EC122-15 Statistical Techniques A

20/21

Department
Economics
Level
Undergraduate Level 1
Module leader
Subham Kailthya
Credit value
15
Module duration
10 weeks
Assessment
40% coursework, 60% exam
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 as well as 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. 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. Measurement of

inequality, the Lorenz curve and the Gini coefficient; 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, Gaussian ('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, ch-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:

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

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
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

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.

Assessment

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

Assessment group D2

	Weighting	Study time
1200 word Statistical Project	10%	
Test 1 50 minute online test	12%	
Test 2 50 minute online test	12%	
6 x problem sets Set of six multiple choice problem sets (1% each)	6%	
Online Examination	60%	

	Weighting	Study time

- Online examination: No Answerbook required
- 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

Availability

Pre-requisites

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

Courses

This module is Core optional for:

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

This module is Core option list A for:

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