

Study programme "Power and Electrical Engineering"

Main attributes

Title	Power and Electrical Engineering
Identification code	EDN0
Education classification code	51522
Level and type	Doctoral (Third Cycle) Studies
Higher education study field	Power and Electrical Engineering, Electrical Technologies
Head of the study field	Oskars Krievs
Deputy head of the study field	Pāvels Gavrilovs
Department responsible	Faculty of Electrical and Environmental Engineering
Head of the study programme	Antans Sauļus Sauhats
Professional classification code	
The type of study programme	Full time
Language	Latvian, English
Accreditation	29.05.2013 - 31.12.2022; Accreditation certificate No 2020/40
Variant 1	
Volume (credit points)	192.0
Duration of studies (years)	Full time studies - 4,0
Degree or/and qualification to be obtained	
Qualification level to be obtained	The 8th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	
Variant 2	
Volume (credit points)	192.0
Duration of studies (years)	Full time studies - 4,0
Degree or/and qualification to be obtained	
Qualification level to be obtained	The 8th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	

Description

Abstract	In the way of the first 2 years studies in individual cooperation with the profesors some esential for doctors of Electrical Sciences compulsory, specialization and free choice subjects are provided on aspects of principles of Power and Electrical Engineering. At the second part of studies scientific investigation is done on individual scientific problem.
Aim	The aim of Doctoral studies is to train high-qualified specialists in the area of Power and Electrical Engineering, who can solve tasks of scientific novelty
Tasks	Study programme tasks are following: - To improve pedagogical skills necessary for successful work as academic staff after graduation of the doctoral studies - To improve knowledge about research methods and their use - To improve skills to define and independently solve scientific problems - To improve scientific literature analysis skills and scientific communication skills
Learning outcomes	Students can independently evaluate and select the methods that are appropriate to scientific research into Power and Electrical Engineering. The achieved results give a new understanding of existing knowledge and its practical application, and help to implement volumnious original research, a part of which can reach the level of internationally quoted publications. Students can communicate with scientific circles and society in general thier own field of scientific activity. Students can independently upgrade their scientific qualification and carry out scientific projects, can manage research or development tasks. By applying independent critical analysis, synthesis and evaluation, students can solve important research or innovation problems
Final/state examination procedure, assessment	The doctoral degree in engineering is awarded after successful public defense of a dissertation in Promotion Council
Description of the future employment	After studies young doctors can work in universities, different research instituts or in Power or Electrical Utilities
Special enrollment requirements	Master degree in electrical sciences or an equivalent academic degree
Opportunity to continue studies	N/A

Courses

No	Code	Name	C.p. [1]	C.p. [2]
A		Compulsory Study Courses	15.0	
1	EES752	Mathematical Methods in Power Engineering	9.0	
2	EES746	Automation and Protection of the Electrical Power System. Scientific Seminar	6.0	
B		Compulsory Elective Study Courses	21.0	
B1		Field-Specific Study Courses	21.0	
		<i>Electric Power Engineering</i>	<i>21.0</i>	
1	EES663	Automation and Optimization of Electric Power Systems	9.0	
2	EES665	Synthesis of Electrical Power System's Automation Arrangements	6.0	
3	EES753	Dynamics and Stability of Power Systems	9.0	
4	EES666	Synthesis of Power System Automation Algorithms	6.0	
5	EEA689	Power Systems Protective and Automation Algorithms	9.0	
		<i>Power Supply</i>	<i>21.0</i>	
1	EEA688	Electric Power System Regimes	9.0	
2	EEA698	Nonlinear Processes of Energy Transfer	6.0	
3	EEA696	Energy Technology. Advanced Course	6.0	
4	EEA697	Demand Side Management. Advanced Course	6.0	
5	EEA680	Reliability of Power Systems	6.0	
6	EEA681	Power Systems Optimum Development	6.0	
		<i>Heat Power Engineering</i>	<i>21.0</i>	
1	EEA682	Ecological Aspects of Energy Technology	9.0	
2	EEA694	Heat and Mass Transfer Processes and Technology	6.0	
3	EEA695	Modeling of Energy Systems	6.0	
		<i>Alternative Energy Equipment</i>	<i>21.0</i>	
1	EEA693	Energy Efficiency. Advanced Course	9.0	
C		Free Elective Study Courses	6.0	
E		Final Examination	150.0	
1	EEA009	Research Work	150.0	
2	EES009	Research Work	150.0	
A		Compulsory Study Courses		15.0
1	EEM654	Electrical Machines and Equipment. Special Course		15.0
B		Compulsory Elective Study Courses		21.0
B1		Field-Specific Study Courses		21.0
		<i>Electrical Machines and Equipment</i>		<i>21.0</i>
1	EEM759	Special Operation Modes of Electrical Machines		9.0
2	EEM689	Mathematical Simulation of Magnetic Fields for Electrical Machines		6.0
3	EEM688	Optimization of Electrical Machines		9.0
4	EEM687	Fault Diagnostics and Forecast of Recourse of Electrical Commutation Apparatus		6.0
5	EEM686	Special Operation Modes of Electrical Apparatus		9.0
6	EEM685	Synthesis of Electronically Commutated Motors		10.0
7	EEM684	Transient Processes in the Alternating Current Electrical Machines		10.0
8	EEP609	Theory of Automation		10.0
9	EEM753	Numerical Methods and their Use in Electrical Engineering		6.0
C		Free Elective Study Courses		6.0
E		Final Examination		150.0
1	EEM009	Research Work		150.0

K.p.[*] kredītpunkti studiju programmas variantā