

ECU33082 — Mathematical Economics B

Module Information	
Module Code	ECU33082
Module Title	Mathematical Economics B
Department	Economics
Year Group	Junior Sophister
Module Personnel	Dr Vitaliia Yaremko
Academic Year	2026–27
Credit Weighting	5 ECTS
Semester	Semester 2
Contact Hours	22 hours of lectures

Module Content	
Module Description	This module covers topics in linear algebra, extending the treatment given in the Senior Freshman Mathematical and Statistical Methods. Topics include: Systems of Linear Equations and Matrices; Determinants; Eigenvalues and Eigenvectors; Vectors and Vector Spaces; Applications to Markov Chains; and the Algebra and Geometry of Ordinary Least Squares.
Module Learning Aims	To extend the treatment of linear algebra given in the Senior Freshman Mathematical and Statistical Methods, and to study applications of linear algebra in economics. The module aims to provide a more rigorous exposition of results in matrix algebra and vector space theory, equipping students with the mathematical tools needed to formulate and solve economic problems.
Learning Outcomes	On successful completion of this module, students will be able to: • Prove simple linear algebra theorems; • Formulate economic problems using linear algebra; • Apply linear algebra solution concepts to economic problems;

Module Content

	• Draw economic insights from solutions to mathematically formulated economic models; Satisfactory completion of this module will contribute to the development of the following key skills: • Understand mathematical representations of economic models; • Represent economic dynamics in mathematical form; • Use different mathematical techniques to solve economic problems; • Choose the most efficient mathematical technique for a given economic problem.
Indicative Reading / Resources	Lay, D. C., Lay, S. R., and McDonald, J. J., Linear Algebra and Its Applications, 6th (Global) edition, Boston: Pearson, 2021. Recent editions are also acceptable.

Assessment

Assessment Components	Homework 20%, Test 40%, Term Project 40%
Assessment Details	The module is assessed by homework, test, and term project. The details will be provided on Blackboard.

Additional Information

Prerequisites	EC22031 & EC22032 Mathematical and Statistical Methods
Co-requisites	None
Any other information	Module website: Blackboard