



# Diploma in Construction Technology (fyrst cycle, level 1)

The programme leading to a Diploma in Construction Technology is 90 ECTS credits, taught through distance learning. The requirements for the Diploma in Construction Technology reflect the requirements for the professional title of Certified Technician (Icelandic: *iðnfræðingur*), as accredited by the Icelandic Ministry of Industries.

The programme is practically orientated, rooted in the construction and civil engineering industry. Emphasis is placed on practical project work and the application of computer design tools. Most of the teachers have extensive industrial experience. In the final semester, students complete a final project of 12 ECTS dealing with technical solutions in development, design and planning, wherein they demonstrate the knowledge and professional competence they have gained.

The main objective of the programme is to qualify students for jobs as intermediate professionals, filling the gap between certified tradesmen and higher level technical staff.

Students who graduate with a Diploma in Construction Technology take a further 120 ECTS in constructing architecture and graduate with a BSc degree in Constructing Architecture, a total of 210 ECTS credits.

Upon completion of the programme, the following criteria shall be fulfilled.

## KNOWLEDGE

Upon completion of the programme, the student should have gained general knowledge and understanding of basic principles of the following:

- Structural mechanics, structural design, building technology, building construction, installations, geotechnics, surveying, and material properties of concrete, steel and timber.
- Computer-aided drawing and design, including the methods and tools most commonly used i.e. AutoCad and Revit/BIM.
- Project management, including the methods and software most commonly used in scheduling and planning i.e. MS Project.
- The general structure of design projects in the building industry.
- The provisions of Icelandic laws, regulations, standards and ethics relating to the construction industry.
- Basic principles of finance, management, administration, and operational safety related to the management of smaller industrial enterprises.
- Didactics, especially pertaining to the instruction of apprentices.



## SKILLS

Upon completion of the programme, the student should have gained the skills to:

<b>Disciplinary skills</b>	<ul style="list-style-type: none"><li>• Work with design software such as AutoCad and Revit/BIM.</li><li>• Make technical drawings according to standards.</li><li>• Assess the load bearing capacity of simple building elements.</li><li>• Prepare tender documents and offers for construction projects, as well as project plans, schedules and cost estimates.</li><li>• Draft the size and design of simple structural elements and building parts.</li><li>• Draft the size, type and location of simple water, heating and sewage utility systems.</li><li>• Perform customary surveying, measurements and setting out on site for common buildings and earthworks.</li><li>• Utilize the basics of soil mechanics to draft geotechnical solutions for foundations of smaller buildings and installations.</li><li>• Do accounting for small businesses, both by hand and using appropriate software.</li><li>• Make calculations relating to administration, salaries, taxes, cash-flow, indexation and bonds for small businesses.</li><li>• Apply knowledge of safety standards and procedures, administration and management to processes in production and industrial enterprises.</li><li>• Integrate knowledge from all subjects taught in the Construction Technology programme to analyse problems in the field, suggest solutions and evaluate the need for expert assistance.</li></ul>
<b>Personal skills</b>	<ul style="list-style-type: none"><li>• Express him-/herself orally and in writing, and convey knowledge in a concise and professional manner.</li><li>• Use practical knowledge to solve technical problems..</li><li>• Apply technical methods in a systematic manner to define problems, and to collect and assess information.</li><li>• Use independent and effective procedures to solve problems in practical project work for the industry.</li><li>• Present possible solutions and results in a professional manner.</li></ul>
<b>Interpersonal skills</b>	<ul style="list-style-type: none"><li>• Work and communicate effectively in a team, also in interdisciplinary teams, and share knowledge.</li><li>• Collect information relevant to a specific task by using personal and professional contacts, libraries, and search engines.</li><li>• Use freehand sketches for explaining and communicating on site.</li><li>• Make presentations of technical projects, using appropriate technical language and software.</li><li>• Associate with owners, employers and employees in accordance with the laws, regulations, ethics, and codes of conduct that are applicable in the industry.</li></ul>



## COMPETENCE

Upon completion of the programme, the student should be able to utilize the knowledge and skills he/she has acquired to:

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|  | <ul style="list-style-type: none"><li>• Work on traditional and common tasks in the design of buildings and building elements, alongside civil engineers and architects.</li><li>• Work as supervisors and inspectors on construction sites and in industry.</li><li>• Work in manufacturing, production and maintenance in the building industry.</li><li>• Work on accounting in industrial enterprises, albeit with professional assistance in more complex tasks.</li><li>• Instruct and be responsible for apprentices, as a master tradesman.</li><li>• Pursue further studies, through life-long learning or towards a more advanced degree i.e. at BSc level.</li></ul> |
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