



## Programme syllabus

Faculty Board of Science and Engineering  
School of Computer Science, Physics and Mathematics

Tekniskt basår, 40 Veckor

Engineering Studies, Foundation year, 40 Weeks

### **Level**

Pre-university level

### **Establishment of Programme**

Established by Faculty of Science and Engineering 2009-04-17

### **Date of Ratification**

Approved by Committee for First and Second Cycle under the Faculty Board of Science and Engineering 2009-09-15

The programme syllabus is valid from autumn semester 2012

Revised 2012-02-23

### **Prerequisites**

NO VALUE DEFINED

## Description of Programme

The foundation year in Engineering Studies is a programme offering foundation courses in accordance with the regulations concerning pre-university and pre-university college courses that provide eligibility to study at university and university college level, SFS 1992:819. Linnæus University's foundation courses provide competence equivalent to upper secondary school level. Guaranteed places are offered to a number of natural science and engineering programmes as well as some teaching programmes at Linnæus University, see Further.

The purpose of the foundation year is to enable students to achieve required upper secondary school competence. Linnæus University wants to come into contact with new groups and enhance the competence of these students before they begin their university level studies. An additional aim is also to recruit more highly qualified students to natural sciences and engineering. The program has a flexibility to be able to meet students with varying previous knowledge from upper secondary school or adult secondary education.

## Objectives

Having completed the programme the students should be able to assimilate studies within natural science and engineering programmes at university level.

## Content

### *Programme Overview*

The foundation semester in Engineering Studies provides eligibility equivalent to Mathematics D, Chemistry B and Physics B. A foundation course in technology with an engineering profil is included. It is also possible to study Mathematics E.

The programme comprises one year of full-time studies (40 weeks). The courses included in the programme are usually part-time with two courses running parallel.

### *Programme Courses*

#### Autumn Term

Mathematics, Preparatory course, 15 foundation year credit points (equivalent to Mathematics C+D). Main content: elementary functions and studies of functions using derivatives, integrals and trigonometry.

Technology I, 7,5 foundation year credit points. Main content: technology in society, materials and manufacturing, stress analysis in a tension member, shear stress and machine elements.

Chemistry A, 7,5 foundation year credit point. Main content: basic concepts, periodic table, stoichiometry, inorganic substances, organic substances, chemical calculations, redox reactions, chemical bonding, gases, thermochemistry, acid-basic reactions and carbon compounds.

#### Spring Term

Physics, 18 foundation year credit points (equivalent to Physics A+B). Main content: mechanics, electricity, magnetism, thermal physics, waves and modern physics.

The Student choose between two courses

Technology II, Mechanical Engineering, 4,5 foundation year credit points. Main content: technical drawing, CAD, design methodology and design task (project).

or

Technology II, Electrical and Computer Engineering, 4,5 foundation year credit points. Main content: control technology, electrical machinery, lighting, switching technology, software technology and computer technology.

Chemistry B, 7,5 foundation year credit points. Main content: chemical energy, kinetics, chemical equilibrium, organic reactions and biochemistry.

Elective course in mathematics E, 6 foundation year credit points (eligible for students who have passed Mathematics D): Main content: in-depth studies of functions, derivatives, integrals, differential equations and complex numbers.

Descriptions of the courses included in the programme are given in separate syllabuses. The syllabus for the foundation course (providing eligibility) corresponds to the current policy documents for the equivalent courses in upper secondary school.

### *Work Experience*

Students get an understanding of working life through the information supplied by those responsible for the various training programmes within natural sciences and technology.

### *Studies Abroad*

The foundation year in Engineering Studies is a preparatory course and as such overseas studies are not included.

### *Scope of Programme*

Concepts such as sustainability, variety, gender, internationalization and environment are, of course, included.

## Quality Development

Written evaluations are made at the end of each course. The results of the evaluations are presented in course reports, which are filed in the department's archives. The results of the previous year's evaluations and possible follow-up actions are communicated to the person responsible for the course and to those studying at the start of each course respectively. The entire programme is evaluated at the end of the year by the person responsible for the programme.

## Degree Certificate

The programme is a pre-university course and no certificate is awarded.

## Other Information

Achieving passes in the necessary courses included in the foundation year in Engineering Studies that are needed to complete the requirements for eligibility guarantee a place on a number of natural science and engineering programmes at foundation level as well as some teacher training programmes at Linnæus University, see current Course Catalogue at [www.lnu.se](http://www.lnu.se). The number of guaranteed places available in certain programmes may be limited. If the number of applicants from the foundation year in Engineering Studies exceeds the number of places available a selection will be made based on the applicant's upper secondary school results.