

CLASS SUMMARY | [BACK TO COURSE DETAILS](#)

First Semester

Academic Year : 2024

## Econometrics I: Econometric Methods

An Undergraduate course offered by the **Research School of Economics**.



CLASS NUMBER 4095 TERM CODE 3430

**CLASS INFO**Unit Value  
**6 units**Mode of Delivery  
**In Person****COURSE CONVENER****Dr Juergen Meinecke****CLASS DATES**Class Start Date  
**19/02/2024**Class End Date  
**24/05/2024**Census Date  
**05/04/2024**Last Date to Enrol  
**26/02/2024**

This course provides an introduction to econometric methods and their applications. The main workhorse of applied econometrics is the linear regression model and the course will develop its theory and look at a wide range of applications. The course emphasizes intuitive and conceptual understanding as well as hands on econometric analysis using modern computer software on data sets from economics and business. Students learn how to conduct empirical studies, as well as how to analyze and interpret results from other empirical works. We cover a broad range of topics, including: brief review of basic statistics; ordinary least squares estimation and its properties; choice of functional form; departures from standard OLS assumptions; time series analysis.

This is a hand-on course with a focus on applications in economics as well as business. A standard statistical software will be used during computer sessions, no special programming skills are required.

### **Learning Outcomes**

1. define the ordinary least squares (OLS) estimator in the linear regression model;
2. derive and examine statistical properties of the OLS estimator;
3. employ the central limit theorem to approximate the statistical distribution of the OLS estimator;
4. demonstrate an understanding of strengths and limitations of the OLS estimator;
5. summarise and analyse actual economic data with use of a specialised econometric software;
6. contextualise and critically evaluate the results of empirical analysis.

### **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. Students are expected to have read the [Academic Misconduct Rule](#) before the commencement of their course. Other key policies and guidelines include:

- Student Assessment (Coursework) [Policy](#) and [Procedure](#)
- Special Assessment Consideration [Policy](#) and [General Information](#)
- [Student Surveys and Evaluations](#)
- [Deferred Examinations](#)
- Student Complaint Resolution [Policy](#) and [Procedure](#)

### **Research-Led Teaching**

This course teaches state-of-the-art methods and practices in econometrics. We will use applications and data sets from recently published papers in top academic journals.

### **Examination Material or equipment**

No permitted materials for the final exam.

### **Required Resources**

The textbook for the course is Introduction to Econometrics (fourth edition, 2019) by Stock and Watson. The lecture is based on this textbook. The textbook can be purchased from the on campus bookshop, or a small number of copies are available in the ANU library.

We will work through applied econometric exercises using a web-based, non-proprietary Python environment. No preliminary knowledge of Python is required, we will learn all necessary skills in a "learning by doing manner" during the weekly computer labs. We will be coding in Python via so-called "Jupyter notebooks", which are a web-based way for you to code, compute, and graph using the Python programming language. All you need is an internet browser. More information will be

provided in weeks 1 and 2 of the semester.

## Recommended Resources

If possible, we do recommend that you interact with Python on your own computer, ideally a laptop that you bring along to the weekly computer labs. We do not require you to have your own computer: we also offer dedicated lab sessions in the ANU computer rooms in the Copland building (see timetable for details).

All necessary information regarding the computational side of this course will be offered during weeks 1 and 2 of the semester.

## Staff Feedback

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

- Written comments
- Verbal comments
- Feedback to the whole class, to groups, to individuals, focus groups

## Student Feedback

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. Students are encouraged to offer feedback directly to their Course Convener or through their College and Course representatives (if applicable). 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. The [Surveys and Evaluation website](#) provides more information on student surveys at ANU and [reports](#) on the feedback provided on ANU courses.

