Kielce University of Technology

FACULTY OF MECHATRONICS AND MECHANICAL ENGINEERING

COURSE SPECIFICATION

Course code	**M#1-S1-ME-505**
Course title in Polish	**Komputerowe wspomaganie projektowania**
Course title in English	**Computer Aided Design**
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	**Urszula Janus-Gałkiewicz, BEng, PhD**
Approved by	

COURSE OVERVIEW

Course type	**basic**
Course status	**compulsory**
Language of instruction	English
Semester of delivery	**semester 5**
Pre-requisites	**Computer-Aided Engineering drawing, Machine Design**
Examination required (YES/NO)	NO
ECTS value	**2**

Mode of instruction	lecture	class	laboratory	project	seminar
No. of hours per semester			**30**		

LEARNING OUTCOMES

Category of outcome	Out-come code	Course learning outcomes	Corresponding programme outcome code
Knowledge	W01	They will have a knowledge of IT tools, engineering graphics software, office suites, calculation software, and modelling software to solve engineering problems in machine design.	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	They will have knowledge of engineering calculation methods used in mechanics, mechanical design and strength of materials, especially the strength of bars and bar systems, material tension, strength of beams, slabs, shells and thick-walled cylinders subjected to combined loading.	MiBM1_W19
Skills	U01	They will be able to select appropriate engineering materials to ensure correct machine operation.	MiBM1_U14
	U02	They are able to design machine elements using CAD/CAM software.	MiBM1_U19
Competence	K01	They will be aware of the social role of a graduate of a technology-oriented university and understand the need to inform in a comprehensive way the general public about accomplishments in mechanical engineering.	MiBM1_K06

COURSE CONTENT

Type of instruction*	Topics covered
laboratory	1. Creation of an assembly in SolidWorks. Basic Mate Operations
	2. Creation of an assembly in SolidWorks. Advanced/Mechanical mates.
	3. Threaded joint
	4. DimExpert
	5-6. Modelling non-standard elements of machine.
	7. Selection of standardized machine parts (Toolbox).
	8-9. Application of standard and advanced mates.
	10. Motion analysis.
	11. Creation exploded views.
	12. Assembly drawing with bills of materials
	13-14. Creation of full documentation for assembly drawing
	15. 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
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 in-class test.

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

OVERALL STUDENT WORKLOAD

	ECTS weighting						
	Activity type	**Student workload**					**Unit**
		L	C	Lab	P	S	
1.	Scheduled contact hours			30			h
2.	Other contact hours (office hours, examination)			2			h
3.	**Total number of contact hours**	32					h
4.	**Number of ECTS credits for contact hours**	1.3					ECTS
5.	**Number of independent study hours**	18					h
6.	**Number of ECTS credits for independent study hours**	0.7					ECTS
7.	**Number of practical hours**	50					h
8.	**Number of ECTS credits for practical hours**	2.0					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. Johnson, Technical drawing with engineering graphics, Pearson Education, Inc., 2016.
3. G. Jankowski,R. Doyle, SolidWorks® For Dummies, Wiley, 2011
4. M. Lombard , SolidWorks Assemblies and Assembly Drawings Bible, Wiley John & Sons, Inc., 2011