Course syllabus

**Fördjupningskurs i valt område av matematiken**
**Advanced Course in a Selected Area of Mathematics**

**FMAN90, 7.5 credits, A (Second Cycle)**

Valid for: 2020/21  
Decided by: PLED F/Pi  
Date of Decision: 2020-04-01

### General Information

Elective for: D4, F4, Pi4  
Language of instruction: The course will be given in English on demand

### Aim

The aim of the course is to give the engineering student who is interested in mathematics the opportunity to extend his or her knowledge into a branch of mathematics relevant for applications or modern research.

### Learning outcomes

**Knowledge and understanding**  
For a passing grade the student must

- be able to demonstrate an in-depth understanding of a specific field within mathematics.

**Competences and skills**  
For a passing grade the student must

- be able to deal independently with problems within the field concerned
- be able to use new tools from the course to efficiently solve problems from previous courses
- both orally and in writing be able to communicate advanced mathematical arguments within the scope of the course.
Judgement and approach
For a passing grade the student must

- be able to describe concepts and tools from previous courses in mathematics in a more mature manner than previously, and from new perspectives
- be able to demonstrate the ability to tackle new issues related to the course.

Contents
Varies, depending on the subject. The theme for the course during the spring semester year N, and information about required prior knowledge, will be published on the course web page in March year N-1.

Examples of possible themes are Advanced Complex Analysis (continuation of the course Analytic functions), Geometry and computer algebra, Integral equations, Spectral theory and Graph theory.

Examination details
Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)
Assessment: Written and/or oral examination as decided by the examiner. Assignments may occur. Information about this will be available when the students at LTH must decide whether to take the course.

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.

Admission
Assumed prior knowledge: Varies, depending on the subject.
The number of participants is limited to: No
The course might be cancelled: If the number of applicants is less than 5.

Reading list
- The choice of course literature depends on which theme is treated. Information about which literature will be used during the upcoming spring semester will be published on http://www.maths.lth.se/course/advmathcourse/ by the start of the academic year.

Contact and other information
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Course administrator: Studeranexpeditionen, expedition@math.lth.se
Course homepage: http://www.maths.lth.se/course/advmathcourse/