EC125-6 Computing and Data Analysis

21/22

Department
Economics
Level
Undergraduate Level 1
Module leader
Jeremy Smith
Credit value
6
Module duration
30 weeks
Assessment
Multiple
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module is a research-led module, which exposes students to appropriate statistical packages to which will enable students to apply techniques learnt in first year statistics modules to real world data. You will gain an understanding of how programme within the statistical package, thereby enabling the student to present statistical data in a simple and meaningful way (tables, graphs), how to develop hypothesis tests from the data. Students will gain skills in presenting statistical data and report writing.

Module web page

Module aims

To develop undergraduate students' research skills: students will have to work independently and find things out for themselves; To develop undergraduate students' computing skills: students will be given an introduction to an advance statistical software package; To learn about data handling and data description; To learn relevant economic statistics and hypothesis testing: this module will include numerical work on microeconomic datasets, which is part of the basic training of every economist. The module forms part of the first year core cluster EC120 Quantitative Techniques, which is made up of one module in Mathematical Techniques (A (EC121) or B (EC123)), one module in Statistical Techniques (A (EC122) or B (EC124)) as well as Computing and Data

Analysis (EC125).

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:
Computing skills; Economic statistics;
Descriptive statistics;
Data awareness;
Data analysis;
Report-writing and report-presentation

Learning outcomes

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

- Use and undertake basic programming in the selected statistical software package. The teaching and learning methods that enable students to achieve this learning outcome are: Lectures will be used to provide examples of data description, students will then practice by following the online videos and exercise sheets to practice themselves. The summative assessment methods that measure the achievement of this learning outcome are: Group project.
- Undertake basic cleaning of micro datasets and preliminary data description of those datasets. The teaching and learning methods that enable students to achieve this learning outcome are: Lectures will be used to provide examples of data description, students will then practice by following the online videos and exercise sheets to practice themselves. The summative assessment methods that measure the achievement of this learning outcome are: Group project.
- Undertake basic statistical analysis and hypothesis testing of datasets. The teaching and learning methods that enable students to achieve this learning outcome are: Lectures will be used to provide examples of data description, students will then practice by following the online videos and exercise sheets to practice themselves. The summative assessment methods that measure the achievement of this learning outcome are: Group project.
- Write reports of their data description and data analysis, distilling key insights and conclusions. The teaching and learning methods that enable students to achieve this learning outcome are: Exercise sheets will give students practice at report writing. The summative assessment methods that measure the achievement of this learning outcome are: Group project.

Indicative reading list

The Stata Survival Manual - Pevalin, David J. 2009

View reading list on Talis Aspire

Subject specific skills

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

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	2 sessions of 1 hour (3%)
Online learning (independent)	10 sessions of 1 hour (17%)
Other activity	1 hour (2%)
Private study	47 hours (78%)
Total	60 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

Presentation

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

Assessment group A2

	Weighting	Study time	Eligible for self-certification
Group Project	100%		No

This work requires students to formulate a research questions and develop some hypotheses and then to collect data, analyse the data and test those hypotheses and reflect on their findings/observations in light of the research in the area being investigated.

Assessment group R1

	Weighting	Study time	Eligible for self-certification
Individual Project	100%		No

Individual project of 1500 words requiring students to formulate a research questions, develop some hypotheses and then to collect data, analyse the data and test those hypotheses and reflect on their
findings/observations in light of the research in the area being investigated.

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.

Availability

Post-requisite modules

If you pass this module, you can take:

- EC208-15 Industrial Economics 1: Market Structure
- EC208-15 Industrial Economics 1: Market Structure
- EC220-15 Mathematical Economics 1A
- EC220-15 Mathematical Economics 1A
- EC203-30 Applied Econometrics
- EC203-30 Applied Econometrics
- EC221-15 Mathematical Economics 1B
- EC221-15 Mathematical Economics 1B

Courses

This module is Core for:

- UECA-3 Undergraduate Economics 3 Year Variants
    - Year 1 of L100 Economics
    - Year 1 of L116 Economics and Industrial Organization
- Year 1 of UECA-LM1D Undergraduate Economics, Politics and International Studies
- Year 1 of UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
- Year 1 of ULNA-R1L4 Undergraduate French and Economics (4-year)
- Year 1 of ULNA-R2L4 Undergraduate German and Economics (4-year)
- Year 1 of ULNA-R4L1 Undergraduate Hispanic Studies and Economics (4-year)
- Year 1 of ULNA-R3L4 Undergraduate Italian and Economics (4-year)
- Year 1 of ULNA-R9L1 Undergraduate Modern Languages and Economics (4-year)
- Year 1 of UPHA-V7ML Undergraduate Philosophy, Politics and Economics

This module is Core optional for:

- Year 1 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development