Department of Mathematics
(incl. Math. Statistics)

Stockholm University

Syllabus

for course at advanced level

Representation Theory for Finite Groups
Representationsteori för ändliga grupper

7.5 Higher Education Credits
7.5 ECTS credits

Course code:	MM8021
Valid from:	Autumn 2011
Date of approval:	2011-05-16
Department	Department of Mathematics (incl. Math. Statistics)
Main field:	Mathematics/Applied Mathematics
Specialisation:	A1F - Second cycle, has second-cycle course/s as entry requirements

Decision

This syllabus was approved by the Board of the Faculty of Science at Stockholm University on 16 May 2011.

Prerequisites and special admittance requirements

Admission to the course requires knowledge equivalent to 90 credits in mathematics, where Algebra III, 7.5 credits (MM7003), or equivalent, is included. English B/English 6 or equivalent.

Course structure

Examination code	Name	Higher Education Credits
HELA	Representation Theory for Finite Groups	7.5

Course content

Group theory: permutation groups, the Sylow theorems.
Representation theory: group representations, characters. Products of characters, induced representations and characters. Introduction to compact groups. Some applications, for instance invariant theory.

Learning outcomes

After the course, students are expected to be able to:
* account for and prove basic theorems in the theory of representations of finite groups

Education

Instruction consists of lectures and exercises.

Forms of examination

a. The course is examined as follows: Knowledge assessment takes the form of submitted work and oral examination.

b. Grades are assigned according to a seven-point goal-related grading scale:

A = Excellent
B = Very good
C = Good
D = Satisfactory
E = Sufficient

Fx = Fail (more work required before credit can be awarded)
F = Total fail

c. The grading criteria will be distributed at the beginning of the course.

d. To be awarded a pass, the minimum grade E is required.

e. Students who fail an ordinary examination are entitled to sit at least four additional examinations as long as the course is offered. Examinations also include other obligatory elements of the course. Students who have passed an examination may not resit it in order to achieve a higher grade. Students who have failed on two occasions are entitled to request the appointment of a different examiner for the next examination. Any such request must be made to the departmental board.

f. Students awarded the grade Fx are given the opportunity to improve their grade to E. The examiner decides the supplementary assignments to be performed and the pass mark criteria. The supplementary assignments will take place before the next examination session.

Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two year period after course instruction has ended. Requests must be made to the departmental board.

Limitations

The course may not be included in a degree together with the course "Representation Theory for Finite and Compact Groups" (MA4190) or "Representation Theory for Finite and Compact Groups" (MM8006).

Misc

The course is a component of the Master's programs in Mathematics and in Applied Mathematics, but it can also be taken as an individual course.

Required reading

Course literature is decided by the departmental board and described thereafter in an appendix to the course plan.