EC123-12 Mathematical Techniques B

20/21

Department
> Economics

Level
> Undergraduate Level 1

Module leader
> Alexander Dobson

Credit value
> 12

Assessment
> 30% coursework, 70% exam

Study location
> University of Warwick main campus, Coventry

Description

Introductory description

Students will be given the opportunity to develop the requisite quantitative skills for a rigorous study of contemporary economics.

[Module web page](#)

Module aims

To develop the requisite quantitative skills for a rigorous study of contemporary economics. 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.

Prerequisite. You will be expected to have a good knowledge of A level algebra and calculus including the rules of differentiation and integration (which will not be taught).
The module will typically cover the following topics:
Calculus of functions of two or more variables; Unconstrained and constrained optimisation;

Comparative statics; Matrix algebra; Difference equations; Applications of all techniques in economics.

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 for the single honours course in Economics.
- develop further their techniques of statistical methods and statistical modelling;
- generate an awareness and analysis of data and of data handling.

Indicative reading list

Sydsaeter K, Hammond P, Strom A and Carvajal A, (2016) Essential Mathematics for Economic Analysis

Subject specific skills

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

Transferable skills

Students will develop their analytical skills.

Study

Study time

Type	Required
Lectures	10 sessions of 2 hours (71%)
Seminars	4 sessions of 1 hour (14%)
Demonstrations	4 sessions of 1 hour (14%)
Total	28 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.

Students can register for this module without taking any assessment.

Assessment group DA

	Weighting	Study time	Eligible for self-certification
Assessment component			
Test 1 50 minute class test	12%		No
Reassessment component is the same			
Assessment component			
Test 2 50 minute class test	12%		No
Reassessment component is the same			
Assessment component			
Problem Sets	6%		Yes (waive)
Reassessment component is the same			
Assessment component			

	Weighting	Study time	Eligible for self-certification
Online Examination	70%		No

- Answerbook Pink (12 page)
- Students may use a calculator

Reassessment component is the same

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.

[Past exam papers for EC123](#)

Availability

Post-requisite modules

If you pass this module, you can take:

- EC221-15 Mathematical Economics 1B
- EC221-12 Mathematical Economics 1B
- EC208-15 Industrial Economics 1: Market Structure
- EC333-15 Topics in Financial Economics: Theories and International Finance
- EC333-15 Topics in Financial Economics: Theories and International Finance
- EC220-15 Mathematical Economics 1A
- EC226-30 Econometrics 1
- EC226-30 Econometrics 1
- EC203-30 Applied Econometrics
- EC220-12 Mathematical Economics 1A

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

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 UECA-3 Undergraduate Economics 3 Year Variants
- Year 1 of UECA-LM1D Undergraduate Economics, Politics and International Studies
- Year 1 of ULNA-R1L4 Undergraduate French and Economics (4-year)
- Year 1 of UPHA-V7ML Undergraduate Philosophy, Politics and Economics

This module is Core option list B for:

- Year 1 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- Year 1 of ULNA-R4L1 Undergraduate Hispanic Studies and Economics (4-year)
- Year 1 of ULNA-R3L4 Undergraduate Italian and Economics (4-year)

This module is Core option list C for:

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

This module is Core option list D for:

- Year 1 of ULNA-R9L1 Undergraduate Modern Languages and Economics (4-year)