# EC226-30 Econometrics 1

## 22/23

**Department**
Economics
**Level**
Undergraduate Level 2
**Module leader**
Jeremy Smith
**Credit value**
30
**Module duration**
20 weeks
**Assessment**
Multiple
**Study location**
University of Warwick main campus, Coventry

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## Description

## Introductory description

This module provides students with a thorough understanding basic principles of econometrics. You will be exposed to a range of different econometric tools. You will gain an understanding of simple OLS, the limitations of the application of OLS, potential alternative estimators for the different type of data one might encounter including: cross-sectional data sets, time series data set and panel data sets.. You will gain skills and techniques to analyse problems from an intuitive, graphical and statistical perspective applying your knowledge to real world data.

Module web page

## Module aims

The course aims to provide students with important skills, which are of both academic and vocational value, being an essential part of the intellectual training of an economist and also useful for a career. In particular the course aims to equip students with the following competencies: 1. An awareness of the empirical approach to economics; 2. Experience in the analysis and use of empirical data in economics; 3. Understanding the nature of uncertainty and methods of dealing with it; 4. The use of econometric software packages as tools of quantitative and statistical analysis.

## Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The module will typically cover the following topics:Linear regression model. Least squares estimation. Dummy variables. Linear Restrictions. Classical Linear Regression Model Assumptions. Breakdown of CLRM assumptions. Errors in variables. Heteroscedasticity and implications for OLS. Structural change. Incorrect functional form and implications for OLS. Instrumental variable estimation. Dynamic models with lagged dependent variable. Serial Correlation and implications for OLS. Types of autocorrelation. Nonstationarity and Cointegration. Panel data models. Limited dependent variable models.

## Learning outcomes

By the end of the module, students should be able to:

- Acquired the tools of quantitative methods necessary to study core and optional second and third year modules in economics for single honours courses in Economics. The teaching and learning methods that enable students to achieve this learning outcome are: Lectures and classes. The summative assessment methods that measure the achievement of this learning outcome are: Test, exam, and assignment (group work).
- Developed their understanding of statistical (econometric) software and economics databases. The teaching and learning methods that enable students to achieve this learning outcome are: Lectures and classes. The summative assessment methods that measure the achievement of this learning outcome are: Tests, assignment (group work).
- Further developed their communication skills in presenting and analysing data. The teaching and learning methods that enable students to achieve this learning outcome are: Classes. The summative assessment methods that measure the achievement of this learning outcome are: Tests, assignment (group work).
- Developed further their techniques of statistical methods; generated a thorough understanding of the statistical techniques as well as a critical appreciation of them. The teaching and learning methods that enable students to achieve this learning outcome are: Lectures and classes. The summative assessment methods that measure the achievement of this learning outcome are: Test, exam, and assignment (group work).

## Indicative reading list

Please see Talis Aspire link for most up to date list.

View reading list on Talis Aspire

## Subject specific skills

Students will have the opportunity to develop skills in:
Analytical thinking and communication

Analytical reasoning
Critical thinking
Problem-solving
Abstraction
Policy evaluation
Analysis of incentives
Concepts of Simultaneity and Endogeneity
Analysis of optimisation
Understanding of Uncertainty and Incomplete Information

## Transferable skills

Students will have the opportunity to develop:
Research skills
Numeracy and quantitative skills
Data-based skills
IT skills
Written communication skills
Oral communication skills
Team work skills
Mathematical, statistical and data-based research skills

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## Study

## Study time

| Type | Required |
| --- | --- |
| Lectures | 57 sessions of 1 hour (19%) |
| Seminars | 18 sessions of 1 hour (6%) |
| Private study | 225 hours (75%) |
| Total | 300 hours |

## Private study description

Private study will be required in order to prepare for seminars/classes, to review lecture notes, to prepare for forthcoming assessments, tests, and exams, and to undertake wider reading around the subject.

## Costs

No further costs have been identified for this module.

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## Assessment

You do not need to pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

### Assessment group D4

| | Weighting | Study time | Eligible for self-certification |
|---|---|---|---|
| Test<br>In class 50 minute test | 15% | | No |
| Group Project<br>Group Research Project | 15% | | No |
| 5 x online multiple choice question tests | 5% | | No |
| 5 x online multiple choice question tests (1% each). One aggregate mark awarded for all 5 components. | | | |
| Group work assignment<br>Stata do files group submission | 5% | | Yes (waive) |
| Online Examination | 60% | | No |
| A paper which examines the course content and ensures learning outcomes are achieved.<br><br>~Platforms - AEP | | | |

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- Answerbook provided by department
- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)

### Assessment group R

| | Weighting | Study time | Eligible for self-certification |
|---|---|---|---|
| Examination - Resit | 100% | | No |
| A paper which examines the course content and ensures learning outcomes are achieved.<br><br>~Platforms - AEP | | | |

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- Answerbook provided by department

| | Weighting | Study time | Eligible for self-certification |
|---|---|---|---|

- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)

### Assessment group S

| | Weighting | Study time | Eligible for self-certification |
|---|---|---|---|
| Test | 15% | | No |
| Group Project | 15% | | No |
| 5 x online multiple choice question tests | 5% | | No |
| Group work assignment | 5% | | Yes (waive) |
| Examination | 60% | | No |

- Answerbook provided by department
- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)

### Feedback on assessment

The Department of Economics is committed to providing high quality and timely feedback to students on their assessed work, to enable them to review and continuously improve their work. We are dedicated to ensuring feedback is returned to students within 20 University working days of their assessment deadline. Feedback for assignments is returned either on a standardised assessment feedback cover sheet which gives information both by tick boxes and by free comments or via free text comments on tabula, together with the annotated assignment. For tests and problem sets, students receive solutions as an important form of feedback and their marked assignment, with a breakdown of marks and comments by question and sub-question. Students are informed how to access their feedback, either by collecting from the Undergraduate Office or via tabula. Module leaders often provide generic feedback for the cohort outlining what was done well, less well, and what was expected on the assignment and any other common themes. This feedback also includes a cumulative distribution function with summary statistics so students can review their performance in relation to the cohort. This feedback is in addition to the individual-specific feedback on assessment performance.