## Other Information

Material for the course is available on the Wattle Class Site and also on the following course website:

- <https://juergenmeinecke.github.io/EMET2007/>

## Class Schedule

WEEK/SESSION	SUMMARY OF ACTIVITIES	ASSESSMENT
1	Introduction, Review of Statistics	
2	Review of Statistics	
3	Principles of Econometric Modelling	Wattle quiz 1
4	Simple Linear Regression Model	
5	Simple Linear Regression Model	Wattle quiz 2
6	Simple Linear Regression Model	Assignment 1
7	Multiple Linear Regression Model	
8	Multiple Linear Regression Model	
9	Extensions of the Regression Model	Wattle quiz 3
10	Time Series Regression Models	
11	Time Series Regression Models	Assignment 2
12	Time Series Regression Models	Wattle quiz 4

## Assessment Summary

ASSESSMENT TASK	VALUE	LEARNING OUTCOMES
Computer assignments	20 %	5,6
Online quizzes	30 %	1,2,3,4
Participation in computer labs	10 %	5,6
Final Exam	40 %	1,2,3,4,5,6

\* If the Due Date and Return of Assessment date are blank, see the Assessment Tab for specific Assessment Task details

## 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, hard copies of all references included in the assessment item.

## Moderation of Assessment

Marks that are allocated during Semester are to be considered provisional until formalised by the College examiners meeting at the end of each Semester. If appropriate, some moderation of marks might be applied prior to final results being released.

## Participation

Lectures, workshops, computer labs, and consultations will be face to face. The weekly lecture/workshop sessions will be recorded on Echo 360 and available soon after the lectures on the course Wattle page.

We will offer weekly drop-in consultation sessions where you can seek help and support about the course material and also the Python coding. Days and times of these sessions will be communicated regularly via the Wattle announcement board beginning in week 1 of the semester.

Computer labs will start in week 2. The labs are a learning activity and include a significant discussion-based component. Worked solutions are not provided because they would not effectively compensate for missing a lab. Worked solutions imply that there is a unique correct solution and are therefore in opposition to the development of professional judgement, which is a key part of this course. Students who, through unavoidable and unplanned occurrences, are unable to attend a tutorial one week are encouraged to work through the problems and attend a consultation session to discuss any questions they have about their solutions.

Details on the delivery of this course and expectations of student participation are outlined in further detail on the Wattle course site in O-week. Attendance at lectures and computer labs, while not compulsory, is expected in line with "Code of Practice for Teaching and Learning", clause 2 paragraph (b).

## Examination(s)

See Assessment Task 4 - Final Exam

## Assessment Task 1

### Computer assignments

There will be two compulsory take home computer assignments. Each assignment counts 10% towards your total course mark.

**Value:** 20 %

**Learning Outcomes:** 5,6

The assignments focus on applied econometric work using Python, but they also test your understanding of intuitive concepts and theory from the lecture and workshop.

### Timeline:

- Assignment 1 is due in week 6 on 28 March 2023 at 5:00pm (sharp!) and will be returned in week 7 of the semester.

- Assignment 2 is due in week 11 on 16 May 2023 at 5:00pm (sharp!) and will be returned in week 12 of the semester.

Assignments must be submitted via file upload on Wattle by the due date. Further details about assignment submission will be given during lectures. Assignments will be made available on the course website at the beginning of the semester (week 1).

These assignments should be your own work. You may discuss assignments with classmates, but you should do all your own computing and writing of the assignments. It is an offense against the University's regulations to copy from other students assignments.

#### Extensions:

Not permitted. The assignments are designed in such a way that students have more than enough time to meet the deadlines. The course convenor will also send timely reminders and explain the importance of planning ahead and making allowance for unexpected eventualities so that students maximize their chances of submitting well before the deadline.

#### Missed assignment:

- If you miss an assignment without an approved reason a mark of zero will be given.
- If you miss an assignment with an approved reason (for example, due to documented sickness) the final exam will be scaled up commensurately. (That is, the final exam will effectively make up for the missed assignment.)

## **Assessment Task 2**

### **Online quizzes**

There will be 4 compulsory online quizzes throughout the semester. Each quiz counts 7.5% towards your total course mark.

**Value:** 30 %  
**Learning Outcomes:** 1,2,3,4

Each quiz tests all the material covered in the lectures, computer tutorials, and problem solving tutorials.

