



Programme syllabus

An accessible version of the syllabus can be found in the [Course and programme directory](#).

Degree Programme in Civil Engineering and Urban Management 300 credits

Civilingenjörsutbildning i samhällsbyggnad

Valid for students admitted to the education from autumn 21 (HT - Autumn term; VT - Spring term).

This is a translation of the Swedish, legally binding, programme syllabus.

Programme objectives

The information applies to students starting their studies in the academic year 2021-2022. There may be changes in programme content for years 2-5. Always refer to www.kth.se/utbildning for information on the latest approved syllabus.

The Degree Programme in Civil Engineering and Urban Management aims to provide students with prerequisites and the ability to participate in and manage work on how buildings, infrastructure and cities should be designed, built and administered. This also includes how institutions and regulatory systems should be developed to provide a good living environment and good development conditions for private individuals, trade and industry and society at large.

The Programme provides a broad knowledge base within mathematics-natural science subjects and civil engineering and urban management during the initial years and thereafter a specialisation within a specific civil engineering area in Urban Management will follow.

In addition to the objectives which apply for the civil engineering degree in the Higher Education Ordinance, the following specified requirements should also apply to a civil engineering graduate of the Degree Programme in Civil Engineering and Urban Management at KTH:

Knowledge and understanding

- Demonstrate knowledge of the technical and scientific basis for being able to work within a specialism within the technological area of Civil Engineering and Urban Management.
- Demonstrate such breadth and depth of knowledge which is necessary for working independently as a civil engineer within the technological area of Civil Engineering and Urban Management.
- Demonstrate understanding of the significance of technology applications for sustainable urban development as well as how the planning, construction and administrative procedure, the built environment and physical infrastructure can be developed.

Skills and abilities

- Demonstrate the ability to, with a holistic view, formulate and handle complex issues within the technological area of Civil Engineering and Urban Management.
- Demonstrate the ability to follow the development of knowledge in the technological area of Civil Engineering and Urban Management and apply the knowledge in practice.
- Demonstrate the ability to develop products, processes and systems within the technological area of Civil Engineering and Urban Management, taking into account the conditions and needs of human beings and society's goals for economical, social and ecological sustainable development.
- Demonstrate the ability to work independently, and in collaboration with groups with different composition.
- Demonstrate the ability to argue and discuss problems and solutions within the technological area of Civil Engineering and Urban Management in verbal and written reports in Swedish and English with different target groups in both national and international contexts.
- Demonstrate individual and professional skills for working as an engineer in a leading role.

Ability to make judgements and adopt a standpoint

- Demonstrate insight into the opportunities and limitations of urban management, its role in society and the responsibility of human beings for how it is used, including ethical, social, financial as well as environmental and work environment aspects.
- Demonstrate the ability of critical and independent thinking and assessment.

Extent and content of the programme

The Programme covers 300 credits, which corresponds to 5 years of full-time studies. The first three years of the Programme are primarily at first cycle and in Swedish. The two last years are at second cycle and the studies correspond to a Master's programme, as a rule with English as the language of instruction.

During the first two years the courses are compulsory and conditionally elective courses in mathematics-natural science subjects and civil engineering and urban management. Prior to year 3, students are given the opportunity to create a distinct profile towards a specific specialism which prepares for electives for Master's programmes and courses at second cycle. The courses in year 3 are compulsory and conditionally elective courses.

A number of courses in the Programme contain practical and realistic stages such as exercises, seminars, laboratory work, field exercises, study visits and project assignments with a strong connection to tasks which are a part of working life. Engineering skills are accordingly practised in different ways. The professional profile of the Programme is already highlighted during the first term through the course Planning and Building Process.

Studies in years 3 is done for a specific urban management such as civil and architectural engineering, construction project management, environmental engineering and sustainable infrastructure, town and traffic planning, geographical IT and real estate economics and real estate law.

