

Mathematical and Statistical Methods A | ECU22031

Year	Senior Freshman
ECTS Credits	5
Contact Hours	22 hours of lectures and 10 hours of tutorials
Pre-Requisite	None
Semester	1
Module Leader and Lecturer	Professor Nicola Fontana
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Module Outline:

this module will develop the calculus from the JF Maths module, with increased depth of coverage and further applications. 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.

Topics Covered Include:

- Single Variable Calculus
- Matrix Algebra
- Multivariate Calculus
- Unconstrained and Constrained Optimization
- Integration
- Applications in consumer theory, producer theory, labour supply and macroeconomics.

Module 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!)
- 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.

Assessment:

Weekly problem sets worth 20% of the overall grade, a take home test worth 30% of the overall grade, a final exam worth 50% of the overall grade.

Recommended Reading List:

Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, McGraw-Hill, 4th Edition, 2005.