MATM27, Mathematics: Ordinary Differential Equations 2, 7.5 credits

Matematik: Ordinära differentialekvationer 2, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2014-01-15 to be valid from 2014-01-15, autumn semester 2014.

General Information

Language of instruction: English

Main field of studies	Depth of study relative to the degree requirements
Mathematics	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding
On completion of the course, the student should

- be able to give an account of basic concepts and methods within the theory of ordinary differential equations,
- be able to describe in depth the theory of ordinary differential equations.

Competence and skills
On completion of the course, the student should have developed the ability to communicate mathematics in speech and writing.

Judgement and approach
On completion of the course, the student should be able to describe the theory of ordinary differential equations and apply it within other areas of mathematics as well as other sciences.

Course content

Existence, uniqueness and approximation of solutions of initial-value problems. Autonomous systems. Phase portraits. Stability theory. Periodic solutions. Boundary value problems. Sturm-Liouville theory and eigenfunction expansions.

Course design

The teaching consists of lectures and seminars. Compulsory assignments may occur during the course.

Assessment

The examination consists of a written examination followed by an oral examination. The oral examination may only be taken by those students who passed the written examination. Students who fail the regular examination are offered a resit examination shortly thereafter.

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

Grades

Marking scale: Fail, Pass, Pass with distinction.
The final grade is based on the joint results of the two examinations.

Entry requirements

For admission to the course, at least 67.5 credits in pure mathematics are required, including the course MATC12, Ordinary Differential Equations 1, 7.5 credits, or the equivalent.

Subcourses in MATM27, Mathematics: Ordinary Differential Equations 2

Applies from V14

1401   Examination, 7,5 hp
        Grading scale: Fail, Pass, Pass with distinction