



## HÖGSKOLAN I GÄVLE

### Geometry and Statistics from an Educational Perspective, 4-6 7.5 cr

*Geometri och statistik ur ett didaktiskt perspektiv, inriktning 4-6 7,5 hp*

Set by Faculty of Engineering and Sustainable Development

**Version**

**Set at**

**Valid from**

6/3/20

**HT2021**

<b>Level</b>	G1F
<b>Education level</b>	First cycle
<b>Course identifier</b>	MAG345
<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** After completion of the course, the student shall be able to

Knowledge and understanding

1. give an account of the meaning of concepts in geometry, probability theory and statistics and didactical aspects of these
2. show such knowledge of geometry, probability theory and statistics as needed in professional practice

Competence and skills

3. solve mathematical problems in geometry, probability theory and statistics
4. Use pedagogical tools to illustrate mathematical concepts and relations, and solve mathematical problems
5. Apply didactical methods to explain basic mathematical concepts and relations in teaching
6. Apply own analyses of curricular and teaching documents in order to plan teaching
7. Interpret statistical material and perform simple descriptive analyses of quantitative data

Judgement and approach

	8. take into account ethical aspects of the use of statistics in professional and everyday life.
<b>Course content</b>	<p>Geometry: Euclidean geometry from a historical perspective; measuring lengths, areas and volumes; geometric patterns</p> <p>Statistics: descriptive statistics, different representations of data, interpretation of statistical material</p> <p>Basic concepts in probability theory and combinatorics</p> <p>Use and analysis of analog and digital tools</p> <p>Analysis of curricula, teaching materials and national tests</p>
<b>Teaching</b>	Lectures, problem solving sessions, lab work, seminars, and problem demonstrations
<b>Prerequisites</b>	Prerequisites in English is missing
<b>Examination</b>	<p>Written examination and project exercises</p> <p>Module 0010 Written examination 4,5 credits, assesses teaching goals 1-5, 7, grades A-F</p> <p>Module 0020 Project exercises 3 credits, assesses teaching goals 2 and 4-8, grades Pass with distinction, Pass, Fail</p>
<b>Grade</b>	A, B, C, D, E, Fx, F
<b>Other regulations</b>	Degree Criteria for final grade will be given by course responsible or examiner latest at the beginning of the course.
<b>Sustainable environment</b>	A minor part of the course content deals with sustainable development.
<b>Module</b>	
	0010 Written examination 4.5 cr Grade: AF
	0020 Project exercises 3 cr Grade: UV