



Course syllabus

Faculty of Technology
Department of Mathematics

4MA413 Topologi, 7,5 högskolepoäng
Topology, 7.5 credits

Main field of study

Mathematics

Subject Group

Mathematics

Level of classification

Second Level

Progression

A1N

Date of Ratification

Approved by Faculty of Technology 2014-10-03
The course syllabus is valid from autumn semester 2015

Prerequisites

60 credits in mathematics including 1MA453 Vector analysis 7.5 credits or equivalent.

Objectives

The student should be able to:

- operate with sets
- operate with various topologies
- apply topology for problem solving
- operate with definitions and central notions of the course in coupling with study of various problems
- operate, communicate and present argumentation using mathematical forms of representation
- show applications of topology
- give various examples of topological spaces, in particular compact topological spaces
- work with continuous maps in topological spaces
- use compact topological spaces in applications.

Content

The course content is:

- introduction to set theory
- topological spaces
- continuous functions in topological spaces
- compact topological spaces

- applications of topological spaces.

Type of Instruction

Lectures and seminars. Compulsory assignments may be given during the course.

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

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 (i.e. received the grade F).

The student's knowledge is assessed in the form of oral and/or written examination.

Course Evaluation

A course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

Credit Overlap

This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: 4MA113

Topology, 7.5 credits

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

Required reading

Fomin S V och Kolmogorov A N *Introductory Real Analysis*,
Dover Publication, INC, New York, 1975. 403 pages.