



Dofinansowane przez Unię Europejską



# **COURSE SPECIFICATION**

Course code	full-time programme:	M#2-S1-ME-KWW-510					
	part-time programme:						
Course title in Polish	Komputerowe modelow	Komputerowe modelowanie części maszyn I					
Course title in English	Computer-Aided Design	Computer-Aided Design of Machine Part I					
Valid from (academic year)	2024/2025						

### **GENERAL INFORMATION**

Programme of study	MECHANICAL ENGINEERING
Level of qualification	first-cycle
Type of education	academic
Mode of study	full-time programme
Specialism	Computer-Aided Manufacturing
Department responsible	Department of Machine Design and Machining
Course leader	dr inż. Michał Skrzyniarz
Approved by	dr hab. Jakub Takosoglu, prof. PŚk, Dean of the Faculty of Mechatronics and Mechanical Engineering

# **COURSE OVERVIEW**

Course type		specialism-related
Course status		compulsory
Language of instruction		English
Semester of	full-time programme	Semester V
delivery	part-time programme	
Pre-requisites		
Examination required (YES/NO)		NO
ECTS value		2

Mode of instruction		lecture	class	laboratory	project	seminar
No. of hours	full-time programme	15		15		
per semester	part-time programme					

# LEARNING OUTCOMES







Fundusze Europejskie dla Rozwoju Społecznego



Rzeczpospolita Polska Dofinansowane przez Unię Europejską



Category of outcome	Course learning ourcomes		Corresponding programme outcome code
Knowledge	W01	The student will have advanced knowledge of structural modelling using modern design software to support the work of a designer.	MiBM1_W03 MiBM1_W09 MiBM1_W11
Knowledge	W02	The student has organised knowledge to support the solution of various engineering problems related to construction.	MiBM1_W03 MiBM1_W09 MiBM1_W11
	U01	The student will be able to apply basic science knowledge to solve problems in the design phase of machine components	MiBM1_U01 MiBM1_U02 MiBM1_U19
Skills	U02	The student will be able to complete a project using advanced design tools, including the ability to design machine components.	MiBM1_U01 MiBM1_U02 MiBM1_U19
	U03 U03 The student will be proficient in the us software in the field of mechanics ar design for the purpose of de constructing machine components.		MiBM1_U01 MiBM1_U02 MiBM1_U19
	K01	The student is able to comprehensively analyse and efficiently carry out assigned tasks.	MiBM1_K06
Competence	K02	The student is aware of the need for continuous learning, including familiarisation with new modelling applications and techniques.	MiBM1_K02

#### **COURSE CONTENT**

Type of instruction lecture	Topics covered
lecture	Introduction to part modelling in CAD software for machine components. Working with layers. Editing object representations. Creating sketches. Applying relations and sketch parameterisation. Dynamic sketch editing. Creating solid features. Boolean operations. 3D model modifications using synchronous modelling. Hole wizard. Working with assemblies. Creating assemblies. Adding and moving components. Applying constraints within assemblies. Create new components within assemblies. Creating dependencies between components. 2D and assembly drawings.
laboratory	Create solid features for model machine components: sketching, working with relationships, parameterisation and dynamic editing. Use of sketch libraries. 3D modelling operations. Editing selected machine component elements using synchronous modelling. Work with the Hole Wizard. Preparing solid parts for assembly. Assemble components. Create an assembly of elements. Create a technical drawing for the selected machine component.

#### ASSESSMENT METHODS

Outcome	Methods of assessment (Mark with an X where applicable)							
code	Oral examination	Written examination	Report	Other				
W01			Х					
W02			Х					
U01			Х					
U02			Х					



Projekt "Dostosowanie kształcenia w Politechnice Świętokrzyskiej do potrzeb współczesnej gospodarki" nr FERS.01.05-IP.08-0234/23





Fundusze Europejskie dla Rozwoju Społecznego



Dofinansowane przez Unię Europejską



U03		Х		
K01		Х		
K02		Х		

#### ASSESSMENT TYPE AND CRITERIA

Mode of instruction	Assessment type	Assessment criteria
lecture	non-examination assessment	The pass mark is a minimum of 50% for the final in-class test.
laboratory	non-examination assessment	The pass mark is a minimum of 50% for the final in-class test.

### OVERALL STUDENT WORKLOAD

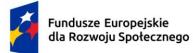
	ECTS weighting											
			Student workload									
No.	Activity type			II-tin				•	rt-tir			
	1. Scheduled contact hours		C	gram	P	S	L	C	gran	P	S	
1.			0	15	•	0	<b>-</b>	U	LU		0	h
2.	Other contact hours (office hours, examination)	2									h	
3.	Total number of contact hours		34									h
4.	Number 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			25								h
8.	Number of ECTS credits for practical hours	1,0								ECTS		
9.	Total study time	50								h		
10.	ECTS credits for the course 1 ECTS credit = 25-30 hours of study time					2	2					ECTS

# **READING LIST**

- 1. Mazur D., Rudy M.: Modelowanie w systemie NX CAD. Oficyna Wydawnicza Politechniki Rzeszowskie Rzeszów 2016
- 2. Menchen P., Budzyński A.: NX 8.5 Ćwiczenia. GMSystem Wrocław 2012
- 3. Menchen P.: NX 9.0. Ćwiczenia "Od koncepcji do wytwarzania krok po kroku". GM System Wrocław 2013.
- 4. Przybylski W., Deja M.: Komputerowo wspomagane wytwarzanie maszyn. Podstawy i zastosowanie. WNT Warszawa 2007.
- 5. Antosiewicz M.: Modelowanie powierzchniowe, Tom I. Wydawnictwo CAMdivision, Rzeszów 2022.









Dofinansowane przez Unię Europejską



- 6. Antosiewicz M.: Modelowanie powierzchniowe, Tom II. Wydawnictwo CAMdivision, Rzeszów 2022.
- 7. Jóźwiak D., Antosiewicz M.: Podstawy modelowania Synchronous & Realize Shape, Wydawnictwo CAMdivision, Miękkinia 2015.