Past exam papers for EC226

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## Availability

### Pre-requisites

Any of:

EC121-12 Mathematical Techniques A

OR

EC123-12 Mathematical Techniques B AND
EC124-12 Statistical Techniques B

OR

IB122-15 Business Analytics
EC106-24 Introduction to Economics OR
EC107-30 Economics 1

EC106 or EC107 for GL11, MORSE and other students from Mathematics/Statistics Departments.

### Post-requisite modules

If you pass this module, you can take:

- EC338-15 Econometrics 2: Microeconometrics

## Courses

This module is Core for:

- Year 1 of TECA-L1PA Postgraduate Taught Economics (Diploma plus MSc)
- UECA-3 Undergraduate Economics 3 Year Variants
    - Year 2 of L100 Economics
    - Year 2 of L116 Economics and Industrial Organization

This module is Core optional for:

- Year 1 of TECA-L1PA Postgraduate Taught Economics (Diploma plus MSc)
- Year 2 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- Year 2 of UECA-3 Undergraduate Economics 3 Year Variants
- UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
    - Year 2 of L1CC Economics, Psychology and Philosophy (Behavioural Economics Pathway)
    - Year 2 of L1CD Economics, Psychology and Philosophy (Economics with Philosophy Pathway)
- Year 2 of UMAA-GL11 Undergraduate Mathematics and Economics
- Year 2 of UECA-GL12 Undergraduate Mathematics and Economics (with Intercalated Year)
- Year 2 of UPHA-V7MM Undergraduate Philosophy, Politics and Economics (with Intercalated year)

This module is Optional for:

- Year 2 of UIBA-N201 BSc in Management
- Year 2 of UIBA-N202 BSc in Management (with Intercalated Year/UPP)

- Year 2 of TECA-L1PA Postgraduate Taught Economics (Diploma plus MSc)
- Year 4 of UIBA-N140 Undergraduate International Business
- Year 4 of UIBA-N1R1 Undergraduate International Business with French
- Year 4 of UIBA-N1R2 Undergraduate International Business with German
- Year 4 of UIBA-N1R3 Undergraduate International Business with Italian
- Year 4 of UIBA-N1R4 Undergraduate International Business with Spanish
- Year 3 of UMAA-GL11 Undergraduate Mathematics and Economics
- Year 4 of UECA-GL12 Undergraduate Mathematics and Economics (with Intercalated Year)
- Year 2 of UPHA-V7ML Undergraduate Philosophy, Politics and Economics
- UPHA-V7MM Undergraduate Philosophy, Politics and Economics (with Intercalated year)
    - Year 4 of V7MQ Philosophy, Politics and Economics (Bipartite) with Intercalated Year
    - Year 4 of V7MH Philosophy, Politics and Economics - Economics/Philosophy Bipartite (Economics Major) (with Intercalated year)
    - Year 4 of V7MI Philosophy, Politics and Economics - Philosophy/Economics Bipartite (Philosophy Major) (with Intercalated year)
    - Year 4 of V7MJ Philosophy, Politics and Economics - Philosophy/Politics Bipartite (with Intercalated year)

This module is Core option list A for:

- Year 2 of ULNA-R1L4 Undergraduate French and Economics (4-year)
- Year 2 of ULNA-R3L4 Undergraduate Italian and Economics (4-year)
- Year 2 of UPHA-V7ML Undergraduate Philosophy, Politics and Economics

This module is Core option list B for:

- Year 2 of UECA-4 Undergraduate Economics 4 Year Variants
- Year 2 of UECA-LM1D Undergraduate Economics, Politics and International Studies
- Year 2 of ULNA-R2L4 Undergraduate German and Economics (4-year)
- Year 2 of ULNA-R4L1 Undergraduate Hispanic Studies and Economics (4-year)
- Year 2 of ULNA-R9L1 Undergraduate Modern Languages and Economics (4-year)

This module is Core option list C for:

- Year 3 of ULNA-R1L4 Undergraduate French and Economics (4-year)

This module is Core option list D for:

- Year 3 of ULNA-R2L4 Undergraduate German and Economics (4-year)
- Year 3 of ULNA-R3L4 Undergraduate Italian and Economics (4-year)
- Year 3 of ULNA-R9L1 Undergraduate Modern Languages and Economics (4-year)

This module is Option list B for:

- Year 4 of UIBA-N203 BSc in International Management
- Year 3 of UIBA-N201 BSc in Management
- Year 4 of UIBA-N202 BSc in Management (with Intercalated Year/UPP)
- Year 3 of UIBA-NN35 Undergraduate Accounting and Finance
- UIBA-NN36 Undergraduate Accounting and Finance (with Intercalated Year/Undergraduate

Partnership Programme)

- Year 2 of NN36 Accounting and Finance (Intercalated)
- Year 3 of NN36 Accounting and Finance (Intercalated)
- Year 4 of NN37 Accounting and Finance (Undergraduate Partnership Programme)