



Mapping – Electronics Technician (Finland)

Translated title of the training programme	Vocational qualification in Electrical Engineering and Automation Technology					
	 Electrician Automation Assembler. 					
Brief explanation of the professional fields of ac-	Holders of a vocational qualification in electrical engineering and automation technology are able to perform installation, repair and commissioning tasks					
tivity (appr. 5 sentences)	safely at real estate properties and in industry. Depending on the studies they have chosen, qualification holders may specialise in electrical installations or installations of automation or electrical networks.					
	• The structure of the vocational qualification in electrical engineering and automation technology has been planned to so that the education of electricians is					
	suitable for Electrical qualification 2 referred to in electrical safety legislation and the education of automation assemblers is suitable for Electrical qualification					
	3					
Certificate (incl. EQF-level)	OPH-4947-2021					
	European Qualifications Framework (eqf) 4 ISCED 3					
Entry requirements	Entry requirements are not governed by legislation; as a rule, young people are admitted after completing (nine years of) general education.					
Access to next level of education / VET-training	The qualification confers eligibility for higher education studies.					





VQTS-Matrix Building Service Engineering, Electronics Technician (Finland), May 2024





Notes on using the matrix (Glossary)

The competence matrix for the field of Building Service Engineering is the result of a pan-European empirical study of operational practice. From this, a total of 10 core work processes were identified on the vertical axis and the competences required for these were described as units of learning outcomes. The entire matrix relates to EQF levels 3 - 6. The level of requirement of the matrix increases horizontally and, with regard to core work processes 1 to 7, also vertically. Core work processes 1 to 7 relate to classic core competences in Building Service Engineering. Core work processes 8 to 10, on the other hand, are to be understood more as cross-activity areas of expertise that are particularly important for adaptation processes in the context of interdisciplinary cooperation. The units in the matrix are formulated in general terms and can therefore be related to different occupational fields that have cross-sectional competences in Building Service Engineering.

The definitions and explanations below will help you to identify the competencies of the various occupational fields

Building systems tech- nology	Building systems technology encompasses all the technology required to operate a building. This includes construction technology, sanitation, heating and air conditioning, electrical engineering, information technology and security technology.
Building systems	Building systems include all technical components of a building for the supply of heat, air, light, water, energy and information, the disposal of wastewater and exhaust air as well as all associated processes. The term building system must be replaced accordingly for an individual building systems technology trade (e.g. electrical engineering or sanitation, heating, and air conditioning). e.g.: Electrical engineering: the entire power supply of a building. Heating technology: the entire heating system of a building.
Components of building systems	Components of building systems include single technically relevant elements of a building. e.g.: Electrical engineering: PV modules as a component of the entire electrical energy supply. Heating technology: A heat pump as a component of a building's entire heating system.
Building system pro- cesses	In terms of facility management, building system processes include all technical and service-related processes regarding planning, construction, operation and dismantling of a building. (e.g. switch-on times of lighting, ventilation, and air conditioning systems, cleaning intervals, presence times, energy flows, operating times of monitoring equipment)









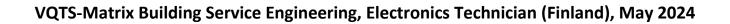


1st and 2st year of vocational education
3st year of vocational education

	Competence areas Core working process	Steps of competence development:							
1	Assembly, disassembly and disposal of building systems and their components Rakennusjärjestelmien ja niiden komponenttien kokoaminen, purkaminen ja hävittäminen	He/she can assemble and disassemble components of building systems according to existing assembly and installation plans and in compliance with applicable standards, regulations, and laws. He/she can professionally separate components and building materials while the disposal of building systems.		He/she can plan and document the assembly and disassembly of components of building systems according to customer specifications and in coordination with authorities, architects, and system manufacturers, considering legal requirements. He/she can dispose of the professionally separated components and building materials of building systems in accordance with legal regulations. He/she can estimate workloads and report possible problems to superiors.			tion, dis tems or custome	can develop new concepts for installa- smantling and disposal of building sys- their components in cooperation with ers, authorities, and manufacturers of systems technology.	
2	Maintain building systems or their components Huolla rakennusjärjestelmiä tai niiden osia	He/she can operate components of build tems according to specifications and chefunction.		He/she can carry out and document inspection, maintenance, and repair work on components of building systems according to the manufacturer's instructions.		He/she can carry out complex inspection, maintenance and repair work on building systems and prepare documentation.		He/she can create maintenance concepts for building systems considering manufacturer specifications and economic aspects as well as applicable regulations and standards. He/she can create deployment and work plans and determine the team's human and material resources. He/she can use project management tools in a targeted manner.	
3	Commissioning of building systems or their components Rakennusjärjestelmien tai niiden osien käyttöönotto		building in accord ments a and test the applications. He/she defects a	can commission technical systems and configure them dance with customer requireand prepare documentation reports in compliance with dicable standards and specifican recognize and document and conflicting objectives durmissioning.	He/she can commission complex technical building systems and configure them in accordance with customer requirements as well as prepare documentation and test reports in compliance with applicable standards and specifications. He/she can recognize and document defects and conflicting objectives during commissioning and resolve them in coordination with other trades.		building systems technology in compliance with applicable standards and specifications.		He/she can hand over complex technical building systems or the entire building system technology to the operator, including the associated documentation, instruct him/her in its use and inform him/her of the operator's responsibilities.





