Mathematical Methods in Economics

Matematiska metoder i nationalekonomi
7.5 credits

Single subject and programme course

770G17

Valid from: 2026 Autumn semester

Determined by	**Main field of study**	
Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Economics	
Date determined	**Course level**	**Progressive specialisation**
2019-12-03	First cycle	G1F
Revised by	**Disciplinary domain**	
Chairman of the Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Social sciences	
Revision date	**Subject group**	
2021-12-14; 2026-04-21	Economics	
Offered first time	**Offered for the last time**	
Autumn semester 2020		
Department	**Replaced by**	
Institutionen för ekonomisk och industriell utveckling		

Course offered for

- Bachelor´s Programme in Political Science and Economics
- Business and Economics Programme - International - French
- Business and Economics Programme - International - Spanish
- Business and Economics Programme - International - German
- Business and Economics Programme - International - English
- Business and Economics Programme
- Bachelor's Programme in Political Science and Economics
- Master's Programme in Economics

Entry requirements

- Economics, basic course, 30 ECTS credits (including Microeconomics and Macroeconomics with at least 7,5 ECTS credit each) with at least 15 ECTS credits passed.

Intended learning outcomes

On completion of the course, the student should be able to
- account for the mathematical methods that are used in the economics to solve equilibrium - and optimization problem
- solve mathematical problems of the kind that is covered in the course.

Course content

The course contains the following parts:
- Static equilibrium analysis; basic linear algebra
- Comparative static analysis; derivatives and differentials for functions with an and several variables
- Optimisation problems; extreme values for functions with one and multiple variables, optimisation under constraints
- Dynamic analysis; integrals, basic differential and difference equations

Teaching and working methods

The teaching is given as full-time studies and comprises lectures and teacher-supervised exercises. Independent studies are a necessary complement to the teaching. Language of instruction: Swedish and/or English.

Examination

Final written exam, grading scale UV.

Detailed information can be found in the study guide.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

Three-grade scale, U, G, VG

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.