Linnæus University

Jnr: 2021/3734-3.1.2.2

Course syllabus

School of Business and Economics
Department of Economics and Statistics

4NA060 Avancerad Matematisk ekonomi, 7,5 högskolepoäng
Advanced mathematical economics, 7.5 credits

Main field of study
Economics

Subject Group
Economics

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved 2018-12-13
Revised 2021-10-18 by School of Business and Economics. Revision of prerequisites and update of standard texts.
The course syllabus is valid from autumn semester 2022

Prerequisites
General entry requirements for secondcycle studies and specific entry requirements:

- bachelor Degree in Economics, or in another social science or natural sciences or the equivalent
- a minimum of 90 credits in Economics,
- a minimum of 15 credits in Statistics,
- English 6, or the equivalent

alternatively,

Students applying for the course within the Business Administration and Economics Programme need to have:
90 credits Economics including following courses:

- Mathematical Economics II 7.5 credits,
- Econometrics 7.5 credits,
- Intermediate Microeconomics 7.5 credits,
- Intermediate Macroeconomics 7.5 credits,
- Labour Economics 7.5 credits,
- Economics of Migration 7.5 credits,
- Economics, Degree Project (Bachelor) 15 credits,
- Business Statistics I 7.5 credits,
- Business Statistics II 7.5 credits,
- English 6, or the equivalent.

Objectives
After completing this course the student should be able to:

- use the mathematical tools covered in the course in an economics context
- apply the mathematical tools to relevant economic and econometric applications
- use mathematical notation consistently to formulate economic problems

Content
The course contains:

- optimization of single variable and several variable problems
- elementary set theory (set inclusion, union, intersection, convex and concave sets)
- constrained optimization with equality and inequality (Lagrange and Kuhn-Tucker)
- convergence of series and limits (simple cases)
- integration
- linear algebra (vector, matrixes and determinant operations)
- differential equations (single variable)

Type of Instruction
The teaching consists of lectures and exercises.

Examination
The course is assessed with the grades A, B, C, D, E, Fx or F.
Examination consists of an individual written exam (7.5 credits).

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail. Grading criteria for the A–F scale are communicated in writing to the student by the start of the course at the latest, as well as how the weighting and weighting of grades on individual examining elements to the final course grade takes place. The basis for the student's grade is determined by the student's fulfillment of the objectives.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University. An examiner can, in exceptional cases, decide that a student who is close to the level for a passing grade may carry out supplementary assignments in order to reach the passing grade.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way

Course Evaluation
During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Required Reading and Additional Study Material

Required reading
Sydsæter, K. & Hammond, P. *Essential mathematics for economic analysis*. Prentice Hall. Latest edition. About 810 pages.

Sydsæter, K., Hammond, P., Seierstad, A. and Stom, A. *Further Mathematics for Economic Analysis*. Prentice Hall. Latest edition. About 620 pages.

Economic Analysis, Prentice Hall. Latest edition. About 620 pages.

Reference literature
Scientific Articles. About 100 pages.