

Diploma in Construction Technology (first cycle, level 1)

The study program in Construction Technology is 3 years (6 semesters) part time study through distance learning. The total credits are 90 ECTS. All courses are 6 ECTS except the final project which is 12 ECTS.

The program is practically orientated, rooted in the construction and civil engineering industry. The main subjects of study are mechanics, materials science, structural design, building construction, installations, computer aided design, surveying, law, management and administration. Emphasis is placed on practically oriented project work and the application of computer design tools. Most of the teachers have extensive industrial experience.

In the last semester the students complete a 12 ECTS final project wherein they demonstrate the knowledge and professional competence they have gained, dealing with technical solutions in design, planning and development.

The main objective of the program is to qualify students for jobs as intermediate professionals, filling the gap between certified tradesmen and higher level technical staff. Construction Technicians generally work in architecture and engineering firms alongside architects and civil engineers, as supervisors or inspectors in the building industry or as managers on construction sites.

Students who graduate with a Diploma in Construction Technology can go on to a 120 ECTS program in Constructing Architecture BS (a total of 210 ECTS). Students who wish go on to Reykjavik University's Civil Engineering BSc program are required to take a two term program in mathematics, physics, chemistry and languages at RU's preparatory department.

On the completion of the Diploma program in Construction Technology the following criteria shall be fulfilled. For further information, i.e. learning outcomes for each course, see the Course Catalog in Construction Technology.

Knowledge and understanding:

On completion of the diploma program students should:

- have sufficient knowledge and understanding of the basic principles of mathematics, physics, statics and mechanics to be able to apply them to the solution of common technical problems in the field of Construction Technology.
- have sufficient general and integrated knowledge in the field of Construction Technology, Civil Engineering and Architecture to be able to analyse common problems in that field, assess the need for assistance and seek specialist advice from civil engineers, architects and/or other specialists.

Type of knowledge:

On completion of the diploma program students should:

- have a working knowledge of modern software for computer-aided design such as AutoCad and Architectural Desktop, in two and three dimensions.
- have a working knowledge of modern software for project management and cost estimation such as MS-Project.
- have a basic knowledge and understanding of structural mechanics, structural design, building technology, building construction, building physics, installation systems, surveying, soil mechanics, geotechnics and the material properties of concrete, timber and steel.
- have adequate knowledge of the general principles of construction and geotechnical engineering to be able to work at supervision and inspection at building sites and road construction sites.
- be familiar with the basic operation of Icelandic government, the laws and regulations upon which the industry is based and the legal responsibilities and ethical norms that govern those that run businesses in the industry.
- be familiar with the basic principles of finance, management, administration and safety as needed to lead smaller industrial enterprises.
- have sufficient knowledge of all subjects taught within the diploma program to be able to analyse related problems, assess the need for assistance and seek relevant specialist advice from civil engineers, architects and/or other specialists.

Practical skills:

On completion of the diploma program students should:

- be able to lead the operation of smaller industrial enterprises.
- be able to be in charge of the finances of smaller enterprises.
- be able to perform the accounting in industrial enterprises, albeit with professional assistance in more complex tasks.
- have sufficient knowledge in didactics and security to be able to, as master tradesman, give instructions to and be responsible for apprentices.
- be able to prepare tender documents, offers, project plans and cost estimates for common and traditional construction projects and evaluate plans prepared by others.
- be able to work as supervisors and inspectors on site and in industry.
- be able to participate in the management of construction, manufacturing and inspection on site.
- be able to work on common and traditional tasks in the designing of buildings and building elements, alongside civil engineers and architects.
- be able to work on common and traditional tasks in the manufacturing, use and maintenance of building materials.
- be able to perform customary surveying, measurements and setting out on site for smaller building projects and earth works.
- be able to work on common and traditional tasks in road construction and other earthworks.

- be able to assess the need for and seek applicable specialist advice in all subjects taught within the Construction Technology program.

Theoretical skills:

On completion of the diploma program students should:

- have obtained a general overview and insight into the field of Construction Technology through the interaction of courses in project work.
- be able to apply, integrate and assimilate knowledge from a wide range of subjects (i.e. the subjects studied within the Construction Technology program).
- have obtained training in the use of independent and goal oriented methods to solve problems in practical project work for the industry.

Communication skills and information literacy:

On completion of the diploma program students should:

- work effectively in a team, also with people from other fields of the industry, and convey their knowledge and skills in a clear and concise manner.
- find information that is relevant to a particular task using personal and professional contacts, repositories, search engines and libraries.
- communicate effectively both in writing and by means of presentations, using appropriate technical language and computer tools.
- be able to use freehand sketches for explanation and communication on site.
- be able to use the appropriate software when preparing drawings and presentations.
- show a care to clients and employees, in accordance with the ethics, laws and regulations that are applicable in the industry.

Learning skills:

On completion of the diploma program students should:

- be able to apply theory in a systematic way to the solution of technical problems.
- be able to take an organized technical approach to a problem and its definition, gathering and evaluating information, offering possible solutions and presenting results in a professional manner.
- be able to pursue further studies, i.e. at bachelor's level.