Course syllabus

School of Business and Economics

Department of Economics and Statistics

4NA060 Avancerad Matematisk ekonomi, 7,5 högskolepoäng
4NA060 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 2023-10-09 by School of Business and Economics. Revision of prerequisites, updates of standard texts and clarification of objectives and examination.
The course syllabus is valid from autumn semester 2024

Prerequisites
General entry requirements for second-cycle studies and a minimum of 30 credits in Economics, Statistics, Finance, Mathematics, or the equivalent. English 6, or the equivalent.

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

- apply mathematical terminology in economics settings
- 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.

The course is examined through an individual written examination (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.

Resit examination is offered in accordance with Linnaeus University's Local regulations for courses and examination at the first- and second-cycle levels. 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.

In the event that a student with a disability is entitled to special study support, the examiner will decide on adapted or alternative examination arrangements.

Course Evaluation
A course evaluation should be conducted during the course or in connection with its conclusion. The results and analysis of the completed course evaluation should be promptly communicated to students who have completed the course. Students participating in the next course instance should be informed of the results of the previous course evaluation and any improvements that have been made, no later than at the start of the course.

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.

Reference literature
Scientific Articles. About 100 pages.