



RIGA TECHNICAL  
UNIVERSITY

# Doctoral/Master study program requirements in Latvia

2nd CBG Study Program Group meeting *21. March, Tartu*

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RTU HEP and AT Center

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# ECTS points:

- PhD288 ECTS including thesis - 225 ECTS
- Full-time Doctoral Studies is four years.
- Part-time Doctoral Studies last for five years
- UL - 216 ECTS including thesis - 165 ECTS
- RTU Master studies 120 ECTS – 30 – Thesis
- UL Master studies 120 ECTS – 20 – Thesis

# Evaluation done by:

- Grades
- Publications
- Conference participation
- Work experience
- Research project
- Student mobility

# Entry Requirements RTU - English

- **Undergraduate and Graduate degree** or other equivalent qualifications.
- If **English** is not your first language a student is required to achieve a minimum competency in the English language in order to commence a graduate program.
- Graduate programmes – IELTS - 6.5
- TOEFL\* - (PBT) - 580
- TOEFL\* - (CBT) - 220
- TOEFL\* - (IBT) - 90

# RTU – Electronics - PhD

<b>Title</b>	Electronics
<b>Identification code</b>	EDJ0
<b>Education classification code</b>	51523
<b>Level and type</b>	Doctoral Study
<b>Higher education study field</b>	Information Technology, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science
<b>Head of the study field</b>	Agris Nikitenko
<b>Deputy head of the study field</b>	Jurgis Poriņš
<b>Department responsible</b>	Faculty of Electronics and Telecommunications
<b>Head of the study programme</b>	Dmitrijs Pikuļins
<b>Professional classification code</b>	
<b>The type of study programme</b>	Full time
<b>Language</b>	Latvian
<b>Accreditation</b>	31.05.2013 - 30.05.2019; Accreditation certificate No 21
<b>Abstract</b>	Study program „Electronics“ consists of 15 credits of obligatory subjects, 21 credits obligatory choice subjects, 150 credits of research and 6 credits of free choice subjects.
<b>Aim</b>	Study program „Electronics“ envisages training of specialists of electronics for enterprises dealing with electronic systems and signal processing as well as specialists for corresponding research laboratories and research institutions.
<b>Tasks</b>	General tasks of study program: - to ensure competitive doctorate level education in electronics; - to guarantee the higher education in fundamental sciences linked with direction, to provide skills to formulate and to solve independently scientific and practical tasks, and knack to organize and to lead research work, to provide skills and experience necessary for pedagogical employment.
<b>Learning outcomes</b>	Graduates of program: - is able to create (to design, to implement and to adapt) essential engineering processes, - is capable to receive national and international recognition (with publications and patents) using original scientific ideas and to broaden technological possibilities and knowledge, - taking into account technological, social, short-term and economical restrictions, graduate is able to carry out critical analysis, evaluation and synthesis of new and complicated ideas, - graduate is able to make responsible decisions, to plan projects and to calculate necessary resources within international context, to communicate with colleagues, international scientific community and society about his/her ideas and experience, - graduate can promote (within academic and professional context) technological, social or cultural progress of knowledge based society.
<b>Final/state examination procedure, assessment</b>	The final examination is presentation of thesis (dissertation). The doctoral degree is awarded for independent promotional work (thesis), which contains original approved research results and provides new findings in chosen scientific field. The conformity of work is evaluated by the State scientific qualification committee, the experts of Latvian Science Council and the Promotional Council of corresponding scientific branch taking into account following criteria: completeness and novelty of investigations, conformity of content and volume of thesis, usage of advanced methods for analysis and data treatment, the presence of publications in peer reviewed international scientific issues, participation in international scientific conferences (seminars) and dissemination of results of investigation. Promotional Council makes decision by closed voting.
<b>Description of the future employment</b>	Research institutions, companies and academic institutions.
<b>Special enrollment requirements</b>	General tasks of study program: - to ensure competitive doctorate level education in electronics; - to guarantee the higher education in fundamental sciences linked with direction, to provide skills to formulate and to solve independently scientific and practical tasks, and knack to organize and to lead research work, to provide skills and experience necessary for pedagogical employment.
<b>Opportunity to continue studies</b>	N/A
	<b>[1] Program version with 192.0 credit points</b>
<b>Duration of studies (years)</b>	Pilna laika studijām - 4,0
<b>Programme prerequisites</b>	Master of Engineering
<b>Degree or/and qualification to be obtained</b>	Doctor of Engineering
<b>Qualification level to be obtained</b>	The 8th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
	<b>[2] Program version with 192.0 credit points</b>
<b>Duration of studies (years)</b>	Pilna laika studijām - 4,0
<b>Programme prerequisites</b>	Master of Engineering
<b>Degree or/and qualification to be obtained</b>	Doctor of Engineering

