Mathematics 2

Module Code: ECO00027I  Credits: 10  Year: 2  Terms: 1-2

Contact Hours: 10 Lectures, 3 Practicals and 1 seminar in Autumn with the rest in Spring (25 contact hours)

Module Organiser: Professor Z Yang

Overview:
In this module we cover the essentials of linear algebra such as solving any number of linear equations with any number of variables, and basic topics on ordinary differential equations, and optimisation theory and method of several variables with or without constraints. We will also study the famous simplex method which is often used to solve many economic decision problems formulated as linear programming problem. We will further show how to solve several important practical economic problems such as Shapley-Scarf housing market problem, stable marriage matching problem, optimal portfolio selection problem, and determination of market equilibrium prices and allocations of exchange economies.

Aims:
- The aim of this module is to introduce students to the basic linear algebra, elementary differential equations, optimisation of several variables with or without constraints so that they will be well equipped with several most frequently used quantitative methods in Economics

Learning outcomes:
On completing the module a student will have:

- Acquired sufficient mathematical techniques and fluency that are essential to analyse and solve a variety of Economic problems in their degree studies and beyond.

Assessment:
There will be a 2-hour unseen examination in the Summer Term.

Main References:
TBC