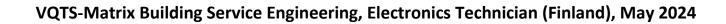






	Competence areas Core working process			Steps of competence development:				
4	Monitoring, control and optimization of building system processes through building automation Kiinteistöjärjestelmien prosessien val-	He/she can operate simple building automation systems according to specifications and guidelines and further check system statuses to ensure a stable operating status.	He/she can interpret data when faults occur in building systems, initiate processes to rectify faults according to guidelines and document this.	He/she can independently develop solution strategies in the event of faults occurring in technical building systems and initiate their implementation.		event of conditions of complex building sysbuilding tems, carry out optimizations and		He/she can develop, document, and implement concepts for optimizing the economy and ecology of building system processes by analyzing building automation data.
	vonta, ohjaus ja opti- mointi rakennusauto- maation avulla							
5	Conception of build- ing systems, their components and the associated processes Konsepti rakennusjär- jestelmistä, niiden komponenteista ja niihin liittyvistä pro- sesseista	He/she can recognize, structure, and specify the requirements for building systems from customer orders and convert them into a user profile, considering applicable regulations, standards, and laws. He/she can create a concept for the requirements for building systems from user profiles.	He/she can dimension and select components of building systems according to the concepts created from the user profiles in compliance with regulations and guidelines.	to the concepts created from r profiles in compliance with		data for the documentation of property operation and prepare given data for the management of buildings.		He/she can prepare tender documents based on applicable legal requirements and the user profile. He/she can determine optimization potentials regarding economy and ecology for existing systems and new systems, and further create corresponding concepts and advise customers in this regard.
6	Identification, implementation, and review of legal requirements for the operation of a building system Rakennusjärjestelmän toimintaa koskevien lakisääteisten vaatimusten tunnistaminen, toteuttaminen ja tarkistaminen	He/she can carry out and document activities to maintain operation regarding legal requirements for a building system or its components as specified.	He/she can identify the legal requirements for the operation of a building system based on regulations and further implement and document them through organizational measures. He/she can carry out a safety briefing.	He/she can independently create test protocols and work plans based on legal requirements.		He/she can prepare a hazard assessment (risk analysis). He/she can take the risk analysis into account when organizing the operation of a building system and when planning personnel deployment.		He/she can create and optimize a guideline for the implementation of legal requirements, draw conclusions about their effectiveness and take them into account in future planning processes.
7	Cost control and monitoring for the life cycle of a building system	He/she can determine and document be for tracking cost of building systems in ance with guidelines.				nd analyze them to identify optimization tion pot		can implement the identified optimiza- entials and ensure their effectiveness.









	Competence areas Core working process	Steps of competence development:						
	Kustannusten hallinta ja seurantaa varten ra- kennusjärjestelmän elinkaari							
8	Communication across trades, also in foreign languages Viestintä eri alojen välillä, myös vierailla kielillä	He/she can understand basic technical terms of his/her own and other trades. He/she can conduct conversations with superiors and employees of his/her own and other trades and customers in an appropriate manner while presenting and explaining facts. He/she can read product data sheets and carry out assembly and operating instructions of his/her own and other trades. He/she can communicate with non-specialist trades with the help of translation aids.	from his/her over the she can contain and employees and customers ately. He/she can ob	derstand and use technical terms vn and other trades. Induct discussions with superiors of his/her own and other trades and resolve conflicts appropritain and evaluate assembly and uctions as well as product data ades.	He/she can conduct and docume coordination meetings with "d from all trades and authorities in He/she can resolve conflicts app He/she can understand, interp standards, laws and regulation framework of the overall system	ecision-makers" nvolved. ropriately. oret, and applyons within the	He/she can create complex process descriptions across all trades, considering applicable regulations. He/she can organize cross-trade communication in a foreign language.	
9	Human resources management Henkilöresurssit hallinta	He/she can identify the training needs of emplo and organize suitable training courses for further training.		He/she can plan personnel requ qualification profile of specialist ing job descriptions.		He/she can conduct and document personnel development interviews with employees. He/she can prepare an appraisal for employees based on criteria. He/she can recognize the professional and personal development potential of employees and promote it through suitable measures.		
10	Digital information and knowledge management Digitaalinen tieto ja tieto hallinta	He/she can choose basic and advanced digital tools to solve professional tasks and use them in a targeted manner in his/her own profession. He/she can apply data protection regulations and legal regulations in a professional context. He/she can carry out targeted information research to solve professional tasks and evaluate the results.		He/she can choose basic and ad professional tasks and use them manner not only in his/her own He/she can select and use suitab nical presentations and documer He/she can carry out targeted in fessional tasks and evaluate the sional accuracy.	in a targeted, collaborative profession. le digital tools to create technitation. formation research to solve pro-	He/she can design and create building operation workflows from an economic and ecological point of view while taking future requirements into account with the help of suitable tools and modern technologies.		



