Diploma in Electrical Technology (fyrst cycle, level 1)

The programme leading to a Diploma in Electrical Technology is 90 ECTS credits, taught through distance learning. The requirements for the Diploma in Electrical 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 electrical and electronics 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, wher Mechanical ein 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.

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:	
	• Electric circuits, electronics, digital technology, electrical machinery, power distribution systems, programmable controllers and control systems, and the design of lighting and electrical installations. • Computer-aided drawing and design, including the methods and tools most commonly used i.e. AutoCad. • The general structure of design projects in the electric power and electronics industry. • The provisions of Icelandic laws, regulations, standards and ethics relating to the electric power and electronics 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:

Disciplinary skills	• Work with design software such as AutoCad. • Make technical drawings according to standards. • Assess the function and capacity of electric circuits. • Assess the electric power requirement of buildings, machines and power distribution systems. • Draft the size and design of common and traditional lighting and electric installations systems, and select spare parts. • Install digital equipment, work on maintenance tasks and analyse breakdowns. • Design programmable, individual controllers. • Do accounting for small businesses, both by hand and using appropriate software. • Make calculations relating to administration, salaries, taxes, cash-flow, indexation and bonds for small businesses. • Apply knowledge of safety standards and procedures, administration and management to processes in production and industrial enterprises. • Integrate knowledge from all subjects taught in the Electrical Technology programme to analyse problems in the field, suggest solutions and evaluate the need for expert assistance.
Personal skills	• Express him-/herself orally and in writing, and convey knowledge in a concise and professional manner. • Use practical knowledge to solve technical problems. • Apply technical methods in a systematic manner to define problems, and to collect and assess information. • Use independent and effective procedures to solve problems in practical project work for the industry. • Present possible solutions and results in a professional manner.
Interpersonal skills	• Work and communicate effectively in a team, also in interdisciplinary teams, and share knowledge. • Collect information relevant to a specific task by using personal and professional contacts, libraries, and search engines. • Make presentations of technical projects, using appropriate technical language and software. • Associate with owners, employers and employees in accordance with the laws, regulations, ethics, and codes of conduct that are applicable in the industry.

COMPETENCE

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

- Work on traditional and common tasks in the designing of electrical systems, installations and equipment, alongside electrical engineers.
- Work as supervisors and inspectors in the electric power and electronics industry, and on sites.
- Work in manufacturing, production and maintenance of electric and electronic machines and equipment.
- Work on accounting in industrial enterprises, albeit with professional assistance in more complex tasks.
- Instruct and be responsible for apprentices, as a master tradesman.
- Pursue further studies, through life-long learning or towards a more advanced degree i.e. at BSc level.