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# RTU – Electronics - PhD

## Electronics

### Description Courses

**Title** Electronics

**Identification code** EMJ0

**Education classification code** 45523

**Level and type** Academic Master Study

**Higher education study field** Information Technology, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science

**Head of the study field** Agris Nīkitenko

**Deputy head of the study field** Jūrgis Porņš

**Department responsible** Faculty of Electronics and Telecommunications

**Head of the study programme** Dmitrijs Pikuļins

**Professional classification code**

**The type of study programme** Full time

**Language** Latvian, English

**Accreditation** 31.05.2013 - 30.05.2019; Accreditation certificate No 21

**Abstract** The academic Master programme Electronics has orientation on training of the students for continuation of studies at the Doctoral programme as well as for work in all enterprises and organisations where highly educated specialists in electronics are needed. The programme consists of compulsory subjects which are taught to the extent necessary for deeper understanding of the courses in the major. The latter cover sufficiently large spectrum of different areas of electronics (courses of compulsory choice). From the list offered one can choose those necessary for students' further career. Programme includes also subjects of free choice. Particular attention at the programme is paid to the theory of electronics, to experiment techniques, to problems of design of electrical circuits and devices. A student may get acquainted with the programme approved by the Senate of RTU and respective semester plans at the website of RTU [www.rtu.lv](http://www.rtu.lv) in the section "Studies". The programme ends with the elaboration of Master Thesis and its defence.

**Aim** The aim of the programme is to prepare academically educated specialists in electronics who can continue studies at the Doctoral programme, who can start work in higher education institutions, in state institutions where Master level knowledge in electronics is necessary as well as in enterprises dealing with production of electronic equipment and its maintenance.

**Tasks** The tasks of the programme are:

- According to the requirements of Master studies to acquire knowledge in exact subjects and on significantly higher level in fundamental subjects of the major;
- To acquire skills of individual work with CAD systems in the course of elaboration of corresponding projects;
- To acquire knowledge in the newest directions of electronics and to understand them;
- To acquire knowledge necessary for beginning of pedagogical work as well as economic and sociological knowledge necessary for work in other areas of economy;
- To acquire skills of scientific work and the ability to carry out research in the area chosen;
- To prepare and to defend the Master Thesis.

**Learning outcomes** Knowledge in the chosen area of electronics is acquired at deeper and more comprehensive level compared to that of the Bachelor programme.

Skills in work with CAD systems are acquired

Skills associated with elaboration of projects (including economic aspects) are acquired

Knowledge about the tendencies in development of electronics and its main directions is acquired

Knowledge necessary for beginning of pedagogical work is acquired

Final examination occurs according to regulations approved by RTU Senate.

**Final/state examination procedure, assessment** Final examination which includes the defense of Bachelor Thesis is evaluated by examination commission consisting of the head of the structural unit responsible for implementation of the study programme or professor or associated professor of the same structural unit appointed by the head and at least two experts of the branch with PhD degree who can be invited also from other structural units. The members of commission are approved by the Dean of the Faculty. The thesis is evaluated also by a reviewer. Evaluation according to ten-grade system.

