



RĪGAS TEHNISKĀ UNIVERSITĀTE

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Study programme "Electronics and Mobile Communication"

Main attributes

Title	Electronics and Mobile Communication
Identification code	EBM0
Education classification code	43523
Level and type	Academic Bachelor (First Cycle) Studies
Higher education study field	Information Technology, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science
Head of the study field	Agris Nikitenko
Deputy head of the study field	Jurģis Poriņš
Department responsible	Institute of Microwave Engineering and Electronics
Head of the study programme	Dmitrijs Pikuļins
Professional classification code	
The type of study programme	Full time, Extramural
Language	Latvian, English
Accreditation	31.05.2013 - 30.06.2023; Accreditation certificate No 2020/80
Volume (credit points)	120.0
Duration of studies (years)	Full time studies - 3,0; Extramural - 4,0
Degree or/and qualification to be obtained	Academic Bachelor Degree of Engineering Science in Electrical Science
Qualification level to be obtained	The 6th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	General Secondary Education or 4-year Vocational Secondary Education

Description

Abstract	The programme comprises the courses on fundamental sciences –mathematics, physics, and chemistry, understanding of which is mandatory for Electronics, courses on computer literacy and application of computers in Electronics, courses on fundamentals of Electronics – circuit theory; signal theory, electrodynamics and electron devices. Understanding of the latter is necessary in order to be able to design analogue and digital devices, to understand the operation of modern electronic systems such as radio systems and those of image transmission. The programme comprises also humanitarian subjects and subjects of free choice.
Aim	To provide basic academic education in Electronics and to prepare for further studies in the major at academic or professional master programme
Tasks	At the lectures, seminars, study projects, laboratory works and through the studies of literature: •To acquire and strengthen the knowledge in foundations of fundamental subjects - –mathematics, physics, chemistry necessary for further studies of theoretical subjects of Electronics; •To provide knowledge in fundamental subjects of Electronics (electrical circuits, signals, electron devices, electrodynamics) necessary for acquisition of knowledge in major subjects and innovations in electronics.
Learning outcomes	Alumni of the programme: •are familiar with the methods of analysis and operation of electronic devices, are able to perform such analysis by means of computer and respective software; •are able to use the acquired theoretical knowledge for formulation and solution of concrete problems in electronics and related areas; •are able to carry out the analysis of the state of the art of some problem related to electronics on the basis of literature studies and information available on the net; •Know how to plan and perform experiments in investigation of operation of electronic circuits and devices; •Understand the role of lifelong learning, are able to plan and improve their qualification; •Have the necessary presentation skills.
Final/state examination procedure, assessment	Final examination which includes the defence of Bachelor Thesis is evaluated by examination commission consisting of the head of the structural unite responsible for implementation of the study programme or professor or associated professor of the same structural unite 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.
Description of the future employment	The knowledge acquired allows alumni of the study programme to start work in electronics enterprises which design and produce devices and equipment where many purpose electronic components are used; in organisations which operate in the field of computer applications, processing and transmission of information, automation, exploitation of every day techniques; exploitation of medical equipment. Alumni can be involved in design and production of different systems and components, their experimental control, exploitation and maintenance of different electronic systems.
Special enrollment requirements	Enrolment occurs according to Regulations of enrolment formulated by RTU for the current study year and available at www.rtu.lv : the enrolment in full time basic study programmes occurs according to the tender on the basis of results of centralised exams.

Opportunity to continue studies	For alumni it is possible to continue the studies in academic or professional Master programmes. For enrolment it is necessary to have a Bachelor degree in electrical engineering.
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Courses

No	Code	Name	Credit points
A		Compulsory Study Courses	71.0
1	DMF101	Mathematics	9.0
2	MFA101	Physics	6.0
3	RRE102	Electricity and Magnetism	2.0
4	DIM205	Supplementary Mathematics (for electrical engineering)	2.0
5	DMS212	Probability Theory and Mathematical Statistics	2.0
6	REA103	Fundamentals of Materials Science	2.0
7	RTR105	Computer Studies (basic course)	3.0
8	RTR207	Computerization of Mathematical Tasks in Electrical Engineering	3.0
9	RTR220	Basics of Signal Theory	4.0
10	REA204	Electron Devices	3.0
11	REA304	Analogue Equipment	5.0
12	RTR307	Electrodynamics and Vector Analysis	4.0
13	RAE261	Digital Electronics and Computer Architecture	3.0
14	RAE362	Digital Devices and Systems	3.0
15	RRI324	Digital Signal Processing	2.0
16	ICA301	Civil Defence	1.0
17	SDD701	Innovative Product Development and Entrepreneurship	4.0
18	RTR807	Circuit Theory (special course)	4.0
19	RTR805	Fundamentals of DC Circuits	2.0
20	RTR806	Fundamentals of AC Circuits	3.0
21	RDE710	Introduction to Electronics and Telecommunications Branch	4.0
B		Compulsory Elective Study Courses	35.0
B1		Field-Specific Study Courses	30.0
1	RTR306	Anologue Electronics	5.0
2	RRI349	Anologue and Digital Integrated Circuits	3.0
3	RTR218	Application of Computers in Electronics	3.0
4	REA402	Power Electronics Equipment	2.0
5	RTR247	Nonliner Circuits	5.0
6	RDE709	Electrical Measurements in Telecommunications	4.0
7	RTR108	Computer Studies (special course)	2.0
8	REA710	Design of Printed Circuit Boards	4.0
9	RRI703	Fundamentals of Mobile Communication Systems	7.0
10	REA202	Electrical Measurements	3.0
11	REA711	Fundamentals of Digital Electronic Systems Design using HDL	3.0
12	REA712	Fundamentals of Digital Electronic Systems Design using HDL (study project)	2.0
13	RTR244	Numerical Methods of Computer Aided Design	3.0
14	RTR701	Laboratory Exercises in Electronics	3.0
15	RRI323	Transmission of Images	2.0
16	REA701	Embedded Systems Architecture	3.0
17	REA702	Peripheral Devices in Embedded Systems	3.0
18	REA706	Basics of Transducers of Non-electrical Quantities	3.0
19	RRI405	Electroacoustics	2.0
B2		Humanities and Social Sciences Study Courses	2.0
1	HSP380	United Europe and Latvia	2.0
2	HFL336	Basic Ethics	2.0
3	HSP379	Political System of Latvia	2.0
4	HSP376	Sociology of Personalities and Small Groups	2.0
5	HSP375	Sociology of Management	2.0
6	HSP377	General Sociology	2.0
7	HSP700	The History of Technical Sciences	2.0
8	HPS120	Basics of Communication	2.0
B6		Languages	3.0
1	HVD101	The English Language	2.0
2	HVD230	The English Language	1.0
3	HVD108	The German Language	2.0
4	HVD226	The German Language	1.0
5	HVD119	The French Language	2.0

C		Free Elective Study Courses	4.0
E		Final Examination	10.0
1	RTR001	Bachelor Thesis	10.0