

EC124-15 Statistical Techniques B

26/27

Department

Economics

Level

Undergraduate Level 1

Module leader

Jeremy Smith

Credit value

15

Module duration

10 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module provides students with a thorough understanding in basic principles of statistics. You will gain an understanding of probability theory, calculating moments of univariate and multivariate distributions (including some commonly used special distributions), hypothesis testing and confidence intervals. You will gain an understanding of how programme within the statistical package, thereby enabling the presentation of statistical data in a meaningful way (tables, graphs), how to develop hypothesis tests from the data.

[Module web page](#)

Module aims

To develop undergraduate students' statistical and computing skills for analysing real world data: students will be given an introduction to advance statistical software packages and will learn about data description and analysis. This module will provide the requisite quantitative background for a thorough and rigorous study of economic analysis, econometric methods and applied economics subjects, commensurate with the single honours Economics course.

To offer a sufficient challenge for students who enter Warwick with a high grade in A-level mathematics and/or statistics.

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:

Descriptive statistics; Probability; Discrete random variables; Binomial and Poisson distributions; Bivariate distributions; covariance and correlation; Continuous random variables; uniform and normal distributions; Limit theorems; Sampling and sampling distributions; Hypothesis testing and confidence intervals; Non-parametric testing.

Learning outcomes

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

- have acquired the statistical techniques necessary to study core and optional first and second year modules in economics;
- develop further your knowledge of statistical methods and statistical modelling
- have gained an awareness of data and of data handling through the use of statistical software.

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
Analytical reasoning
Analytical thinking and communication
Critical thinking
Policy evaluation
Problem solving
Sustainability

Transferable skills

Data-based skills
IT skills
Numeracy and quantitative skills

Research skills
Information technology
Math, Statistical, data-based research skills
Oral communication
Written communication
Coding Skills (Stata and R)

Study

Study time

Type	Required
Lectures	10 sessions of 2 hours (13%)
Seminars	8 sessions of 1 hour (5%)
Private study	122 hours (81%)
Total	150 hours

Private study description

The private study time will allow students time to prepare for their seminars, revise for class tests and develop their skills to become independent learners.

Through independent reading and discussion with others, students will be exposed to a variety of viewpoints, learn to choose among them, and you will be better prepared to develop your own distinctive ideas.

Costs

No further costs have been identified for this module.

Assessment

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

Assessment group D4

	Weighting	Study time	Eligible for self-certification
Participation	5%		No
In class participation			
1200 word Statistical Project	20%		No
1200 word statistical project undertaken as part of groupwork.			

	Weighting	Study time	Eligible for self-certification
Quizzes	5%		No
Five online quizzes. One aggregated mark to be given for all 5 problem sets.			
In-person Examination	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)

Assessment group R3

	Weighting	Study time	Eligible for self-certification
In-person Examination - Resit	100%		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)

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 directed 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 provide generic feedback for the cohort in addition to the individual-specific feedback on assessment performance.

[Past exam papers for EC124](#)

Availability

Pre-requisites

A level Mathematics, or equivalent.

Post-requisite modules

If you pass this module, you can take:

- EC353-15 Industrial Economics 1: Market Structure for Finalists
- EC220-15 Mathematical Economics 1A
- EC236-15 Topics in Applied Economics (2b)
- EC236-15 Topics in Applied Economics (2b)
- EC208-15 Industrial Economics 1: Market Structure
- EC226-30 Econometrics 1
- EC226-30 Econometrics 1
- 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-L1N2 Undergraduate Economics and Management

This module is Core optional for:

- Year 1 of USOA-LI00 BA Social Sciences with Data Science
- Year 1 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- UECA-LM1D Undergraduate Economics, Politics and International Studies
 - Year 1 of LM1D Economics, Politics and International Studies
 - Year 1 of LM1D Economics, Politics and International Studies
- UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
 - Year 1 of L1CA Economics, Psychology and Philosophy
 - Year 1 of L1CC Economics, Psychology and Philosophy (Behavioural Economics Pathway)
 - Year 1 of L1CD Economics, Psychology and Philosophy (Economics with Philosophy Pathway)
 - Year 1 of L1CE Economics, Psychology and Philosophy (Philosophy and Psychology Pathway)
 - Year 1 of L1CF Economics, Psychology and Philosophy (Tripartite Pathway)
- Year 1 of ULNA-R1L5 Undergraduate French and Economics (3 year)
- Year 1 of ULNA-R2L5 Undergraduate German and Economics (3 year)
- Year 1 of ULNA-R4LA Undergraduate Hispanic Studies and Economics (3-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