The last two years of the Programme are studied within the framework of one of the Master's programmes Real Estate and Construction Management, Civil and Architectural Engineering, Sustainable Urban Planning and Design, Environmental Engineering and Sustainable Infrastructure as well as Transport and Geoinformation Technology.

Certain courses and subjects at second cycle in years 4 and 5 are research preparation.

Eligibility and selection

In accordance with the Higher Education Ordinance, basic eligibility is required for eligibility for KTH's programmes at first/second cycle. In addition, the following specific entry requirements must be fulfilled for KTH's civil engineering programmes corresponding to:

Mathematics 4, Chemistry 1, Physics 2

A pass mark is required as a minimum in each of the subjects.

For eligibility requirements and selection principles for the rest, refer to KTH's admission regulations in KTH's regulatory framework, www.kth.se.

Implementation of the education

Structure of the education

The academic year covers 40 weeks and is divided into two terms, the autumn and spring term. Each term covers two study periods.

For information about the academic year's scope, examination and re-examination periods, refer to <http://www.kth.se/student/schema>.

Years 1-3 Studies at first cycle

Courses in year 1 are a mix of mathematics-natural science subjects and subjects specific to civil engineering and urban management, with a focus on the former. Courses in year 2 focus more on civil engineering and urban management and application. The courses in years 1-2 together cover 120 credits. The choice of specialisation for year 3 is made at the end of the spring term in year 2. In year 3, the students take compulsory courses within the chosen specialisation and conditionally elective courses. Together with the degree project, the courses in year 3 cover 60 credits.

The studies in years 1-3 end with a degree project at first cycle of 15 credits within the technological area of Civil Engineering and Urban Management.

Years 4-5 Studies at second cycle

In years 4 and 5, the students study courses within chosen Master's programmes. Compulsory courses, conditionally elective courses and optional courses cover 120 credits together with the degree project.

The studies in years 4 and 5 end with a degree project at second cycle of 30 credits within the technological area of Civil Engineering and Urban Management.

Courses

The programme is course-based. Lists of courses are included in appendix 1.

Course lists for years 1-3 are contained in appendix 1. For course lists for years 4-5, see the syllabus of each Master's programme.

Grading system

Courses in the first and the second cycle are graded on a scale from A to F. A-E are passing grades, A is the highest grade. The grades pass (P) and fail (F) are used for courses under certain circumstances.

Information regarding the scale found in the curriculum.

Conditions for participation in the programme

Participation requires admission to courses within the programme and course registration.

Course registrations are done via Ladok for students (Current education)

In order to be eligible for advanced level studies within the integrated Master of Science programmes at KTH, you are required to complete 165 credits(included bachelor thesis) from year one through three. Of these, 110 credits must be from the year 1 and 2 curriculum.

In addition to the general requirements, special admission requirements apply to each master program.

Degree project

The degree project is the final part of the education. The project work may start when special admission requirements for the course are met.

Degree project at first cycle

Degree project at first cycle within the technological area of Civil Engineering and Urban Management covers 15 credits. It is up to the examiner to determine and verify that the student has the in-depth studies required and that the student has completed the main part of the studies before the degree project starts.

Degree project at second cycle

Degree project at second cycle covers 30 credits and is conducted within the chosen Master's programme. It is up to the examiner to determine and verify that the student has the in-depth studies required and that the student has completed the main part of the studies before the degree project starts.

The degree project is graded pass (P) or fail (F).

Degree

In order to be awarded the Degree Programme in Civil Engineering and Urban Management, a pass mark in courses covering 300 credits is required, of which 120 credits may have been taken within one of the five Master's programmes Real Estate and Construction Management, Civil and Architectural Engineering, Sustainable Urban Planning and Design, Environmental Engineering and Sustainable Infrastructure as well as Transport and Geoinformation Technology.

the 300 credits should include:

- 180 credits from first cycle at the Degree Programme in Civil Engineering and Urban Management or equivalent, of which the degree project at first cycle of 15 credits;
- at least 60 credits at second cycle (including the compulsory courses of the Master's programme)
- 30 credits degree project within the different courses of the Master's programme;
- maximum 30 credits completely optional courses

In the afore-mentioned degree of 300 credits, mathematics-natural science subjects of at least 45 credits should be included.

