

## COURSE DESCRIPTION CARD – SPECIMEN

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	Vector, Raster Computer Graphics and Visualization							Course code	IS-FEE-10067S	
								Course type	elective	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	summer	
				30				No. of ECTS credits	3	
Entry requirements	Introduction to Information Technology									
Course objectives	To provide the students with knowledge of computer graphics and visualization. The student will learn how to use Corel Graphics Suite programs (Corel Draw – for vector graphics and Corel Photo Paint – for raster graphics) and Adobe Photoshop (for raster graphics). The student will learn how to use SolidWorks (with toolboxes SW PhotoView 360 and SW Visualize) for visualization 3D objects. The practical skills will allow for self-realization of 2D and 3D computer graphics for didactic and technical purposes.									
Course content	Using programs for designing and editing vector and raster graphics (CorelDraw, Corel Photo-Paint, Adobe Photoshop) and engineering environment for creating visualization 3D graphics (SolidWorks with toolboxes PhotoView 360 and SW Visualize). Students will be perform graphical project of the multifaceted advertising campaign for new technical product in the form of the book of visual identification. To development a final project will be using vector and raster 2D computer graphics and technics of modelling, texturing and rendering 3D graphics.									
Teaching methods	Project: work in groups, homework assignments Self-study under supervision: tutorial sessions with worked examples									
Assessment method	Elaboration of project + observation of work during classes									
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study		
LO1	Student: is able to characterize basic of design vector and raster 2D computer graphics and methods of solid modelling 3D object									
LO2	is able to create 2D vector graphics in Corel Draw program									
LO3	is able to create 2D raster graphics in Corel Photo Paint and Adobe Photoshop programs									
LO4	is able to basis modelling 3D in SolidWorks and technics of visualization object with textures, lights, shadows, cameras									

<b>L05</b>	is able to rendering 3D object in SolidWorks PhotoView 360 and SW Visualize	
<b>L06</b>	is able to work in groups	
<b>Symbol of learning outcome</b>	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
<b>L01</b>	Elaboration of project + observation of work during classes	P
<b>L02</b>	Elaboration of project + observation of work during classes	P
<b>L03</b>	Elaboration of project + observation of work during classes	P
<b>L04</b>	Elaboration of project + observation of work during classes	P
<b>L05</b>	Elaboration of project + observation of work during classes	P
<b>L06</b>	Elaboration of project + observation of work during classes	P
<b>Student workload (in hours)</b>		<b>No. of hours</b>
<b>Calculation</b>	participation in classes work	30
	preparation for projects	35
	working on individual project task	10
	participation in student-teacher sessions related to project	2
	<b>TOTAL:</b>	<b>77</b>
<b>Quantitative indicators</b>		<b>HOURS</b>
		<b>No. of ECTS credits</b>
<b>Student workload – activities that require direct teacher participation</b>		<b>30</b>
<b>Student workload – practical activities</b>		<b>77</b>
<b>Basic references</b>	1. Blundel B.G. (2008), An Introduction to Computer Graphics and Creative 3-D Environments, SPRINGER 2. Kipphan H. (2001), Handbook of Print Media, SPRINGER 3. Hughes J.F., Feiner S.K., Foley J.D., Akeley K., McGuire M., Dam A.V., Sklar D.F. (2013) Computer graphics: principles and practice.	
<b>Supplementary references</b>	1. Vince J. (2004) Geometry for Computer Graphics: Formulae, Examples and Proofs, Springer 2. Hearn D., Baker P. (2007) Computer Graphics, Prentice Hall, New Delhi 3. Kiciak P. (2000) Basis of modelling curves and planes, using in computer graphics, WNT, Warsaw (in Polish) 4. Internet, <a href="http://wikipedia.org">http://wikipedia.org</a>	
<b>Organisational unit conducting the course</b>	<b>Department of Automatic Control and Robotics</b>	<b>Date of issuing the programme</b>
<b>Author of the programme</b>	<b>Ph.D., Eng. Roman Trochimczuk</b>	<b>18-02-2020</b>

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

S – seminar