or self-directed learning and an additional 6 hours of independent study per week.

Unit Weighting Workload

10
Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

www.newcastle.edu.au

CRICOS Provider 00109J

CONTACTS

Course Coordinator	The primary contact for courses is the Course Coordinator, whose details are listed on the course CANVAS site.
Student Consultation	A minimum of one (1) hour of consultation per week. Please see course CANVAS site for details of time and location.
Teaching Staff	Please refer to the course CANVAS site for details of teaching staff for ALL course offerings.
School Office	<p>Newcastle Business School – Callaghan, Newcastle City & Online NU Space 409 Hunter Street Newcastle nbs.enquiries@newcastle.edu.au +61 2 4921 5511</p> <p>Newcastle Business School - Ourimbah BO1.13, Business Offices Ourimbah cccbusiness-school@newcastle.edu.au +61 2 4349 4453</p> <p>Newcastle Business School - Sydney 55 Elizabeth Street Sydney nbs-sydney@newcastle.edu.au +61 2 82626432</p> <p>PSB Academy Enquiries Log your question or request to the PSB Program Executives at the following website: http://www.psb-academy.edu.sg/eng +65 6390 9000</p> <p>Newcastle Australia Institute of Higher Education Pte Ltd 100 Victoria Street #13-01/02 National Library Building Singapore Singapore-StudentCentral@newcastle.edu.au +65 6221 3306</p>

SYLLABUS

Course Content	<p>Topics include:</p> <ul style="list-style-type: none">• Basic regression concepts• Properties of estimators• Violations of classical assumptions• Estimation and hypothesis testing• Simple linear and multiple regression modelling• Simultaneous equations models• Instrumental variable models• Limited dependent variable models• Time series analysis• Panel data analysis
Course Learning Outcomes	<p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none">1. Explain the specification issues of linear regression models.2. Develop econometric skills to critically analyse applied economic research.3. Implement hypothesis testing and inference in linear regression models.4. Use appropriate econometric models and techniques to analyse business, finance and

- economic data and interpret the results.
5. Employ collaborative problem-solving, information literacy and inquiry skills.

Course Materials

Required Text:

Wooldridge, J. M. (2021). *Introductory Econometrics: A Modern Approach* (7th ed.). Cengage Learning

ISBN: 9781337558860 / 9780357693223 (eText)

SCHEDULE

Week	Week Begins	Topic	Class Preparation	Assessment Due
1	24 Feb	Introduction to econometrics	Class preparation: Chapter 1 Installation of statistical software Rstudio Self-directed: Introduction to RStudio	
2	3 Mar	Simple linear model	Class preparation: Chapter 2 Sections 2.1-2.2 Self-directed: estimation of a simple linear model in Rstudio	
3	10 Mar	Properties and assumptions of OLS method	Class preparation: Chapter 2 Sections 2.3, 2.4, 2 Self-directed: Goodness of fit interpretation in Rstudio	
4	17 Mar	Multiple regression modelling: Estimation	Class preparation: Chapter 3 Self-directed: Multiple regression analysis in Rstudio (if not completed in class)	
5	24 Mar	In-Class Test		Assessment 1 due: In-Class of Week 5
6	31 Mar	Carrying out an empirical project	Class preparation: Chapter 19 Download paper: Yang and Nino (2023) from Canvas site Comprehensive introduction to data wrangling, descriptive statistics and estimations in Rstudio	
7	7 Apr	Multiple regression modelling: inference	Class preparation: Chapter 4 Self-directed: Hypothesis testing and confidence intervals (if not completed in class)	
Recess				
Recess				
8	28 Apr	Multiple regression modelling: further issues	Class preparation: Chapter 5 and some parts of Chapter 2 not covered so far	
9	5 May	Time series analysis	Class preparation: Chapter 10	Assessment 2 due: Sunday of Week 9 by 11:59 pm
10	12 May	Panel data	Class preparation: Chapter 13 and 14	
11	19 May	Instrumental variable models	Class preparation: Chapter 15	

12	26 May	Limited dependent Variable models: probit and logit models	Class preparation: Chapter 7 section 7.5 and chapter 17 section 17.1	
13	2 Jun	Q & A		
Exams				
Exams				
If a lecture/class is scheduled on a public holiday, a make-up lecture may be announced by the course coordinator on the course CANVAS site.				

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	In-Class Test	In-Class of Week 5	Individual	20%	1, 2, 3, 4
2	Group Project Report	Sunday of Week 9 by 11:59 pm	Group	30%	3, 4, 5
3	Final Examination	Formal Exam Period	Individual	50%	1, 2, 3, 4

Please note: students are advised that all assessments must be submitted in English. Assessment items not submitted in English will receive a mark of zero.