**Description of the future employment** Can work in every enterprise and organisation as highly qualified specialist in Electronics, in scientific institutions related to Electronics as junior research personnel, in education institutions as a teacher

**Special enrollment requirements** The tasks of the programme are:

- According to the requirements of Master studies to acquire knowledge in exact subjects and on significantly higher level in fundamental subjects of the major;
- To acquire skills of individual work with CAD systems in the course of elaboration of corresponding projects;
- To acquire knowledge in the newest directions of electronics and to understand them;
- To acquire knowledge necessary for beginning of pedagogical work as well as economic and sociological knowledge necessary for work in other areas of economy;
- To acquire skills of scientific work and the ability to carry out research in the area chosen;
- To prepare and to defend the Master Thesis.

**Opportunity to continue studies** Doctoral study programme, professional Master study programme

**Volume (credit points)** 80.0

**Duration of studies (years)** Pilna laika studijām - 2,0

**Programme prerequisites** Bachelor Degree of Engineering Science in Electrical Science

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<b>Programme code</b>	34306
<b>Field of study</b>	Physics, Material Science, Mathematics and Statistics
<b>Faculty</b>	Faculty of Physics, Mathematics and Optometry
<b>Degree awarded</b>	Doctor of Physics
<b>Programme director</b>	Mārcis Auziņš
<b>Credits</b>	144 KP or 216 ECTS
<b>Study duration</b>	<b>full-time</b> 6 Semesters
<b>Tuition fee starting Autumn semester, 2018</b>	Tuition fee per year - 2134 EUR
<b>Number of students accepted each year</b>	Autumn semester 2018 <b>State -funded study places- 12</b>
	Autumn semester 2018 <b>Study places for tuition fee - 0</b>
<b>Start of studies</b>	Autumn 2019
<b>Language of instruction</b>	Latvian

## UL – Physics - PhD

[https://www.lu.lv/en/nc/studies/study-process/courses/programme-search/?tx\\_lustudycatalogue\\_pi1%5Bprogram%5D=34306&tx\\_lustudycatalogue\\_pi1%5Baction%5D=detail&tx\\_lustudycatalogue\\_pi1%5Bcontroller%5D=Course&cHash=31ec940552e1fdf8f967f270ecf8599d](https://www.lu.lv/en/nc/studies/study-process/courses/programme-search/?tx_lustudycatalogue_pi1%5Bprogram%5D=34306&tx_lustudycatalogue_pi1%5Baction%5D=detail&tx_lustudycatalogue_pi1%5Bcontroller%5D=Course&cHash=31ec940552e1fdf8f967f270ecf8599d)

<b>Programme code</b>	21006
<b>Field of study</b>	Physics, Material Science, Mathematics and Statistics
<b>Faculty</b>	Faculty of Physics, Mathematics and Optometry
<b>Degree awarded</b>	Master of Natural Sciences in Physics
<b>Access to further studies</b>	Access to doctoral studies
<b>Programme director</b>	Sandris Lācis
<b>Credits</b>	80 KP or 120 ECTS
<b>Study duration</b>	<b>full-time</b> 4 Semesters
<b>Tuition fee starting Autumn semester, 2018</b>	Tuition fee per year - 2000 EUR
<b>Number of students accepted each year</b>	Autumn semester 2018 <b>State -funded study places- 25</b>
	Autumn semester 2018 <b>Study places for tuition fee - 20</b>
	Minimum number of students - 10
<b>Start of studies</b>	Autumn 2019
<b>Language of instruction</b>	Latvian

## UL – Physics - Master

[https://www.lu.lv/en/nc/studies/study-process/courses/programme-search/?tx\\_lustudycatalogue\\_pi1%5Bprogram%5D=21006&tx\\_lustudycatalogue\\_pi1%5Baction%5D=detail&tx\\_lustudycatalogue\\_pi1%5Bcontroller%5D=Course&cHash=1f377d3c4f9b6de1b335eb68871001a3](https://www.lu.lv/en/nc/studies/study-process/courses/programme-search/?tx_lustudycatalogue_pi1%5Bprogram%5D=21006&tx_lustudycatalogue_pi1%5Baction%5D=detail&tx_lustudycatalogue_pi1%5Bcontroller%5D=Course&cHash=1f377d3c4f9b6de1b335eb68871001a3)



**Thank you**