Course title: ELECTRICAL ENGINEERING (Annex No. 1 to the Regulation No. 33/11/12)
Level of studies: 2nd cycle of higher education (MSc programme)
Profile of studies: general academic

Learning outcomes for the field of Electrical Engineering Code	Field of study learning outcomes	Reference to learning outcomes for the area of technical sciences
KNOWLEDGE		
K2A_W1	The graduate has broader and deepened knowledge of selected fields of mathematics and physics	T2A_W01
K2A_W2	The graduate has deepened and theoretically grounded knowledge in the field of numerical solving of algebraic and differential equations	T2A_W01 T2A_W02 T2A_W04
K2A_W3	The graduate has deepened and theoretically supported knowledge in the field of electrical engineering	T2A_W02 T2A_W04
K2A_W4	The graduate has knowledge of development trends and the most important new achievements in the field of electrical engineering	T2A_W05
K2A_W5	The graduate has deepened and theoretically grounded knowledge in the field of electrodynamics	T2A_W01 T2A_W02 T2A_W04 T2A_W07
K2A_W6	The graduate has knowledge of drive systems	T2A_W02 T2A_W04 T2A_W07
K2A_W7	The graduate has deepened knowledge of measuring techniques and instruments	T2A_W02 T2A_W04 T2A_W07
K2A_W8	The graduate understands the causes and knows the effects of disturbances in power systems	T2A_W02 T2A_W04 T2A_W07
K2A_W9	The graduate knows the structure and properties of complex electric devices and systems for the studied specialization and understands the principle of their operation	T2A_W02 T2A_W04 T2A_W07
K2A_W10	The graduate knows basic methods, materials, their properties and tools used for solving complex engineering tasks from the field of the studied specialization	T2A_W02 T2A_W04 T2A_W07
K2A_W11	The graduate has knowledge in the field of management, including the quality management and conducting economic activity	T2A_W09
K2A_W12	The graduate knows typical engineering technologies in the field of electrical engineering	InzA_W05
SKILLS		
1) general skills (unrelated to the field of engineering education) T2A_U01÷06 (bez U04)		
K2A_U1	The graduate can obtain information from literature, data bases and other sources; can integrate the acquired information, make interpretation and critical evaluation of this information, draw conclusions as well as formulate and thoroughly justify opinions	T2A_U01

K2A_U2	The graduate can communicate with the use of different techniques in a professional environment and other environments, also in foreign language	T2A_U02
K2A_U3	The graduate is able to develop a detailed documentation of the results of realization of an experiment, design or research task; can prepare a paper containing the discussion of these results; is able to prepare a brief scientific report in foreign language	T2A_U03
K2A_U4	The graduate can determine directions of further professional development and implement a process of self-education	T2A_U05
K2A_U5	The graduate has a command of technical English in scientific disciplines appropriate for a given field of studies	T2A_U06
2) basic engineering skills T2A_U07÷14 (bez U07÷08,U13÷14)		
K2A_U6	The graduate can use analytic, simulation and experimental methods for formulating and solving engineering tasks and simple research tasks	T2A_U09
K2A_U7	The graduate can, when formulating and solving engineering tasks concerning modelling and design of electric devices, circuits and systems, integrate the knowledge from different scientific disciplines, using the systemic approach taking into account non-technical aspects	T2A_U10
K2A_U8	The graduate is able to formulate and, using appropriate analytical, simulation and experimental tools, test hypotheses associated with modelling and design of electric devices and circuits	T2A_U11
K2A_U9	The graduate can assess the usefulness and possibility of using new achievements concerning materials, elements, devices, circuits, methods for design of electric devices, circuits and systems, containing innovative solutions	T2A_U12
3) skills directly related to solvong engineering tasks T1A_U15÷19 (bez U15)		
K2A_U10	The graduate is able to propose modifications to existing design solutions of electric circuits and systems	T2A_U16
K2A_U11	The graduate can identify and formulate the specification of complex engineering tasks, typical for electrical engineering, when taking into account their non-technical aspects	T2A_U17
K2A_U12	The graduate is able to assess the usefulness of the known methods and tools for solving complex engineering tasks, typical for electrical engineering, in this to recognize the limitations of these methods and tools	T2A_U18
K2A_U13	The graduate can, also using new methods, solve complex engineering tasks form the field of electrical engineering, including the tasks containing research components	T2A_U18
K2A_U14	The graduate can design electric devices, circuits and systems when taking into account the given utility and economic criteria, if necessary adapting existing or developing new design methods or computer-aided design tools	T2A_U19
SOCIAL COMPETENCIES		
K2A_K1	The graduate can think and act in a creative and enterprising way	T2A_K06

K2A_K2	The graduate understands the need of formulating and sharing with the society, i.a. through the mass media, information and opinions about the achievements of technology and other aspects of engineering activities; he/she does his best to communicate such information and opinions in a comprehensive way, presenting different points of view	T2A_K07