



COURSE SPECIFICATION

Course code	full-time programme:	M#2-S2-ME-PT-213
	part-time programme:	
Coursetitle in Polish	Projektowanie oprzyrządowania technologicznego	
Coursetitle in English	Machine Design: Jigs and Fixtures	
Valid from (academic year)	2024/2025	

GENERAL INFORMATION

Programme of study	MECHANICAL ENGINEERING
Level of qualification	second-cycle
Type of education	academic
Mode of study	full-time programme
Specialism	Design and Manufacturing
Department responsible	Department of Machine Design and Machining
Course leader	dr inż. Piotr Maj
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 delivery	full-time programme	Semester II
	part-time programme	Semester II
Pre-requisites		
Examination required (YES/NO)	NO	
ECTS value	3	

Mode of instruction		lecture	class	laboratory	project	seminar
No. of hours per semester	full-time programme	15			30	
	part-time programme					

LEARNING OUTCOMES





Category of outcome	Outcome code	Course learning outcomes	Corresponding programme outcome code
Knowledge	W01	The student has knowledge in the field of creating technical documentation and has in-depth knowledge related to the operation of CAD/CAM systems.	MiBM2_W06 MiBM2_W12
	W02	The student has knowledge of the construction and design of machine elements. Has knowledge of the technology of manufacturing and processing machine parts. The student has in-depth knowledge of the names and functions of individual machine elements.	MiBM2_W04 MiBM2_W05 MiBM2_W07
Skills	U01	The student is able to design a technological process and develop technical documentation.	MiBM2_U04 MiBM2_U07
	U02	Can use CAD/CAM software in an advanced manner to create models and technical drawings and to develop control programs for numerically controlled machine tools.	MiBM_U13
Competence	K01	The student is ready to critically evaluate his knowledge, is aware of supplementing his knowledge from the literature as well as from experts in the field of mechanics and mechanical engineering.	MiBM_K01

COURSE CONTENT

Mode of instruction	Topics covered
lecture	The role and importance of technological equipment in the processes of subtractive machining. Classification, division and principle of operation of technological equipment. Construction, purpose, design solutions of machining devices and fixtures. Materials intended for the construction of machining devices and fixtures. Methods of mounting the equipment in the working space of the machine tool. Mounting and fixing the workpiece in the fixture. Software and tools used in the design and production of machining devices and fixtures.
project	Development of selected technological equipment. Creation of a model and technical drawing of the element using CAD software. Development of the technological process of producing selected technological equipment including the selection of: machine tools, materials, tools, holders, and development of machining programs for numerically controlled machine tools.

ASSESSMENT METHODS

Outcome code	Methods of assessment					
	Oral examination	Written examination	Test	Project	Report	Other
W01			X			
W02			X			
U01			X	X		
U02			X	X		
K01						X



**ASSESSMENT TYPE AND CRITERIA**

Mode of instruction	Assessment type	Assessment criteria
lecture	non-examination assessment	Successful completion of the exam. Obtaining at least 50% of the points.
project	non-examination assessment	Final assessment based on obtaining at least 50% of points from the developed project. Obtaining at least 50% of points from the written colloquium.

OVERALL STUDENT WORKLOAD

ECTS weighting													
No.	Activitytype	Student workload										Unit	
		full-timeprogramme					part-time programme						
		L	C	Lb	P	S	L	C	Lb	P	S		
1.	Scheduledcontacthours	15			30								h
2.	Other contact hours (office hours, examination)	2			2								h
3.	Total number of contact hours	49										h	
4.	Number of ECTS credits for contact hours	2,0										ECTS	
5.	Number of independent study hours	26										h	
6.	Number of ECTS credits for independent study hours	1,0										ECTS	
7.	Number of practicalhours	50										h	
8.	Number of ECTS credits for practical hours	2,0										ECTS	
9.	Total study time	75										h	
10.	ECTS credits for thecourse <i>1 ECTS credit = 25-30 hours of study time</i>						3					ECTS	

READING LIST

1. Mieczysław F.: Uchwyty obróbkowe Wydawnictwo. Naukowo-Techniczne 2002
2. Mermon W., Feld M.: Zasady konstrukcji przyrządów, uchwytów i sprawdzianów specjalnych. Warszawa 1975
3. Kapiński S., Skawiński P., Sobieszcański J., Sobolewski J.: Projektowanie technologii maszyn. Wydawnictwo Politechniki Warszawskiej. 2007.
4. Dobrzański T.: Uchwyty obróbkowe. Poradnik konstruktora. WNT. Warszawa 1966.