#### Timeline:

- Quiz 1 takes place Wed/Thu in week 3 - covering material from weeks 1 and 2
- Quiz 2 takes place Wed/Thu in week 5 - covering material from weeks 3 and 4
- Quiz 3 takes place Wed/Thu in week 9 - covering material from weeks 5, 6, 7, and 8
- Quiz 4 takes place Wed/Thu in week 12 - covering material from weeks 9, 10, and 11

#### Logistics:

- The quizzes are offered through the Wattle Class Site. The format of the quizzes is mostly multiple choice and true/false type questions.
- Each quiz will be available from 9:00am on the Wednesday of the corresponding week until 3:00pm on the Thursday of the corresponding week. During this 30 hour time window you can attempt the quiz once, and you have 60 minutes to complete it. Marks will be available upon closure of the quiz at 3:00pm on the Thursday of the week.

More information will be offered during weeks 1 and 2 of the semester (with timely reminders throughout the semester).

### Extensions:

Not permitted.

### Missed quiz:

- If you miss a quiz without an approved reason a mark of zero will be given.
- If you miss a quiz with an approved reason (for example, due to documented sickness) the final exam will be scaled up commensurately. (That is, the final exam will effectively make up for the missed quiz.)

## Assessment Task 3

### Participation in computer labs

**Value:** 10 %  
**Learning Outcomes:** 5,6

Your participation is an essential part in the overall learning experience (both for you as well as your classmates!) in the course. I will evaluate you on your participation during the weekly computer labs. By participation I specifically mean:

- answering questions;
- asking relevant and helpful questions.

Feel free to participate in and contribute to these sessions!

Do not be afraid to give "wrong" answers; as long as you are constructively engaged, there is no such thing as a wrong answer. After every tutorial your tutor will take note of students who participated in class and at the end of the semester I will aggregate these numbers to an overall participation mark. Please see the marking rubric below for further guidance. I will post progress marks on Wattle at the end of week 6 to offer you early feedback on your participation.

Do not confuse participation with attendance! In order to participate, you do need to attend. But in addition you also need to contribute to the tutorial discussion. (Attendance is necessary but not sufficient for participation.)

### Rubric

	LEVEL OF ATTAINMENT:	EXEMPLARY	COMPETENT	DEVELOPING
Criteria	Description of criteria			
Provided constructive comments	Constructive comments focus on significant issues that bear on the topic in question. They include elaboration on a topic, explaining its assumptions, using helpful examples or analogies.	2 marks	1 mark	0 marks
Asked relevant and constructive questions	Relevant and constructive questions focus on significant issues that bear on the topic in question.	2 marks	1 mark	0 marks
Articulated ideas clearly	Use of clear, simple sentences to explain one's ideas.	2 marks	1 mark	0 marks
Presented well	Comments are coherent and set out in a systematic manner such that people	2 marks	1 mark	0 marks

structured arguments can follow what you are saying.

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Demonstrated consideration and respect of others	If there are differences of opinion, they are explored in a considerate and respectful way.	2 marks	1 mark	0 marks
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Column totals:		10 marks	5 marks	0 marks
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## Assessment Task 4

### Final Exam

**Value:** 40 %

**Learning Outcomes:** 1,2,3,4,5,6

A final exam will be held during the ANU exam period. The exam will be an on-campus invigilated exam.

The exam is a closed-book exam, no materials are permitted.

The exam will cover material presented throughout the entire course (including lectures, problem solving tutorials, and computer tutorials).

Timing of the final exam: Reading time is 0 minutes, writing time is 120 minutes.

Further details will be provided during lecture by week 10. I will make available a practice exam for you to get a realistic sense for the actual final exam.

