



Programme syllabus

Degree Programme in Constructional Engineering and Health Högskoleingenjörsutbildning i byggt teknik och hälsa *180.0 credits*

Valid for students admitted to the education from autumn 08 (HT - Autumn term; VT - Spring term).

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

Programme objectives

Construction engineering and health is an interdisciplinary programme in which the goals are to combine a construction engineer's competence with a deeper understanding of health concepts and for the factors which promote health and prevent from ill-health.

The programme educates the student for work within the construction area as well as project management, production or administration.

The programme will provide the student with base knowledge within the subject area and good orientation in management elements, such as: project management, production and administration of buildings and construction. Furthermore, the programme aims to provide the student awareness about how construction affects society with regards to human needs and conditions, and of society's goals regarding resource sustainability, economy and environment.

In order to be able to follow the ever faster technical development and the changes it results in, the student must acquire the ability to delve into a new technical area and be given a good basis for continuous personal development and "life-long learning" both within the main area and new subject areas.

After the programme, the student should:

- have the ability to apply basic knowledge within natural science subject such as mathematics and mechanics
- be able to apply fundamental technical specialised knowledge within, for example, construction engineering, production, and computer-based engineering tools such as CAD.
- have the ability to understand connections between construction engineering and architecture (understanding for the builder and architect's work)
- be able to independently solve minor technical problems within the construction engineering area
- have the skills to communicate orally and in writing, in English, and the ability to work effectively in projects

- have awareness about Swedish build and environment legislation such as plan and construction laws, building regulations and energy legislation.
- have knowledge about the players and work forms of the business
- have fundamental knowledge within industrial business
- have awareness about effects of work for humans and environments
- show knowledge about health concepts in a wide meaning and the factors which affect human health
- show general knowledge about the human anatomy
- show knowledge within ergonomics, injury prevention, and risk analysis
- show insights about ethical questions connected to health and medical care

Knowledge and understanding

Skills and abilities

Ability to make judgements and adopt a standpoint

Extent and content of the programme

The regular study time is 3 years, which comprises 180 higher education credits, and the courses are on the first level.

Eligibility and selection

For eligibility to the programme, basic eligibility and special eligibility are required in Mathematics course D, Physics course B, Chemistry course A. In each and every of these subjects, the lowest accepted grade is passed or 3.

Selection based on grades is used in two-thirds of the places in the programme. The places are divided proportionally, based on the eligible applicants, into two groups. Selection based on national university aptitude tests is used on one-third of the places in the programme.

Implementation of the education

Structure of the education

Most of the courses in the programme comprise 7.5 higher education credits, which are graded on a scale of A-E, F and Fx. The study year is normally divided into 4 study periods and, normally, two courses are taken in parallel every study period. The lectures, as well as the examination form vary from course to course. Normally, a portion of the course is constituted of lectures, which give first contact with concepts and theories. Exercises and labs strengthen the understanding of the theoretical connections. In accordance with the model from industry, project work plays an essential role in the education. Training is given to be able to, in a group, work with reality-related assignments in an engineering-related manner.

In order strengthen the programme, collaboration between courses as well as between study years is stressed. The programme is concluded during the last term with a degree project which is often carried out at an employer outside of the school.

The programme's first year is mainly devoted to courses within mathematics and fundamental construction engineering and mechanics. During the second year, the construction engineering subjects dominate. All of the courses during the first two years are obligatory. During the third year, the student chooses optional courses within the programme. In addition, there is a possibility to freely choose courses worth a total of 15 higher education credits under the conditions that these courses are relevant to the programme's objectives.

The six health-related courses comprise 37.5 higher education credits. In many of them, technical aspects are integrated. In addition, health aspects are also integrated in technical courses.

Term 1

The programme is started with an engineering introduction comprising three courses within the health area. Health and life-style, Anatomy and sickness, and ethical questions. The form of instruction is often lecture with relevant seminars where the participants' own reflections can be expressed, but labs are also used.

Terms 2-3

The term starts with a course in Risk analysis and injury prevention with relevant labs. Mathematics courses are designed to be adapted to the application areas. Courses within construction engineering, field measurements, construction physics, and construction materials and a project course within construction engineering with CAD is the core of the base courses within engineering which belong to the first year. As a portion in the first project course, lectures about architecture work and a small design drawing assignment are included. In study year 1, there is also the possibility to take an optional course comprising 3 higher education credits in design drawing with CAD as a specialisation in the project course within construction engineering. These elements give the student an introduction to and an understanding of the connection between architecture and construction engineering.

Terms 4-6

During these terms, courses in Production engineering, Fluid mechanics, Social planning, Geology and geo engineering are taken. In addition, the courses Economy and organisation and Environmental and work science are taken. In the course Production engineering, a project is included which is carried out in groups at different workplaces.

The course construction engineering builds further on the courses in construction mechanics and the knowledge is applied in the most common construction materials in connection with Swedish norms and loads. In the course construction and design, the student attains deeper knowledge in construction design's affect on character.

During this period, a 5th health-related course is given where the aim to concretely integrate technology and health-thinking. When the students start their 6th and final term, they have 37.5 higher education credits in the health area and conclude their studies with an optional course within the specialisation and a degree project.

