

# EC122-15 Statistical Techniques A

**22/23**

**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

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## 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

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

[View reading list on Talis Aspire](#)

## 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

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## Study

### Study time

Type	Required
Lectures	10 sessions of 2 hours (13%)
Seminars	4 sessions of 1 hour (3%)
Demonstrations	4 sessions of 1 hour (3%)
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.

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## Assessment

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

### Assessment group D3

	Weighting	Study time	Eligible for self-certification
1200 word Statistical Project	20%		No
1200 word statistical project undertaken as part of group work.			
Test	10%		No
A 60 minute online test			
5 x problem sets	10%		No
Set of five multiple-choice problem sets (2% each)			

	<b>Weighting</b>	<b>Study time</b>	<b>Eligible for self-certification</b>
Online Examination	60%		No

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

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- Answerbook provided by department
- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)

## **Assessment group R2**

	<b>Weighting</b>	<b>Study time</b>	<b>Eligible for self-certification</b>
Online Examination - Resit	100%		No

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

~Platforms - AEP

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- 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 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](#)

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## **Availability**

### **Pre-requisites**

At least a grade A in GCSE Mathematics, or equivalent.

### **Post-requisite modules**

If you pass this module, you can take:

- EC242-15 Environmental and Resource Economics
- EC241-15 Experimental Economics

## **Courses**

This module is Core optional for:

- Year 1 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- Year 1 of UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
- Year 1 of UPHA-V7ML Undergraduate Philosophy, Politics and Economics

This module is Core option list A for:

- Year 1 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- Year 1 of ULNA-R1L4 Undergraduate French and Economics (4-year)

This module is Core option list B for:

- Year 1 of UECA-LM1D Undergraduate Economics, Politics and International Studies
- Year 1 of ULNA-R4L1 Undergraduate Hispanic Studies and Economics (4-year)
- Year 1 of ULNA-R9L1 Undergraduate Modern Languages and Economics (4-year)

This module is Core option list C for:

- Year 1 of ULNA-R2L4 Undergraduate German and Economics (4-year)