

# EC902-45 Quantitative Methods: Econometrics A

**26/27**

**Department**

Economics

**Level**

Taught Postgraduate Level

**Module leader**

Manuel Bagues

**Credit value**

45

**Module duration**

20 weeks

**Assessment**

Multiple

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

EC902-45 Quantitative Methods: Econometrics A

[Module web page](#)

### Module aims

The aim of the module is to equip students with the necessary skills required for research, including both the acquisition of habits of thought and knowledge of the techniques of modern mathematics, statistics and econometrics. The module does not aim to go beyond the development of these fundamental professional skills to cover more advanced techniques.

### 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 syllabus for this module will be based on the following topics; however this list is not limited to

those listed below and does not infer all of these topics will be studied in the module.

Introductory Mathematics and Statistics: pre-sessional topics covered will include linear algebra, multivariate calculus and constrained optimisation, differential and difference equations, basic probability theory and hypothesis testing.

Econometrics:

Term 1 will cover Randomized control trials, Identification based on observables (e.g. OLS), Instrumental variables Differences-in-differences, Regression discontinuity design.

Term 2 will cover the econometric modelling of economic and financial time-series data. This will include time series models, modelling univariate time series, unit root processes, multivariate time series, autoregressive conditional heteroskedasticity, and panel data.

## Learning outcomes

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

- Subject Knowledge and Understanding: demonstrate an understanding of fundamental concepts in mathematics and statistics relevant to the other core modules and be able to apply these concepts to economics.
- Subject Knowledge and Understanding: demonstrate a deep understanding of material needed for empirical quantitative analysis.
- Subject Knowledge and Understanding: demonstrate a full knowledge of the theory and practice of modern econometrics, particularly applied econometrics.
- Subject Specific and Professional Skills: demonstrate the development of the habit of thought, knowledge and understanding to be able to carry out good quality applied econometric research with confidence and authority.
- Cognitive Skills: develop the critical insight to appraise econometric results obtained by other researchers.

## Indicative reading list

[Reading lists can be found in Talis](#)

[Specific reading list for the module](#)

## Subject specific skills

Applied Economics

Economic Information

Economic Principles

Research and Debate

Abstraction

Analysis of Incentives

Analysis of Optimisation

Analytical Reasoning

Analytical thinking and communication

Concepts of Simultaneity and Endogeneity

Creative Thinking

Critical Thinking  
Policy Evaluation  
Problem Solving  
Sustainability  
Understanding of Uncertainty and Incomplete Information

## Transferable skills

Data-based skills  
IT skills  
Numeracy and Quantitative Skills  
Information Technology  
Mathematical, statistical, data-based research skills  
Oral Communication  
Team Work Skills  
Written Communication  
Coding Skills (Stata)

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## Study

### Study time

Type	Required
Lectures	18 sessions of 2 hours (8%)
Seminars	16 sessions of 1 hour (4%)
Other activity	52 hours (12%)
Private study	346 hours (77%)
Total	450 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.

### Other activity description

Pre-sessional Maths and Statistics lectures and classes

### 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.

### Assessment group D4

	<b>Weighting</b>	<b>Study time</b>	<b>Eligible for self-certification</b>
Test 1 Introductory Maths and Statistics Test 1	4%		No
Test 2 Introductory Maths and Statistics Test 2	6%		No
Test 3	10%		No
Group Project 3000 word project	25%		No
Centrally-timetabled examination (On-campus)	55%		No

A paper which examines the course content and ensures learning outcomes are achieved.

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- Answerbook Pink (12 page)
- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)

### Assessment group R4

	<b>Weighting</b>	<b>Study time</b>	<b>Eligible for self-certification</b>
In-person Examination	100%		No

A paper which examines the course content and ensures learning outcomes are achieved.

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- Students may use a calculator

## 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 is returned on a standardised assessment feedback cover

sheet which gives information both by tick boxes and by free comments. Students are informed how to access their feedback, either by collecting from the Postgraduate Office, from seminar tutors or within their seminar group sessions. Module leaders often provide generic feedback for the cohort in addition to the individual-specific feedback on assessment performance.

[Past exam papers for EC902](#)

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## **Availability**

### **Pre-requisites**

Technical prerequisites (besides a first degree in economics) are elementary probability and statistics, mathematics for economists and algebraic facility.

### **Post-requisite modules**

If you pass this module, you can take:

- PO93Q-15 Environmental Politics (PO93Q-15)

## **Courses**

This module is Core optional for:

- Year 1 of TECA-L1P6 Postgraduate Taught Economics
- Year 1 of TECA-L1P7 Postgraduate Taught Economics and International Financial Economics