each second-year student conducts and presents his or her own student project. In the third year, specializations in five major fields - Radio Communication Technologies, Electronics, Electronic and Computer Engineering, Control Engineering and Automation, and Electrical Power Engineering are introduced through mandatory and elective courses, which provide some practical knowledge for students who will not continue to the second level of study. Some knowledge about ecology and law is also given. In the 5th semester, to increase project management and teamwork competences, projects are completed of 6-8 students. In the 6th semester, the bachelor thesis must be completed and publicly defended.

The first-cycle graduates have:

KNOWLEDGE AND UNDERSTANDING OF

— Appropriate mathematical principles and techniques underlying electrical engineering and information technology including linear algebra, calculus, vector calculus and integral transforms;
— The scientific principles underlying electrical engineering and information technology systems;
— The key aspects and concepts of electrical engineering including circuit and field theory, electronics, signals and systems, electrical energy technology, and automatic control;
— The key aspects and concepts of information technology including digital logic, programming, algorithms and data structures, computer architecture, communication systems, and information theory;
— The branch of electrical engineering and information technology based on the knowledge and understanding of fundamental principles given in common courses, as well as some forefront of a branch focused on in specialization courses;
— The social, ethical, business and legal context of engineering.

ENGINEERING ANALYSIS ABILITIES

— The ability to apply gained knowledge and understanding to identify, formulate and solve engineering problems;
— The ability to apply gained knowledge and understanding in the analysis of electrical engineering and information technology products, processes and methods;
— The ability to select and apply relevant analytic and modeling methods and to program a computer to solve the problem.

ENGINEERING DESIGN ABILITIES

— The ability to apply their knowledge and understanding to develop and realize a design to meet defined and specified requirements;
— An understanding of design methodologies in electrical engineering and information technology, and the ability to use appropriate mathematical methods or information technology tools.

INVESTIGATIONS ABILITIES

— The ability to conduct searches of literature, and to use databases and other sources of information;
— The ability to design and conduct appropriate experiments in electrical engineering and information technology, to interpret the data and to draw conclusions;
— Workshop and laboratory skills to use relevant laboratory equipment and to analyze the results critically.

ENGINEERING PRACTICE

— Students learn to select and apply appropriate scientific principles, mathematical and computer based methods for analyzing general electric engineering and information technology systems;
— They gain the ability to combine theory and practice to solve problems in electric engineering and information technology;
— They develop an understanding of applied techniques and methods, as well as an understanding of their limitations;
— They develop an awareness of the social impacts of engineering practice.

TRANSFERABLE SKILLS

— The ability to function effectively as an individual or as a member of a team, and to present the work both in written and oral form;
— The ability to use diverse methods to communicate effectively with the engineering community and with society at large;
— An awareness of the health, safety, legal issues and responsibilities of engineering practice, the impact of engineering solutions in a societal and environmental context, and commitment to professional ethics and responsibilities, as well as the norms of engineering practice;
— An awareness of project management and business practices, and the ability to utilize project management methods;
— The ability to recognize the need for further learning, and the ability to engage in independent, life-long learning.

4.3

programme details

	hours	ECTS credits	date of examination	grade	subject
1	90	7.0	17.1.2011.	4	Mathematics 1
2	15	1.0	17.1.2011.	+	Laboratory and Skills - Mathematica
3	90	7.0	10.1.2011.	5	Fundamentals of Electrical Engineering
4	75	6.0	21.1.2011.	4	Digital Logic
5	75	6.0	14.1.2011.	5	Programming and Software Engineering
6	30	3.0	19.1.2011.	3	Skills of Communication
7	30	0.0		+	Physical Education 1
8	90	7.0	15.6.2011.	5	Mathematics 2
9	15	2.0	21.6.2011.	+	Laboratory and Skills - Autocad
10	90	6.0	20.6.2011.	4	Physics 1
11	75	6.0	13.6.2011.	5	Algorithms and Data Structures
12	75	6.0	17.6.2011.	4	Computer Architecture 1
13	30	3.0	27.6.2011.	4	Management in Engineering
14	30	0.0		+	Physical Education 2
15	90	6.0	30.1.2012.	3	Physics 2
16	90	7.0	8.2.2012.	2	Electronics 1
17	90	7.0	23.1.2012.	3	Electrical Circuits
18	30	3.0	9.2.2012.	3	Quality Management
19	30	0.0		+	Physical Education 3
20	16	2.0	30.1.2012.	+	Laboratory and Skills - Matlab
21	75	5.0	1.2.2012.	3	Mathematics 3 - EE
22	75	6.0	6.7.2012.	3	Signals and Systems
23	30	3.0	11.6.2012.	4	Seminar
24	30	0.0		+	Physical Education 4
25	45	4.0	7.9.2012.	2	Economics and Managerial Decision Making
26	90	6.0	28.6.2012.	2	Electromagnetic Fields
27	75	6.0	19.9.2012.	2	Energy Technology
28	75	5.0	11.6.2012.	2	Probability and Statistics
29	30	2.0	20.2.2013.	2	Sustainable Development and Environment
30	75	5.0	28.1.2013.	2	Automatic Control
31	—	6.0	11.2.2013.	5	Project
32	87	4.0	8.9.2015.	2	Transmission and Distribution of Electric Power
33	45	4.0	1.9.2015.	5	Methods of Measurement
34	45	4.0	29.6.2015.	2	Technical Standardization and Legislative
35	45	4.0	15.6.2015.	4	Metrology Fundamentals
36	60	4.0	8.2.2016.	3	Information Theory
37	90	4.0	23.2.2016.	3	Electric Facilities
38	30	2.0	9.9.2016.	3	Commercial Law
39	—	12.0	11.7.2016.	5	BSc Thesis
40	75	5.0	10.2.2017.	2	Electronic Communications
41	80	4.0	5.9.2017.	2	Electromechanical and Electrical Conversion

additional ECTS credits

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total ECTS credits 180

beginning of the study–end of the study 1 October 2010–5 September 2017

diploma number 4818

graduation thesis; mentor; defended on Design of structures for installation of photovoltaic systems; Full Professor Igor Kuzle, PhD; 11 July 2016