Results of individual assessment items and final results, including those provided via the Learning Management System (LMS) are 'unofficial results' until they are confirmed as finalised by the School Assessment Body and the Head of School or delegate. Finalised results are released directly to students on the Fully Graded Date of the relevant Semester/Trimester.

Time referenced is time in Newcastle, NSW

Late Submissions The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - In-Class Test

Assessment Type	In Term Test
Description	The purpose of the In-Class Test is to evaluate a student's comprehension of the fundamental principles and concepts of econometrics taught in the course. Furthermore, it aims to gauge the student's capability to use quantitative techniques to solve business, finance and economic issues and present the findings in a well-informed manner.
Weighting	20%
Due Date	In-Class of Week 5
Submission Method	In class
Assessment Criteria	Relevance to the question, accuracy of information, clarity of expression.
Return Method	In class
Feedback Provided	Returned work – feedback on the assessment will be provided via comments with returned work.
Opportunity to Reattempt	Students will not be given the opportunity to reattempt this assessment.

Assessment 2 - Group Project Report

Assessment Type	Report
Description	The group project report serves the purpose of evaluating the collaborative and teamwork skills of students, as well as their ability to analyse real-world data using econometric techniques. Additionally, it assesses their proficiency in interpreting the results and writing a concise, informative report that can inform business, finance, and economic decision-making.
Weighting	30%
Due Date	Sunday of Week 9 by 11:59 pm
Submission Method	Online via Canvas site
Assessment Criteria	Marking rubric
Return Method	Online via Canvas site
Feedback Provided	Online via Canvas site

Opportunity to Reattempt Students will not be given the opportunity to reattempt this assessment.

Assessment 3 - Final Examination

Assessment Type	2 hr Formal Examination
Description	<p>The purpose of the final examination is to evaluate students' comprehension of the fundamental principles and concepts of econometrics taught in the course. It involves testing their capacity to apply quantitative methods, concepts, and techniques to precisely analyse and interpret econometric results. Additionally, the exam aims to assess their ability to communicate the findings in a concise and well-informed manner.</p> <p>This course has a RESTRICTED OPEN BOOK examination. A memory aid is permitted. The memory aid is a single double sided A4 sheet of handwritten or typed notes for use during the examination. Note: memory aids must be left on the examination table and cannot be removed from the examination venue.</p>
Weighting	50%
Due Date	Formal exam period
Submission Method	Formal examination
Assessment Criteria	Accuracy of answers with detailed workings and clarity of expression
Return Method	Not returned
Feedback Provided	No feedback. Examination scripts will not be returned to students. Final examination scripts will be made available for review by students, upon request, in a controlled and monitored setting. Students are required to make requests, directly to the relevant course coordinator. Completed examination scripts are kept by the Newcastle Business School for a period of six (6) months only, from the relevant fully graded date. Request made after the six (6) month period cannot be considered.
Opportunity to Reattempt	Students will not be given the opportunity to reattempt this assessment.

ADDITIONAL INFORMATION

Grading Scheme This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods	<p>Communication methods used in this course include:</p> <ul style="list-style-type: none"> - Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site. - Email: Students will receive communications via their student email account.
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Course Evaluation	<ul style="list-style-type: none"> - Face to Face: Communication will be provided via face to face meetings or supervision. Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.
Learning Analytics	The University uses an evidence-based approach to enhancing student learning and delivering support. Our careful analysis of data through learning analytics informs decision making processes related to student learning, academic outcomes, and support services. Learning analytics may be used to identify targeted individual opportunities for additional support services or interventions.
Oral Interviews (Vivas)	<p>As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the Oral Examination (viva) Procedure.</p> <p>In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the Student Conduct Rule.</p>
Academic Integrity and Ethical Academic Conduct Policy	<p>All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations.</p> <p>Please refer to the Academic Integrity and Ethical Academic Conduct Policy</p>
Adverse Circumstances	<p>The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s).</p> <p>Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:</p> <ol style="list-style-type: none"> 1. the assessment item is a major assessment item; or 2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system; 3. you are requesting a change of placement; or 4. the course has a compulsory attendance requirement. <p>Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure.</p>
Use of generative artificial intelligence in course assessments	<p>It is critical that any work submitted for assessment is your own original work. Before using generative AI tools (such as ChatGPT, Perplexity, Microsoft Copilot, etc) in any assessable work you must ensure that such use is in line with the requirements for the course and expectations of your Course Coordinator</p> <p>Misuse of AI tools may be considered a breach of the University's Student Conduct Rule and could result in disciplinary action.</p> <p>Artificial Intelligence detection software may be used to review any work you submit. If you have used AI in any way other than has been expressly permitted by your course coordinator, you may be engaging in academic misconduct and be subject to penalties. For information, refer to:</p> <ul style="list-style-type: none"> • Generative AI Tools • Academic Integrity
Important Policy Information	<p>The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures that support a safe and respectful environment at the University</p>

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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