

ECU22031 — Mathematical and Statistical Methods A

Module Information	
Module Code	ECU22031
Module Title	Mathematical and Statistical Methods A
Department	Economics
Year Group	Senior Fresh
Module Personnel	Nicola Fontana
Academic Year	2026-2027
Credit Weighting	5 credits
Semester	Semester 1
Contact Hours	22 hours of lectures and 10 hours of tutorials

Module Content	
Module Description	This module will develop the calculus from the JF Maths module, with increased depth of coverage and further applications.
Module Learning Aims	The aim of the module is to consolidate and develop skills developed in JF Mathematics so as to provide a solid basis for any calculus you might meet in the Sophister years. Module content includes: • Single Variable Calculus • Matrix Algebra • Multivariate Calculus • Unconstrained and Constrained Optimization • Integration • Applications in consumer theory, producer theory, labour supply and macroeconomics.
Learning Outcomes	Having successfully completed this module, you will be able to: • Explain and apply mathematical terminology. • Formulate economic problems in the language and abstractions of mathematics (and correctly solve them!)

Module Content

	- Set-up and solve problems related to mathematical optimization. Satisfactory completion of this module will particularly contribute to the development of the following key skills: - Abstraction from concrete problems to generic concepts. - Problem-solving using quantitative methods.
Indicative Reading / Resources	Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, McGraw-Hill, 4th Edition, 2005.

Assessment

Assessment Components	Weekly problem sets (10%), Final Exam (90%)
Assessment Details	Assessment for the course is based on weekly problem sets (10%) and a 2-hour in person examination (90%). Reassessment is 100% a 2-hour in person examination.

Additional Information

Prerequisites	None
Co-requisites	ECU22032 Mathematical and Statistical Methods B
Any other information	All the relevant material will be posted on Blackboard.