



School of Economics and Management

NEKG33, Economics: Mathematical Methods for Economics, 7.5 credits

*Nationalekonomi: Matematiska metoder för nationalekonomi, 7,5
högskolepoäng*
First Cycle / Grundnivå

Details of approval

The syllabus is an old version, approved by The Board of the Department of Economics on 2012-06-05 and was last revised on 2019-11-05. The revised syllabus applied from 2019-11-05, spring semester 2020.

General Information

This is a single subject intermediate course that can be a part of all specialisations within economics. The course is also an obligatory sub-course within NEKG11 'Economics: Level 2'. The course is optional within a number of undergraduate programmes at Lund University.

Language of instruction: Swedish

In some semesters the course can be taught in English, see the appropriate application catalogue.

Main field of studies

Economics

Depth of study relative to the degree requirements

G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

Students shall understand:

- simple rules of algebra,
- the definition of the derivative and its geometrical interpretation,
- basic rules of differentiation,
- the general concept of a function and the elementary functions,

Competence and skills

Students shall have the ability to independently:

- characterise, solve, and interpret simple unconstrained and constrained optimisation problems containing single or multiple choice variables,
- perform basic matrix and vector operations,
- solve linear systems of equations,
- present and discuss their mathematical knowledge with various target groups.

Judgement and approach

Students shall develop an ability to pursue further studies in economics. They will be able to use their mathematical knowledge to assimilate economic theory and methods.

Course content

The course consists of basic mathematical methods that lay a foundation for further studies and applied work in economics. These tools are necessary for the formulation, analysis and understanding of economic models and issues.

The following will be treated in the course. Elementary algebra, sets, equations, limits, continuity, the derivative, the concept of a function, the elementary functions, the extreme-value theorem, extreme values of a function, partial derivatives, constrained optimisation, the method of Lagrange multipliers, vectors, linear systems of equations and integrals.

Course design

1. Teaching: Tuition consists of lectures, supervised exercises and computer exercises.

Assessment

1. Examination: Examination consists of a written exam that takes place at the end of the course plus home assignments during the course. There will be further opportunities for examination close to this date. The home assignments will be graded, and the marks carried forward to examinations taken the same term.
2. Limitations on the number of examination opportunities: –

The University views plagiarism very seriously, and will take disciplinary action against students for any kind of attempted malpractice in connection with examinations and assessments. Plagiarism is considered to be a very serious academic offence. The penalty that may be imposed for this, and other unfair practices in examinations or assessments, includes suspension from the University for a specified period.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with

a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, E, D, C, B, A.

1. Grading: Grade (Definition), Points or percentage out of maximum points, Characteristic

A (Excellent), 85–100, A distinguished result that is excellent with regard to theoretical depth, practical relevance, analytical ability and independent thought.

B (Very good), 75–84, A very good result with regard to theoretical depth, practical relevance, analytical ability and independent thought.

C (Good), 65–74, The result is of a good standard with regard to theoretical depth, practical relevance, analytical ability and independent thought.

D (Satisfactory), 55–64, The result is of a satisfactory standard with regard to theoretical depth, practical relevance, analytical ability and independent thought.

E (Sufficient), 50–54, The result satisfies the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought, but not more.

U (Fail), 0–49, The result does not meet the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought. Students have to receive a grade of E or higher in order to pass a course.

2. Weighting grades from different parts of the course: –

3. Grading scales for different parts of the course: –

Entry requirements

At least 20 ECTS-credits from the introductory course in economics, of which at least 7.5 ECTS-credits in microeconomics are needed for admission till all intermediate courses in economics.

Further information

1. Transitional regulations: This course replaces NEKG32 "Mathematical and Statistical Methods for Economics".

2. Limitations in the period of validity: –

3. Limitations: This course may not be included in the same degree as the sub-course in mathematical and statistical methods for economics within NEKA21 "Economics: Level 2", the sub-course in mathematical and statistical methods for economics within NEK231 "Economics: General Course", the sub-course in mathematical and statistical methods for economics within NEKG11 "Economics: Level 2", the course NEKB42 "Mathematical and Statistical Methods for Economics", NEK619 "Mathematical and Statistical Methods for Economics", NEKB22 "Mathematical and Statistical methods for Economics" or NEKG32 "Mathematical and Statistical methods for Economics".

4. Similar courses: This course has the same contents as the sub-course in mathematical and statistical methods for economics within NEKG11 "Economics: Level 2".

5. Limitations in renewed examination: –

Subcourses in NEKG33, Economics: Mathematical Methods for Economics

Applies from V13

1201 Mathematical Methods for Economics, 7,5 hp
Grading scale: Fail, E, D, C, B, A