

EC122-15 Statistical Techniques A

26/27

Department

Economics

Level

Undergraduate Level 1

Module leader

Subham Kailthya

Credit value

15

Module duration

10 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module allows the students to become familiar with the basic concepts of statistics, including graphical analysis and simple calculations conducted on the data. It is intended to provide the students with basic data analysis skills, to provide an introduction to conducting statistical analysis using advanced statistical package. as well as develop the foundations, necessary for the second year econometrics module.

[Module web page](#)

Module aims

To provide an introduction to statistical ideas in economic and social studies, probability theory and techniques of statistical inference. To develop basic statistical and computing skills for analysing economic data: students will be introduced to advanced statistical software packages and will learn how to describe and analyse data. The module provides a foundation in statistics necessary for core and optional modules in economics for PPE and EPAIS degree courses. It does not satisfy the requirement for EC226 Econometrics 1.

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.

Descriptive Statistics; Measures of location, dispersion, and asymmetry. Probability theory; The concept of probability, events, The rules of probability. Independent events. Random variables and probability distributions. Discrete random variables: Bernoulli, binomial, Poisson. Expectations and variance. Continuous random variables: uniform, normal distributions; The distinction between risk and uncertainty. Bivariate probability distributions; joint, marginal and conditional probability distributions; covariance and correlation. Statistical Inference; Sampling and sampling distributions for means and proportions. Applications of the t, chi-square, and F distributions; Point estimation and confidence intervals; Hypothesis testing. Type I and Type II errors. Significance level and power of a test; Two variable correlation and regression. Testing for dependence between two variables.

Learning outcomes

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

- ...acquire the tools of quantitative methods necessary to study core and optional first and second year modules in economics.
- ...develop further their techniques of statistical methods and statistical modelling;
- ...generate an awareness and analysis 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

Students will have the opportunity to develop skills in:

Analytical thinking and communication

Analytical reasoning

Critical 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 management and basic computational skills

IT skills
Team-work skills
Report writing skills
Communication skills

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

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.

Assessment group D6

	Weighting	Study time	Eligible for self-certification
1200 word Statistical Project	20%		No
1200 word statistical project undertaken as part of group work.			
5 x problem sets	10%		No
Set of five multiple-choice problem sets (2% each)			
Centrally-timetabled examination (On-campus)	70%		No

Weighting	Study time	Eligible for self-certification
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A paper which examines the course content and ensures learning outcomes are achieved.

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

Assessment group R5

	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.

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

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 EC122](#)

Availability

Pre-requisites

At least a grade A in GCSE 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
- EC221-15 Mathematical Economics 1B

Courses

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
- Year 1 of UECA-LM1D Undergraduate 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)
- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
 - Year 1 of V7MR Philosophy, Politics and Economics (Bipartite with Economics Major)
 - Year 1 of V7MR Philosophy, Politics and Economics (Bipartite with Economics Major)
 - Year 1 of V7MP Philosophy, Politics and Economics (Bipartite)
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 - Year 1 of V7MP Philosophy, Politics and Economics (Bipartite)
 - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
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