COURSE DESCRIPTION CARD

Faculty of Electrical Engineering									
Field of study	**Electrical and Electronic Engineering**							**Degree level and programme type**	**Bachelor's degree**
Specialization/ diploma path	**-**							**Study profile**	**-**
Course name	**Application of Computer Science in Electrical Engineering**							**Course code**	**IS-FEE-10039W**
								Course type	**elective**
Forms and number of hours of tuition	**L**	**C**	**LC**	**P**	**SW**	**FW**	**S**	**Semester**	**winter**
					30			**No. of ECTS credits**	**4**
Entry requirements	**Electrical Circuits 1 and 2**								
Course objectives	To receive the abilities to use the specific software for the analysis of electrical circuits.. To verify the correctness of the reciving results that have to be properly interpreted. Student discuss problems by using good terminology and on the base on elaborated reports.								
Course content	Introduction to the PSpice/Micro Cup software. DC, AC and frequency analysis of branched circuits.. Numerical analysis of transient states. Interpretation of results.. Monte Carlo method and parametric analysis. Non-linear circuits. Analysis and processing of measuring data by means of spreadsheet.								
Teaching methods	problem-based learning, reports, consultations, self-work								
Assessment method	**Partial evaluations after a few sessons based on problem solving. The evaluations are providing to verify the ability of solving the problems concerning all indicated topics.**								

Symbol of learning outcome	**Learning outcomes**	**Reference to the learning outcomes for the field of study**
LO1	is able to use the software dedicated for electrical circuits analysis	
LO2	can estimate the correctness of numerical analysis results the electrical features and parameters of basic elements of electric circuits	
LO3	analise the DC and AC circuit with the use of PC software	
LO4	applies numerical methods for the analysis of electrical circuits	
LO5	elaborates the reports containing practical conclusions	

Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	evaluating the student's solutions of presented problems, personal assessment on the base of partial evaluations	
LO2	evaluating the student's solutions of presented problems, personal assessment on the base of partial evaluations	

LO3	evaluating the student's solutions of presented problems, personal assessment on the base of partial evaluations	
LO4	evaluating the student's solutions of presented problems, personal assessment on the base of partial evaluations	
LO5	evaluating the quality of student's report	
Student workload (in hours)		**No. of hours**
Calculation	attending the class sessions	**30**
	self-working on learning and preparing the problems solutions	**30**
	preparation for and participation in evaluations	**15**
	elaboration of reports	**25**
	participation in student-teacher sessions related to the classes and lecture	**5**
	TOTAL:	**105**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	**35**	**1,5**
Student workload – practical activities	**105**	**4**

Basic references	**1**. Thomas R.E., Rosa A. J., Toussaint G.J.: The Analysis & Design of Linear Circuits. 6th ed, Wiley Inc. 2009; 2. http://opu.ua/upload/files/summerschool/Pages_from_circuitsbook1.pdf 3. Ch. K. Alexander, M. N. O. Sadiku: Fundamentals of Electric Circuits http://web.uettaxila.edu.pk/CMS/AUT2014/eeLCAbs/notes/Fundamentals%20of%20Electric%20Circuits%204th%20ed%20Alexander.pdf
Supplementary references	1. https://sites.google.com/a/dimokijul.site/ralfniko/pspice-manual-for-electric-circuits-fundamentals

Organisational unit conducting the course	**Department of Electrotechnics, Power Electronics and Power Engineering**	**Date of issuing the programme**
Author of the programme	**Jaroslaw Makal, Ph.D. Eng.**	**21.01.2020**

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar