



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

Economics

Level

Second cycle

Progression

A1N

Date of Ratification

Approved 2018-12-13.
Revised 2025-09-29. Prerequisites.

The course syllabus is valid from autumn semester 2026.

Prerequisites

Specific entry requirements:
1NA080 Essential mathematics for business and economics 7.5 credits or alternatively a basic course in mathematics, as well as 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 covers the following areas and concepts:

- 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 or F.

The course is examined through an individual written examination 5.5 credits and a written group assignment 2 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.

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.

Required Reading and Additional Study Material

Required reading

Sydsæter, K. & Hammond, P. & Strom, A. & Carvajal, A. *Essential mathematics for economic analysis*. Pearson. 6th edition. About 950 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.