After the first three years, students have the opportunity to apply for the award of a Bachelor of Science of 180 credits in accordance with the completed academic year syllabus for the years 1, 2 and 3, also refer to KTH's degree regulation.

After completed studies of 300 credits, students also have the opportunity to apply for the award of a Master's degree of 120 credits alongside the civil engineering degree.

Application for the degree

The application for degree certificate is done through the personal menu on KTH.se.

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Appendix 1 - Course list

Appendix 2 - Programme syllabus descriptions



Appendix 1: Course list

Degree Programme in Civil Engineering and Urban Management (CSAMH)

General courses

Year 1

Mandatory courses (60.0 Credits)

| Code | Name | Credits | Edu. level |
|------------------------|---|---------|-------------|
| AG1314 | GIS and Surveying | 7.5 hp | First cycle |
| AI1128 | Economics of the Built Environment | 7.5 hp | First cycle |
| AI1527 | Introduction to the Planning and Building Process | 13.5 hp | First cycle |
| SF1516 | Numerical Methods and Basic Programming | 9.0 hp | First cycle |
| SF1624 | Algebra and Geometry | 7.5 hp | First cycle |
| SF1625 | Calculus in One Variable | 7.5 hp | First cycle |
| SF1626 | Calculus in Several Variables | 7.5 hp | First cycle |

Recommended courses

| Code | Name | Credits | Edu. level |
|------------------------|------------------------------------|---------|----------------------|
| SF0003 | Introductory Course in Mathematics | 1.5 fup | Pre-university level |

Year 2

Mandatory courses (45.0 Credits)

| Code | Name | Credits | Edu. level |
|------------------------|---|---------|-------------|
| AI1525 | Legal Framework of the Built Environment | 7.5 hp | First cycle |
| AI1802 | Project Management and BIM in the Built Environment | 7.5 hp | First cycle |
| AL1301 | Natural Resources Theory | 7.5 hp | First cycle |
| AL1302 | Geoscience and Geotechnical Engineering | 7.5 hp | First cycle |
| SF1910 | Applied Statistics | 7.5 hp | First cycle |
| SG1117 | Engineering Mechanics | 7.5 hp | First cycle |

Conditionally elective courses

| Code | Name | Credits | Edu. level |
|------------------------|--|---------|-------------|
| AF1002 | Buildings and Civil Engineering Structures | 7.5 hp | First cycle |
| AH1030 | Urban Development and Transport System | 7.5 hp | First cycle |
| SF1676 | Differential Equations with Applications | 7.5 hp | First cycle |

Year 4

Supplementary information

During the last two years, subjects are read within the framework of one of the master's programmes: Real estate and Construction Management, Civil and architectural engineering, Sustainable urban planning and design, Environmental engineering and sustainable infrastructure and Transport and geoinformation technology.

For courses in year 4, see courses within your selected master programme.

Civil Engineering and Construction Project
Management (BBP)

Real Estate Economics and Real Estate Law
(FEFJ)

Geographic IT (GIT)

Environmental Engineering and Sustainable
Infrastru. (MHI)

Urban and Traffic Planning (STP)



Appendix 2: Specialisations

Degree Programme in Civil Engineering and Urban Management (CSAMH)

Civil Engineering and Construction Project Management (BBP)

No information entered.

Real Estate Economics and Real Estate Law (FEFJ)

No information entered.

Geographic IT (GIT)

No information entered.

Environmental Engineering and Sustainable Infrastru. (MHI)

No information entered.

Urban and Traffic Planning (STP)

No information entered.