



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 activity	Holders of a vocational qualification in electrical engineering and automation technology are able to perform installation, repair and commissioning tasks safely at real					
(appr. 5 sentences)	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)









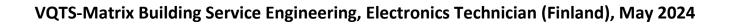


1st and 2nd year of vocational education 3rd year of vocational education

	Competence areas Core working process	Steps of competence development:							
1	Assembly, disassembly and disposal of building systems and their components Rakennusjärjestelmie n 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 docume and disassembly of compone tems according to customer's coordination with authorities system manufacturers, conquirements. He/she can dispose of the proted components and building ing systems in accordance with the/she can estimate workload sible problems to superiors.	ents of building syspecifications and in es, architects, and asidering legal reports of essionally separatematerials of building syspensis materials of building separate legal regulations.	mantling and disposal concepts for building systems or their components regarding process optimization and the current legal situation. He/she can use project management tools in a targeted manner.		tion, dis tems or custome	can develop new concepts for installa- mantling 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 building systems according to specifications and check their function.		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 Rakennusjärjestelmie n tai niiden osien käyttöönotto	building components according to specifications and customer requirements. n a tl	building in accord ments a and test the applications. He/she codefects a	can commission technical systems and configure them dance with customer requirement prepare documentation reports in compliance with icable standards and specifican recognize and document and conflicting objectives durnissioning.	technical building sure them in accordance requirement pare documentation in compliance with ards and specificat He/she can recognished.	on and test reports in applicable standions. Dize and document ting objectives durand resolve them	He/she can commission th building systems technology pliance with applicable stand specifications.	in com-	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.







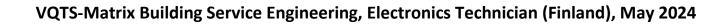




	Competence areas Core working process			Steps of competence development:					
4	Monitoring, control and optimization of building system pro- cesses through build- ing automation	He/she can operate simple building automation systems according to specifications and guidelines and further check system statuses 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 indepen solution strategies in faults occurring in teasystems and initiate tation.	the event of chnical building	event of conditions of complex building sys- l building 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.	
	Kiinteistöjärjestelmie n prosessien valvonta, ohjaus ja optimointi rakennusautomaation avulla								
5	Conception of building systems, their components and the associated processes Konsepti rakennusjärjestelmist ä, niiden komponenteista ja niihin liittyvistä prosesseista	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.	building system proce facility management. He/she can prepare determine costs for th management of building system process.	for the management of buildings. prepare technical data, osts for the operation and at of buildings and further ice tasks as well as com-		f prop- en data	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	He/she can determine and document b for tracking cost of building systems in ance with guidelines.	t. te				can implement the identified optimiza- entials and ensure their effectiveness.		











	Competence areas Core working process								
	life cycle of a building system Kustannusten hallinta ja seurantaa varten rakennusjärjestelmän 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.	He/she can understand and use technical terms from his/her own and other trades. He/she can conduct discussions with superiors and employees of his/her own and other trades and customers and resolve conflicts appropriately. He/she can obtain and evaluate assembly and operating instructions as well as product data sheets for all trades.		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, interstandards, laws and regulation framework of the overall system	ecision-makers" nvolved. ropriately. oret, and apply ons 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 employees and select and organize suitable training courses for further education and training. He/she can plan personnel requirements, define criteria for the qualification profile of specialist staff and formulate corresponding 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 too fessional tasks and use them in a targeted manne profession. He/she can apply data protection regulations and tions in a professional context. He/she can carry out targeted information research fessional tasks and evaluate the results.	in his/her own profess manner legal regula- He/she onical prescriptions that to solve pro- He/she of	ional tasks and use them not only in his/her own can select and use suitable sentations and document can carry out targeted in I tasks and evaluate the	le digital tools to create tech-	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.			