### Hurdle requirement:

**A minimum final exam mark of 20 out of 100 is required to pass the course, regardless of performance in other assessment items.**

## Academic Integrity

Academic integrity is a core part of our culture as a community of scholars. At its heart, academic integrity is about behaving ethically. This means that all members of the community commit to honest and responsible scholarly practice and to upholding these values with respect and fairness. The Australian National University commits to embedding the values of academic integrity in our teaching and learning. We ensure that all members of our community understand how to engage in academic work in ways that are consistent with, and actively support academic integrity. The ANU expects staff and students to uphold high standards of academic integrity and act ethically and honestly, to ensure the quality and value of the qualification that you will graduate with. The University has policies and procedures in place to promote academic integrity and manage academic misconduct. Visit the following [Academic honesty & plagiarism website](#) for more information about academic integrity and what the ANU considers academic misconduct. The ANU offers a number of services to assist students with their assignments, examinations, and other learning activities. The [Academic Skills and Learning Centre](#) offers a number of workshops and seminars that you may find useful for your studies.

### Online Submission

Assignment submission is via the Wattle file upload facility. Details will be provided during the lecture by week 6. We will NOT be using Turnitin.

You will be required to electronically sign a declaration as part of the submission of your assignment. Please keep a copy of your assignment for your records.

### Hardcopy Submission

Not permitted.

## Late Submission

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.

## Referencing Requirements

Accepted academic practice for referencing sources that you use in presentations can be found via the links on the Wattle site, under the file named "ANU and College Policies, Program Information, Student Support Services and Assessment". Alternatively, you can seek help through the [Students Learning Development](#) website.

## Returning Assignments

Assignments will be returned in the week following the submission due date.

When you receive a marked assignment back you should check immediately if you agree with the marking. If not, you must raise your concerns promptly (within one week of receiving the assignment). We will not, under any circumstances, remark any assignments for which you have not raised your concerns within this time frame. Reminders of this policy will be given on several occasions throughout the semester.

## 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 an extension 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.

## Resubmission of Assignments

Not permitted.

## Privacy Notice

The ANU has made a number of third party, online, databases available for students to use. Use of each online database is conditional on student end users first agreeing to the database licensor's terms of service and/or privacy policy. Students should read these carefully. In some cases student end users will be required to register an account with the database licensor and submit personal information, including their: first name; last name; ANU email address; and other information. In cases where student end users are asked to submit 'content' to a database, such as an assignment or short answers, the database licensor may only use the student's 'content' in accordance with the terms of service — including any (copyright) licence the student grants to the database licensor. Any personal information or content a student submits may be stored by the licensor, potentially offshore, and will be used to process the database service in accordance with the licensor's terms of service and/or privacy policy. If any student chooses not to agree to the database licensor's terms of service or privacy policy, the student will not be able to access and use the database. In these circumstances students should contact their lecturer to enquire about alternative arrangements that are available.

## Distribution of grades policy

Academic Quality Assurance Committee monitors the performance of students, including attrition, further study and employment rates and grade distribution, and College reports on quality assurance processes for assessment activities, including alignment with national and international disciplinary and interdisciplinary standards, as well as qualification type learning outcomes. Since first semester 1994, ANU uses a [grading scale](#) for all courses. This grading scale is used by all academic areas of the University.

## Support for students

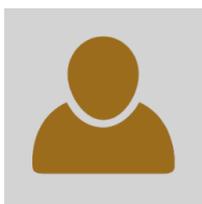
The University offers students support through several different services. You may contact the services listed below directly or seek advice from your Course Convener, Student Administrators, or your College and Course representatives (if applicable).

- [ANU Health, safety & wellbeing](#) for medical services, counselling, mental health and spiritual support

- [ANU Diversity and inclusion](#) for students with a disability or ongoing or chronic illness
- [ANU Dean of Students](#) for confidential, impartial advice and help to resolve problems between students and the academic or administrative areas of the University
- [ANU Academic Skills and Learning Centre](#) supports you make your own decisions about how you learn and manage your workload.
- [ANU Counselling Centre](#) promotes, supports and enhances mental health and wellbeing within the University student community.
- [ANUSA](#) supports and represents undergraduate and ANU College students
- [PARSA](#) supports and represents postgraduate and research students

## Convener

[Details](#)



Dr Juergen Meinecke

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### Research Interests

Econometrics, Computational

### Consulting Hours

Sunday 23:49