Courses

The programme is course-based. Lists of courses are included in [appendix 1](#).

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.

Conditions for participation in the programme

For students in the inter-disciplinary programme which has taken mainly economy or health courses as combination in the spring term, the following apply:

After 3 study terms, at least 60 higher education credits must be completed before the next term may be started. For students who do not fulfill this requirement, an individual study plan must be created in collaboration with the study guidance.

After 5 study terms, at least 105 higher education credits must be completed before the next term may be started. For student who do not fulfill this requirement, an individual study plan must be created in collaboration with the study guidance.

Term enrolment and selection of courses

The student must complete term enrolment prior to each term, via Mina Sidor, at the latest November 15th, and May 15th, respectively. The term enrolment lays the foundation for term registration. This makes it possibility to register grades and provide student aide from CSN. The student who does not fulfil the conditions for being promoted to the next level must contact the study guidance. Before the fall and spring terms in study year 3, a course selection may occur.

Course registration

Every student must, at the first scheduled lecture, sign a course registration's list. A student who has registered themselves in a course and has thereafter decided not to continue with the courses, must contact the course responsible teacher as soon as possible.

It is the student's responsibility to ensure that possible course prerequisites are fulfilled before the start of a new course. Information about prerequisites can be found in the respective course plans.

Temporary postponment

Temporary postponement means that the student does not participate in lectures during at least one term.

Granted temporary postponement gives the student the right to return to the studies at a predetermined point in time. During the temporary postponement, the student may complement incomplete courses, or participate in examinations from earlier started courses.

The application for temporary postponement is submitted to the study guidance, which approves or rejects the application. When the student decides to return to the studies, a new application must be submitted according to the above.

If the student, after the temporary postponement period, does not enrol in the term or submit an application for continued temporary postponement, a cancellation of studies is registered.

Recognition of previous academic studies

The student has the right to receive credit for education from another higher education institution /university within Sweden or abroad. The condition is that the course(s) are of such a nature and have such content that they correspond to the learning outcome goals which apply for the programme. Recognition of an entire course is approved by the GA. Elements of a course can be approved by the examiner.

Studies abroad

Students at the School of Technology and Health (STH) have the possibility to allocate one study year to studies abroad at a foreign institute with which KTH collaborates without having to pay the normal study fee which is possibly required by native students. Exchange studies can be done during the third study year. It is also possible to carry out the degree project abroad.

Information about studies abroad is provided by supervisor for internationalisation who also informs about application deadlines. Application forms can be found at the study guidance office.

Studies abroad can, after evaluation, be counted as a portion of the Bachelor of Science in Engineering programme. The student must, together with the school, build a so-called “Learning Agreement” which entails approval of the exchange studies in advance. The studies are normally instructed in the language which is spoken in the region or country. There are possibilities for one whom is accepted to the exchange programme in German, French, Spanish, and Italian speaking countries to take a prepared language course before the regular term starts.

Degree project

In the programme, a degree project comprising 15 higher education credits is included. This corresponds to about 10 weeks of full-time studies. See more, Guidelines for the degree project, The School for Technology and Health.

For the degree project, the following apply:

- It may be started at the earliest after 120 higher education credits are completed, and when all courses relevant to the degree project’s content are completed.
- It may be started after the assignment is approved by the examiner.
- It is based in the knowledge which has been acquired during the time of study and must normally be carried out during term 6.
- It must show proof of an independent work comprising theoretical and/or experimental work, and a relevant written report and oral presentation.
- The instructor is appointed by the specialisation leader or examiner.

Degree

In order to receive a Degree of Bachelor of Science in Engineering, degree programme in Construction Engineering and Economics, all courses in the study plan must be completed. The study plan consists of obligatory courses, optional courses and the degree project, and comprises at least 180 higher education credits.

Courses which, content-wise, overlap other courses in the programme may not be counted towards the 180 higher education credits which comprise the degree.

The student applies for the degree on a form and attaches receipts for the paid student union fees.

[Appendix 1 - Course list](#)

[Appendix 2 - Programme syllabus descriptions](#)



Appendix 1: Course list

Degree Programme in Constructional Engineering and Health (TIBHL), Programme syllabus for studies starting in autumn 2008

General courses

Year 1

Mandatory courses (60.0 Credits)

Course code	Course name	Credits	Edu. level
HF1004	Mathematics and Statistics	7.5 hp	First cycle
HF1901	Mathematics I	7.5 hp	First cycle
HH1803	Risk Analysis and Injury Prevention	7.5 hp	First cycle
HS1000	Engineering project	7.5 hp	First cycle
HS1002	Building Physics	7.5 hp	First cycle
HS1003	Structural Mechanics 1	7.5 hp	First cycle
HS1004	Structural Mechanics 2	7.5 hp	First cycle
HS1005	Surveying and Mathematical Statistics	7.5 hp	First cycle



Appendix 2: Specialisations

Degree Programme in Constructional Engineering and Health
(TIBHL), Programme syllabus for studies starting in autumn 2008

This programme has no specialisations.