Linnæus University

Jnr: UGA 2013/338-3.1.2

Course syllabus

School of Business and Economics
Department of Economics and Statistics

1NA010 Matematisk ekonomi II, 7,5 högskolepoäng
Mathematical Economics II, 7.5 credits

Main field of study
Economics

Subject Group
Economics

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved by School of Business and Economics 2013-10-15
The course syllabus is valid from autumn semester 2014

Prerequisites
Economics 30 credits, including course credits in basic micro- and macroeconomics, and Statistics 15 credits or course credits in time series analysis and regression analysis, and English B, or equivalent

Objectives

After finished course, the student is expected to able to:

- simplify linear and non-linear functions and interpret economic information from such relations
- solve linear and non-linear equations and to solve systems of equations
- apply the rules of derivation to analyse economic phenomena such as profit maximisation and cost minimisation
- solve optimisation problem for continuous functions in one and several dimensions with and without restrictions
- determine the degree of homogeneity of a function
- determine if, and when, a function is convex or concave
- using integral calculus to determine economic areas such as consumer and producer surplus
- give an overview of matrixes and determinants and be able to perform simpler computations

Content
The course contains:

- linear and non-linear equations
- algebra
- equation solving
- power functions
- exponential- and logarithmic functions
- economic functions
- rules of derivation
- elasticities
- one variable optimization
- homogeneity
- convexity and concavity
- several variable optimisation
- optimisation with restrictions
- the lagrange multiplier and its economic interpretation
- compute economic areas with integrals
- solving integrals with partial integration
- matrixes
- matrix algebra
- solving systems of equations with matrix algebra
- solving systems of equations with the use of Cramers rule

Type of Instruction
Lectures and group exercises.

Examination
The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
The assessment of the performance of the students is based on written examination and hand-ins.

Results are graded using one of the terms Passed with distinction, Pass or Fail, and A-F according to the ECTS scale.
For the grade pass, the objectives have to be reached; the grade is based upon the degree to which the objectives are met. The weighing of the grades to the course grade is following the principles in the document "Principer för betygsrapportering dnr ELNU 2011/160".

Students who do not achieve a satisfactory result in the examinations are permitted to make a second attempt approximately 5-8 weeks after the normal examination date. The student will have a minimum of five occasions for written exams in relation to the syllabus to which the student was accepted. Usually 3 occasions per academic year.

Course Evaluation
A written course evaluation is carried out and compiled in a report, which is archived at the faculty. The results and possible measures taken are communicated by the course coordinator and presented to the students the next time the course is given, or in another way deemed suitable by the course coordinator. Other types of course evaluations, for example regular evaluations throughout the course or discussions with students, will be included and encouraged with the aim of ensuring continuous quality development.

Required Reading and Additional Study Material
Required reading
Sydsaeter, K. & Hammond, P. *Essential Mathematics for Economic Analysis*
Prentice Hall. Latest edition. 508 pages.