

EC203-30 Applied Econometrics

26/27

Department

Economics

Level

Undergraduate Level 2

Module leader

Han Zhang

Credit value

30

Module duration

20 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module allows students to develop an understanding of fundamental and intermediate concepts of statistical analysis, such as regression analysis. Students will also develop the capacity to apply statistical techniques to real world problems/data sets using the statistical package STATA.

[Module web page](#)

Module aims

The module 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 economics and social scientist and also useful for a career.

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:

Review of random variables, associated distributions and moments; review of statistical estimation, estimator sampling distributions and population inference; causality and selection bias; experimental versus non-experimental data; simple linear regression (SLR) model, assumptions, interpretation and hypothesis testing; multiple linear regression (MLR) model, assumptions, interpretation and hypothesis testing; modelling non-linear relationships; dummy variables; interaction terms; the failure of MLR assumptions; tests and implications for hypothesis testing; problems of endogeneity; instrumental variables; short panel data methods; Stata.

Learning outcomes

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

- Subject Knowledge and Understanding:...demonstrate understanding of random variables, associated distributions and moments; statistical estimation, estimator sampling distributions and population inference; causality and selection bias; experimental versus non-experimental data; simple linear regression (SLR) model, assumptions, interpretation and hypothesis testing; multiple linear regression (MLR) model, assumptions, interpretation and hypothesis testing; modelling non-linear relationships; dummy variables; interaction terms; the failure of MLR assumptions; tests and implications for hypothesis testing; problems of endogeneity; instrumental variables; short panel data methods; Stata.
- Knowledge and understanding of:... (i) Economic Principles including analysis of economic decisions in microeconomics. (ii) An awareness of the empirical approach to economics and social science. (iii) Reviewing and extending fundamental statistical concepts, including causal analysis and (iv) Regression analysis, its extensions and applications.

Indicative reading list

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

[Specific reading list for the module](#)

Research element

Students will be required to undertake a 2000 word data research project.

Subject specific skills

Applied Economics
Economic information
Economic principles
Research and debate
Abstraction
Analysis of incentives
Analytical reasoning
Analytical thinking and communication
Creative thinking
Critical thinking

Policy evaluation
Problem solving
Strategic thinking

Transferable skills

Data-based skills
IT skills
Numeracy and quantitative skills
Research skills
Information technology
Math, Statistical, data-based research skills
Oral communication
Team work skills
Written communication
Coding Skills (Stata)

Study

Study time

Type	Required
Lectures	20 sessions of 2 hours (13%)
Seminars	20 sessions of 1 hour (7%)
Private study	240 hours (80%)
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.

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 D6

	Weighting	Study time	Eligible for self-certification
Test 1	10%		No
A paper which examines the course content and ensures learning outcomes are achieved.			
Test 2	10%		No
A paper which examines the course content and ensures learning outcomes are achieved.			
Empirical Assignment	10%		No
A paper which examines the course content and ensures learning outcomes are achieved.			
Centrally-timetabled examination (On-campus)	70%		No
A paper which examines the course content and ensures learning outcomes are achieved.			

- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)
- Answerbook Gold (24 page)

Assessment group R7

	Weighting	Study time	Eligible for self-certification
Examination - Resit	100%		No
A paper which examines the course content and ensures learning outcomes are achieved.			

- Answerbook Green (8 page)
- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)

Assessment group S

	Weighting	Study time	Eligible for self-certification
Assessment component			
Test Test	40%		No

- [EC106-24 Introduction to Economics](#)
- [EC107-30 Economics 1](#)
- All of
 - [EC139-15 Mathematical Techniques A](#)
 - [EC122-12 Statistical Techniques A](#)
- All of
 - [EC140-15 Mathematical Techniques B](#)
 - [EC124-12 Statistical Techniques B](#)

Post-requisite modules

If you pass this module, you can take:

- EC310-15 Topics in Development Economics 3
- EC244-15 Introduction to Applied Data Science for Economists
- EC348-15 Research in Policy Evaluation
- EC349-15 Data Science for Economists
- EC343-15 Topics in Applied Economics (3b)
- EC356-15 City, Regions and Economic Policy
- EC346-15 Research Methods in Economics
- EC331-30 Research in Applied Economics
- EC338-15 Econometrics 2: Microeconometrics
- EC318-15 Labour Economics
- EC318-15 Labour Economics
- EC313-15 The International Economy in the Twentieth Century

Anti-requisite modules

If you take this module, you cannot also take:

- EC226-30 Econometrics 1

Courses

This module is Core optional for:

- Year 2 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
 - Year 2 of L1CA 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 L1CE Economics, Psychology and Philosophy (Philosophy and Psychology Pathway)
- Year 2 of ULNA-R1L5 Undergraduate French and Economics (3 year)

- Year 2 of ULNA-R2L5 Undergraduate German and Economics (3 year)
- Year 2 of ULNA-R4LA Undergraduate Hispanic Studies and Economics (3-year)
- Year 2 of ULNA-R3L4 Undergraduate Italian and Economics (4-year)
- Year 2 of ULNA-R9LA Undergraduate Modern Languages and Economics (3-year)
- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
 - Year 2 of V7MP Philosophy, Politics and Economics (Bipartite)
 - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
 - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
 - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)

This module is Optional for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
 - Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)
 - Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)
 - Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)