



RĪGAS TEHNISKĀ UNIVERSITĀTE

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Study programme "Computerised Control of Electrical Technologies"

Main attributes

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| Title | Computerised Control of Electrical Technologies |
| Identification code | EMO0 |
| Education classification code | 45522 |
| Level and type | Academic Master (Second 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 | Leonīds Ribickis |
| Professional classification code | |
| The type of study programme | Full time |
| Language | Latvian, English |
| Accreditation | 29.05.2013 - 30.06.2023; Accreditation certificate No 2020/40 |
| Volume (credit points) | 81.0 |
| Duration of studies (years) | Full time studies - 2,0 |
| Degree or/and qualification to be obtained | Master Degree of Engineering Science in Electrical Science |
| Qualification level to be obtained | The 7th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF) |
| Programme prerequisites | Bachelor Degree of Engineering Science in Electrical Science |

Description

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| Abstract | Within the framework of academic Master studies the students master field-specific theoretical and specialised subjects connected with development and design of different electrical technologies and the methods of their automation. On completion of the studies the students develop and defend a Master Thesis. On successful defence of the Thesis the students are awarded a Master degree in electrical engineering. |
| Aim | The aim of the academic Master studies is to provide Master level education in electrical engineering, to advance students' knowledge in economics and humanitarian subjects, to develop their skills in solving practical tasks in research and design of electrical technologies and to realize pedagogical work. |
| Tasks | The main objectives of academic Master studies are the following: -1 . to provide advanced knowledge on basic technologies in the field of electric power consumption; -2 . to develop understanding of electronic devices and systems elaboration principles; -3 . to develop practical skills in design and operation of the objects of computerised control; -4 . to enlarge knowledge in economics and social subjects; -5 . to develop scientific research skills. |
| Learning outcomes | The graduates are able: -to design and develop innovative systems of computer control for electro-technical equipment in any branch of economy; -to apply theoretical knowledge for solving of scientific problems; -to design and develop electronic devices, semiconductor power converters and electric drive systems; -to apply computers and software for designing activities, to compile software programmes for control of technology objects; - to apply skills and knowledge in the field of scientific investigation and pedagogical work; -to apply foreign language in the applied scientific field; -to summarize, analyze and prove the results of scientific work; -to complete reports on the research results and write scientific publications. The graduates obtain Master degree in Electrical Engineering. |
| Final/state examination procedure, assessment | Knowledge in a subject is evaluated by a lecturer responsible for this subject, by means of exam or test according to 10 grade scale. The least successful mark is 4 points. Five study subjects envisage the development of study projects (in curriculum they are marked with letter D). They are defended in the presence of tutors and the board and are evaluated with a mark. Defending of a qualification work, that is, the Master Thesis, is public. It is evaluated by an Examination Commission that consists of at least 3 professors, appointed by the faculty Dean. The volume of the Master Thesis is approximately 50 printed pages with text, schemes and figures. The paper should comprise an investigation of some electrical equipment operation as well as proposals for technical realization of such equipment (schemes, their descriptions, technical documentation of equipment); the formatting of the paper should meet the requirement set in RTU regulations. Each Master paper is evaluated by a reviewer and assessed by the supervisor of the work. |
| Description of the future employment | The graduates of the study programme can work at any enterprise as highly qualified specialists in the field of electrical technologies and their automation, as well as at scientific research institutions as junior scientific personnel and as teachers at educational institutions. |

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| Special enrollment requirements | Bachelor Degree in Electrical Engineering |
| Opportunity to continue studies | Doctoral study program, studies at professional Master program for obtaining an engineering degree. |

Courses

| No | Code | Name | Credit points |
|-----------|------------------------|---|---------------|
| A | | Compulsory Study Courses | 43.0 |
| 1 | EEP584 | Theory of Electronic Converters of Electrical Energy | 4.0 |
| 2 | EEP585 | Simulation of Electrical Processes | 5.0 |
| 3 | EEP574 | Commutated Converters | 5.0 |
| 4 | EEP572 | The Control Systems of Power Electronics Equipment | 5.0 |
| 5 | EEP570 | Elements of Automatics | 9.0 |
| 6 | EEP433 | Automated Electrical Drive | 3.0 |
| 7 | EEP524 | Design of Power Electronics Systems | 3.0 |
| 8 | EEP504 | Microprocessors - based Automation Systems | 3.0 |
| 9 | EEP582 | Control Technique with Microprocessor Controllers | 3.0 |
| 10 | EEP583 | Industrial Frequency Converters and Inverters | 2.0 |
| 11 | IDA700 | Basics of Labour Protection | 1.0 |
| B | | Compulsory Elective Study Courses | 14.0 |
| B1 | | Field-Specific Study Courses | 10.0 |
| 1 | EEP408 | Automated Electrotechnological Processes | 2.0 |
| 2 | EEP430 | Industrial Programmable Control Systems | 2.0 |
| 3 | EEP342 | Application of Computers in Electrical Equipment Design | 2.0 |
| 4 | EEP319 | Methods of Analysis and Calculation of Electronic Circuits | 2.0 |
| 5 | EEP458 | Typical Electrical Drive | 5.0 |
| 6 | EEP581 | Electro-Magnetic Compatibility in Industrial Electronic Equipment | 2.0 |
| 7 | EEP453 | Industrial Electronic Equipment | 4.0 |
| 8 | EEP345 | Unconventional Systems of Energy Conversion and Accumulation | 3.0 |
| 9 | EES162 | High Voltage Engineering | 3.0 |
| B2 | | Humanities and Social Sciences Study Courses | 2.0 |
| 1 | HSP483 | Industrial Relations | 2.0 |
| 2 | HSP488 | Business Sociology | 2.0 |
| 3 | HSP430 | Social Psychology | 2.0 |
| 4 | HSP446 | Pedagogy | 2.0 |
| B3 | | Economics and Management Study Courses | 2.0 |
| 1 | IUE217 | Business Economics | 2.0 |
| 2 | IUE308 | Entrepreneurship Planning | 2.0 |
| 3 | IRO313 | Organization of Production | 2.0 |
| C | | Free Elective Study Courses | 4.0 |
| E | | Final Examination | 20.0 |
| 1 | EEI002 | Master Thesis | 20.0 |
| 2 | EEL002 | Master Thesis | 20.0 |
| 3 | EEP002 | Master Thesis | 20.0 |