



# HÖGSKOLAN I GÄVLE

## Algebra C 7.5 cr *Algebra C 7,5 hp*

Set by Board of Mathematics, Natural and Computer Sciences

**Version**

**Set at**

**Valid from**

3/4/09

**VT2009**

<b>Level</b>	G1F
<b>Education level</b>	First cycle
<b>Course identifier</b>	MA001C
<b>Credits</b>	7.5 cr
<b>Main field of study</b>	Mathematics
<b>Subject group</b>	Mathematics
<b>Disciplinary domain</b>	Natural sciences 100.0 %

**Learning outcomes**

The course intends to give the students the basics of abstract algebra.  
On completion of the course, the student should be able to independently

- 1) account for important definitions in abstract algebra and account for important theorems and proofs
- 2) account for and illustrate the use of abstract algebra within other fields such as number theory, combinatorics and analysis
- 3) solve proof-oriented problems in abstract algebra

**Course content**

Groups  
Lagrange's theorem, the theorems of Fermat and Euler  
Homomorphism and isomorphism  
Rings, solids  
Constructions with ruler and compasses  
Something about Galois theory

**Teaching**

Lectures and exercises.

**Prerequisites**

Multivariate Calculus, 7.5 HE credits, or Advanced Linear Algebra, 7.5 HE credits, or equivalent.

<b>Examination</b>	Written examination or written assignments (Expected learning outcomes 1-3)		
<b>Grade</b>	A, B, C, D, E, Fx, F		
<b>Other regulations</b>	Grading criteria are provided by the course coordinator or examiner at the beginning of the course.		
<b>Sustainable environment</b>	Content with sustainable development is not relevant to this course.		
<b>Module</b>	0010 Written examination	7.5 cr	Grade: AF