ECON0010: MATHEMATICS FOR ECONOMICS

Course Outline, 2020-2021 (Term 1)

ECON0006: INTRODUCTION TO MATHEMATICS FOR ECONOMICS

Course Outline, 2020-2021

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Class Teachers See Moodle page

Aims
To provide students with the mathematics to take them from GCE A level standard to that required for the remainder of the economics degree.

Objectives
At the end of the first term of the course, students should:
(i) understand elementary matrix algebra in a form suitable for application to econometrics and optimisation;
(ii) understand calculus of several variables, including optimisation of functions of several variables, and be able to apply their knowledge to simple economic problems;
(iii) understand simple first order differential and difference equations and be able to apply their knowledge to simple problems in economic dynamics.

Outline Syllabus
Vectors, linear dependence and independence. Matrix algebra. Systems of linear equations, Gaussian elimination, reduction to echelon form. Inverse of a matrix. Determinants. Quadratic forms.

Calculus of several variables: differentiation, constrained optimisation, applications to consumer theory and production theory. First-order differential and difference equations.

Required coursework
Two assignments to be submitted for marking.

ECON 0010 Assessment
50% one hour online remote examination in summer
25% one hour multiple choice examination in January
25% one hour multiple choice examination in April

ECON0006 Assessment
50% one hour online remote examination in summer
50% one hour multiple choice examination in January

Recommended reading
Malcolm Pemberton and Nicholas Rau, **Mathematics for Economists: An introductory textbook, Fourth Edition**, Manchester University Press, 2015

Arrangements for synchronous and asynchronous sessions
The lectures will be given live each week and there will also be weekly demonstrations. The demonstrations will consist largely of going through exercises from Pemberton and Rau.

ECON0010: Assignments to be given in

1. To be given on Friday 6 November 2020

2019 ECON0010 examination, questions 1,2,9

2. To be given in on Friday 11 December 2020

2019 ECON0010 examination, questions 3,4,10,11

ECON0006: Assignments to be given in

1. To be given on Friday 6 November 2020

2019 ECON0006 examination, questions 1,2,3,6

2. To be given in on Friday 11 December 2020

2019 ECON0006 examination, questions 4,5,7,8,9