EC203-30 Applied Econometrics

20/21

Department
Economics
Level
Undergraduate Level 2
Module leader
Thomas Martin
Credit value
30
Module duration
20 weeks
Assessment
40% coursework, 60% exam
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 knowledge and understanding of:(i) Economic Principles: Knowledge and understanding of core concepts and methods in macroeconomics.(ii) An awareness of the empirical approach to economics and social science.(iii) Reviewing and extending fundamental statistical concepts, including principal component analysis.(iv) Regression analysis, its extensions and applications.
- 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.

Indicative reading list

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

View reading list on Talis Aspire

Research element

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

Subject specific skills

Students will have the opportunity to develop skills in:
Analytical thinking and communication
Analytical reasoning
Critical thinking
Creative thinking
Strategic thinking
Problem-solving
Abstraction
Policy evaluation
Analysis of incentives
Concepts of Simultaneity and Endogeneity

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

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 D4

	Weighting	Study time
Test 1	12%	

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

Test 2	13%	

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

Assignment	15%	

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

Online Examination	60%	

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

- 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 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 Undergraduate 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 EC203

Availability

Pre-requisites

EC120 for Economics students, including joint degrees (excluding GL11). IB122 for WBS students. EC106 or EC107 for all other students.

EC120 = EITHER (EC121+EC122+EC125) OR (EC123+EC124+EC125)

To take this module, you must have passed:

- Any of
  - EC122-12 Statistical Techniques A

- EC106-24 Introduction to Economics
- EC107-30 Economics 1
- All of
  - EC121-12 Mathematical Techniques A
  - EC122-12 Statistical Techniques A
  - EC125-6 Computing and Data Analysis
- All of
  - EC123-12 Mathematical Techniques B
  - EC124-12 Statistical Techniques B
  - EC125-6 Computing and Data Analysis

Post-requisite modules

If you pass this module, you can take:

- EC339-15 Applied Macroeconomics
- EC343-15 Topics in Applied Economics (3b)
- EC343-15 Topics in Applied Economics (3b)
- EC310-15 Topics in Development Economics
- EC310-15 Topics in Development Economics
- EC338-15 Econometrics 2: Microeconometrics
- EC340-15 Topics in Applied Economics (3a)
- EC340-15 Topics in Applied Economics (3a)
- EC233-15 Development Economics (Microeconomics)
- EC342-15 Topics in Economic History
- EC318-15 Labour Economics
- EC318-15 Labour Economics
- EC331-30 Research in Applied Economics
- EC331-30 Research in Applied Economics

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
- UECA-3 Undergraduate Economics 3 Year Variants
  - Year 2 of L116 Economics and Industrial Organization
  - Year 2 of L116 Economics and Industrial Organization
- UPHA-V7MM Undergraduate Philosophy, Politics and Economics (with Intercalated year)
  - Year 2 of V7MS Philosophy, Politics and Economics (Bipartite with Economics Major)

(with Intercalated Year)
    - Year 2 of V7MS Philosophy, Politics and Economics (Bipartite with Economics Major) (with Intercalated Year)

This module is Optional for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
    - 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)
- Year 4 of UPHA-V7MM Undergraduate Philosophy, Politics and Economics (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:

- UECA-4 Undergraduate Economics 4 Year Variants
    - Year 2 of LM1H Economics, Politics & International Studies with Study Abroad
    - Year 2 of LM1H Economics, Politics & International Studies with Study Abroad
- UECA-LM1D Undergraduate Economics, Politics and International Studies
    - Year 2 of LM1D Economics, Politics and International Studies
    - Year 2 of LM1D 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)