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Faculty of Health, Science and Technology

## Study Plan

### Mathematics Programme

<b>Programme Code</b>	NGMAA
<b>Programme Title</b>	Mathematics Programme Matematikprogrammet
<b>Credits:</b>	180
<b>Approval</b>	The programme Study Plan was approved by the Faculty Board of Health, Science and Technology on 1 February 2018 and is valid from the autumn semester of 2018 at Karlstad University, Rev. 1 Dec. 2022.
<b>Language of Instruction</b>	Swedish and English
<b>Degree Level</b>	Bachelor's
<b>Degree Type</b>	General degree
<b>Prerequisites</b>	General admission requirements and Mathematics 4 /Mathematics E  Optional courses may have different requirements

#### Introduction

The Mathematics programme offers foundational knowledge and skills in mathematics and leads to a Bachelor's degree with a Major in Mathematics. A Bachelor's degree in mathematics comprises 180 ECTS credits and is required to include 90 ECTS credits in mathematics with progressive specialisation and an independent degree project in mathematics of 15 ECTS credits.

#### Objectives

The *Higher Education Ordinance, System of Qualifications (SFS 2006:1053)* specifies the requirements for a specific qualification. The requirements for a Bachelor's degree (with an emphasis on Mathematics):

### *Knowledge and understanding*

For a Bachelor's degree students must

- demonstrate knowledge and understanding in mathematics, including knowledge of the scientific basis of the field, knowledge of appropriate methods in the field, deeper knowledge of some part of the field, together with insight into current research issues.

### *Competence and skills*

For a Bachelor's degree students must

- demonstrate ability to seek, collect, assess and critically interpret relevant information to a problem and critically discuss phenomena, issues and situations,
- demonstrate ability to independently identify, formulate and solve problems and to carry out tasks within specified time limits,
- demonstrate ability to present and discuss information, problems and solutions in dialogue with different groups, orally and in writing, and
- demonstrate the skills required to work independently in the area of the main field of study.

### *Judgement and approach*

For a Bachelor's degree students must

- demonstrate ability to make assessments in mathematics, taking into account relevant scientific, social and ethical aspects,
- demonstrate insight into the role of science in society and people's responsibility for how it is used, and
- demonstrate ability to identify their need of further knowledge and to take responsibility for developing their competence.

## **Programme Structure**

The programme comprises six terms and the degree project is undertaken in the last term. In the first three terms, students mainly study mandatory mathematics courses with some options in terms 2 and 3. In the following terms, the situation is reversed and there are many options but also some focus on mathematics in the form of eligible specialisation courses and degree project. Optional courses can be taken in any subject or can be broadening courses in mathematics. Students are recommended to choose term 5 for any plans to study abroad.

## **Programme Curriculum**

### Mandatory courses

Courses in mathematics, 60 ECTS cr

Courses in programming technique, 7,5 ECTS cr

Degree project, 15 ECTS cr

### Eligible courses

Courses in mathematics, 15 ECTS cr

### Optional courses

Students are free to choose any course if they meet any additional prerequisites. Students can choose further courses in mathematics or courses in other fields, 82.5 ECTS cr.

### **Term 1**

*Mandatory, 30 ECTS cr*  
Mathematics, 22,5 ECTS cr  
Programming technique, 7,5 ECTS cr

### **Term 2**

*Mandatory course, 15 ECTS cr*  
Mathematics, 15 ECTS cr

*Optional courses, 15 ECTS cr*

### **Term 3**

*Mandatory courses, 22,5 ECTS cr*  
Mathematics, 22,5 ECTS cr

*Optional courses, 7,5 ECTS cr*

### **Term 4**

*Eligible courses, 15 ECTS cr*  
Mathematics, 15 ECTS cr

*Optional courses, 15 ECTS cr*

### **Term 5**

*Optional courses, 30 ECTS cr*

### **Term 6**

*Mandatory courses, 15 ECTS cr*  
Degree project, 15 ECTS cr

*Optional courses, 15 ECTS cr*

### **Degree Title**

Degree of Bachelor of Science, Major: Mathematics  
Filosofie kandidatexamen, Huvudområde: Matematik

### **Credit Transfer**

Students have the right to transfer credits from previously completed university courses in Sweden or abroad, subject to approval according to the current regulations.

### **Additional information**

Students are not allowed to start with their Degree projects until they have completed courses totaling 120 ECTS cr with at least 75 ECTS cr in Mathematics, including at least 15 ECTS cr at the 61-90 credit level, or completed courses in Mathematics totaling at least 105 ECTS cr, including at least 15 ECTS cr at the 61-90 credit level.

The local regulations for first and second cycle education at Karlstad University stipulate the obligations and rights of students and staff.