Kielce University of Technology

FACULTY OF MECHATRONICS AND MECHANICAL ENGINEERING

Annex 9
to the Rector's Ordinance No. 35/19
of 12 June 2019

COURSE SPECIFICATION

Course code	**M#1-S1-ME-307**
Course title in Polish	**Komputerowy zapis konstrukcji**
Course title in English	**Computer Aided Engineering Drawing**
Valid from (academic year)	**2019/2020**

GENERAL INFORMATION

Programme of study	**MECHANICAL ENGINEERING**
Level of qualification	**first-cycle**
Type of education	**academic**
Mode of study	**full-time**
Specialism	**all**
Department responsible	**Department of Machine Design**
Course leader	**Robert Molasy, BEng, PhD**
Approved by	

COURSE OVERVIEW

Course type	**basic**
Course status	**compulsory**
Language of instruction	English
Semester of delivery	**semester 3**
Pre-requisites	**Technical drawing, Fundamentals of Standardization and Innovation**
Examination required (YES/NO)	NO
ECTS value	**2**

Mode of instruction	**lecture**	**class**	**laboratory**	**project**	**seminar**
No. of hours per semester	**10**		**20**		

LEARNING OUTCOMES

Category of outcome	Out-come code	Course learning outcomes	Corresponding programme outcome code
Knowledge	W01	They will have knowledge of computer-aided technologies used to design and manufacture machines and mechanical systems.	MiBM1_W05
	W02	They will know how to develop and analyse technical documentation, which involves engineering design using graphics and calculation software.	MiBM1_W12
	W03	Will have the knowledge of the principles of designing machine parts and mechanical structures used in mechanics and machine design, and knows the rules for their selection and safety assessment.	MiBM1_W19
Skills	U01	Will be able to obtain information from literature, databases, and other sources in various languages, concerning mechanics and machine design; can combine the obtained information, analyze, interpret, and draw conclusions, formulate and justify opinions.	MiBM1_U03
	U02	They will be able to use the basic forms of communication for mechanical engineering purposes, especially for machine design, operation and maintenance such as technical drawings, computer algorithms and mathematical description.	MiBM1_U07
Competence	K01	They will be aware of and understand the relationships between engineering and non-engineering activities, including their impact on the environment and the responsibility for decision-making	MiBM1_K02

COURSE CONTENT

Type of instruction*	Topics covered
lecture	1. Presentation of the Solidworks environment
	2.Presentation of sketching environment and its features. Dimensioning of sketches. Problem of fully defined sketch.
	3. Presentation of 3D features.
	4. Modifications of 3d features.
	5. Application of toolboxes (creation of holes), arrays.
	6. Presentation of 2D drawing environment and its features.
	7. Setting dimensioning parameters. Rules of dimensioning
	8. Defining the surface roughness and tolerances
	8. Defining DG&T
	10. Test
laboratory	1. Presentation of the SolidWorks environment. Basic options for creating a sketch.
	2. Application of Extruded Boss/Base, Extruded Cut, Revolved Boss/Base, Revolved Cut for the simple parts.
	3. Creation of a 3D part.
	4. Application of Section View, Broken-out Section.
	5. Drawing of a threaded part
	6. Half section
	7. Partial section, broken-out section
	8. Drawing of a gear
	9. Drawing of a shaft
	10. Test

*) Please delete rows in the table above that are not applicable.

ASSESSMENT METHODS

Outcome code	Methods of assessment *(Mark with an X where applicable)*					
	Oral examination	Written examination	Test	Project	Report	Other
W01			X	X		
W02			X	X		
W03			X	X		
U01			X	X		
U02			X	X		
K01						X

ASSESSMENT TYPE AND CRITERIA

Mode of instruction*	Assessment type	Assessment criteria
lecture	**non-examination assessment**	Development of a 3D model and a technical drawing for this part.
laboratory	non-examination assessment	Regular class attendance. A pass mark for each in-class assignment. The pass mark is a minimum of 50% for the class assignments.

*) Please delete rows in the table above that are not applicable.

OVERALL STUDENT WORKLOAD

ECTS weighting								
	Activity type	**Student workload**					**Unit**
1.	Scheduled contact hours	L	C	Lab	P	S	h
		10		20			
2.	Other contact hours (office hours, examination)	2		2			h
3.	**Total number of contact hours**	**34**					h
4.	**Number of ECTS credits for contact hours**	**1.4**					ECTS
5.	**Number of independent study hours**	**16**					h
6.	**Number of ECTS credits for independent study hours**	**0.6**					ECTS
7.	**Number of practical hours**	**33**					h
8.	**Number of ECTS credits for practical hours**	**1.3**					ECTS
9.	**Total study time**	**50**					h
10.	**ECTS credits for the course** *1 ECTS credit = 25-30 hours of study time*	**2**					ECTS

READING LIST

1. James D. Bethune, Engineering Design and Graphics with SolidWorks® 2016, Pearson Education, Inc., 2017
2. F. E. Giesecke, S. Lockhart, M. Goodman,C.M. JOHNSONTechnical drawing with engineering graphics, Pearson Education, Inc., 2016.

3. G. Jankowski,R. Doyle, SolidWorks® For Dummies, Wiley, 2011