EC221-15 Mathematical Economics 1B

20/21

Department
> Economics

Level
> Undergraduate Level 2

Module leader
> Pablo Beker

Credit value
> 15

Module duration
> 10 weeks

Assessment
> 30% coursework, 70% exam

Study location
> University of Warwick main campus, Coventry

Description

Introductory description

EC221-15 Mathematical Economics 1B

[Module web page](#)

Module aims

To develop the notion of competitive equilibrium and the fundamental properties of competitive equilibria.

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:1. Foundations and Definitions for the Study of Walrasian Equilibrium: Commodities, Consumer preferences, Edgeworth boxes, Production2. Efficiency of Allocation and Production3. Walrasian Equilibrium in Exchange Economies4. Walrasian Equilibrium in Production Economies5. The First Welfare Theorem of Economics6. The Second Welfare Theorem of Economics

Learning outcomes

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

- By the end of the module the student should be able to acquire a sense of the normative significance of competitive markets in obtaining Pareto optimal allocations via appropriate extensions of the commodity space. The teaching and learning methods that enable students to achieve this learning outcome are: Lectures and Seminars The summative assessment methods that measure the achievement of this learning outcome are: Test and Final Exam.
- By the end of the module the student should be able to learn that a few simple, intuitive principles, formulated precisely, can go a long way in understanding the fundamental aspects of many economic problems.

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
Strategic thinking
Problem-solving
Abstraction
Policy evaluation
Analysis of incentives
Concepts of Simultaneity and Endogeneity
Analysis of optimisation
Understanding of Uncertainty and Incomplete Information

Transferable skills

Students will have the opportunity to develop:
Numeracy and quantitative skills
Written communication skills
Oral communication skills
Mathematical, statistical and data-based research skills

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	5 sessions of 1 hour (3%)
Private study	125 hours (83%)
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.

Students can register for this module without taking any assessment.

Assessment group DA

	Weighting	Study time
Test	30%	
In class 50 minute test		
Online Examination	70%	
A paper which examines the course content and ensures learning outcomes are achieved.		

- Students may use a calculator

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 EC221](#)

Availability

Pre-requisites

EC107 for GL11 students.
EC121 or EC123 and
EC122 or EC124 for other students.

To take this module, you must have passed:

- All of

  - Any of
    - [EC121-12 Mathematical Techniques A](#)
    - [EC123-12 Mathematical Techniques B](#)
  - Any of
    - [EC122-12 Statistical Techniques A](#)
    - [EC124-12 Statistical Techniques B](#)
  - [EC107-30 Economics 1](#)

Post-requisite modules

If you pass this module, you can take:

- EC331-30 Research in Applied Economics
- EC331-30 Research in Applied Economics

Courses

This module is Core optional for:

- Year 2 of UMAA-GL11 Undergraduate Mathematics and Economics
- Year 2 of UECA-GL12 Undergraduate Mathematics and Economics (with Intercalated Year)

This module is Optional for:

- TECA-L1PA Postgraduate Taught Economics (Diploma plus MSc)
  - Year 1 of L1PA Economics (Diploma plus MSc)
  - Year 1 of L1PA Economics (Diploma plus MSc)
  - Year 2 of L1PA Economics (Diploma plus MSc)
  - Year 2 of L1PA Economics (Diploma plus MSc)
- UECA-3 Undergraduate Economics 3 Year Variants
  - Year 2 of L100 Economics
  - Year 2 of L100 Economics
  - Year 2 of L100 Economics
  - Year 2 of L116 Economics and Industrial Organization
  - Year 2 of L116 Economics and Industrial Organization
- UECA-4 Undergraduate Economics 4 Year Variants
  - Year 2 of LM1H Economics, Politics & International Studies with Study Abroad
  - Year 2 of LM1H Economics, Politics & International Studies with Study Abroad
  - Year 4 of LM1H Economics, Politics & International Studies with Study Abroad
  - Year 4 of LM1H Economics, Politics & International Studies with Study Abroad
- UECA-LM1D Undergraduate Economics, Politics and International Studies
  - Year 2 of LM1D Economics, Politics and International Studies
  - Year 2 of LM1D Economics, Politics and International Studies
- Year 3 of UMAA-GL11 Undergraduate Mathematics and Economics
- Year 4 of UECA-GL12 Undergraduate Mathematics and Economics (with Intercalated Year)
- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
  - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
- UPHA-V7MM Undergraduate Philosophy, Politics and Economics (with Intercalated year)
  - Year 4 of V7MQ Philosophy, Politics and Economics (Bipartite) with Intercalated Year
  - Year 4 of V7MH Philosophy, Politics and Economics - Economics/Philosophy Bipartite (Economics Major) (with Intercalated year)
  - Year 4 of V7MI Philosophy, Politics and Economics - Philosophy/Economics Bipartite (Philosophy Major) (with Intercalated year)
  - Year 4 of V7MJ Philosophy, Politics and Economics - Philosophy/Politics Bipartite (with Intercalated year)
  - Year 4 of V7MG Philosophy, Politics and Economics - Politics/Economics Bipartite (Politics Major) (with Intercalated year)

This module is Option list B for:

- UMAA-G105 Undergraduate Master of Mathematics (with Intercalated Year)
  - Year 2 of G105 Mathematics (MMath) with Intercalated Year
  - Year 3 of G105 Mathematics (MMath) with Intercalated Year
  - Year 5 of G105 Mathematics (MMath) with Intercalated Year
- UMAA-G100 Undergraduate Mathematics (BSc)
  - Year 2 of G100 Mathematics
  - Year 2 of G100 Mathematics
  - Year 2 of G100 Mathematics

- ○ Year 3 of G100 Mathematics
- ○ Year 3 of G100 Mathematics
- ○ Year 3 of G100 Mathematics
- UMAA-G103 Undergraduate Mathematics (MMath)
  - ○ Year 2 of G100 Mathematics
  - ○ Year 2 of G103 Mathematics (MMath)
  - ○ Year 2 of G103 Mathematics (MMath)
  - ○ Year 3 of G100 Mathematics
  - ○ Year 3 of G103 Mathematics (MMath)
  - ○ Year 3 of G103 Mathematics (MMath)
  - ○ Year 4 of G103 Mathematics (MMath)
  - ○ Year 4 of G103 Mathematics (MMath)
- UMAA-G106 Undergraduate Mathematics (MMath) with Study in Europe
  - ○ Year 2 of G106 Mathematics (MMath) with Study in Europe
  - ○ Year 3 of G106 Mathematics (MMath) with Study in Europe
  - ○ Year 4 of G106 Mathematics (MMath) with Study in Europe
- Year 2 of UMAA-G1NC Undergraduate Mathematics and Business Studies
- Year 2 of UMAA-G1N2 Undergraduate Mathematics and Business Studies (with Intercalated Year)
- UMAA-G101 Undergraduate Mathematics with Intercalated Year
  - ○ Year 2 of G101 Mathematics with Intercalated Year
  - ○ Year 4 of G101 Mathematics with Intercalated Year