COURSE SPECIFICATION

Course code	full-time programme:	**M#2-S1-ME-303**
	part-time programme:	
Course title in Polish	**Podstawy obróbki ubytkowej**	
Course title in English	**Fundamentals of Machining**	
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	**all**
Department responsible	**Department of Machine Design and Machining**
Course leader	**dr inż. Łukasz Nowakowski**
Approved by	**dr hab. Jakub Takosoglu, prof. PŚk, Dean of the Faculty of Mechatronics and Mechanical Engineering**

COURSE OVERVIEW

Course type		**programme-specific**
Course status		**compulsory**
Language of instruction		**English**
Semester of delivery	full-time programme	**Semester III**
	part-time programme	
Pre-requisites		**Technical Drawing**
Examination required (YES/NO)		**YES**
ECTS value		**3**

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

LEARNING OUTCOMES

Category of outcome	**Outcome code**	**Course learning outcomes**	**Corresponding programme outcome code**

Knowledge	W01	The student has in-depth knowledge of the nomenclature, construction, principle of operation of various types of machine tools and determination of their basic parameters of operation. The student knows the manufacturing techniques of machine parts, has knowledge of the construction of various types of systems for machining and shaping materials.	MiBM1_W06 MiBM1_W07
	W02	The student knows the methods to design the technological process. The student has detailed knowledge related to selected issues in the field of design, manufacturing technology of basic components of machinery and equipment.	MiBM1_W09 MiBM1_W11
Skills	U01	The student is able to use knowledge from the area of basic sciences to formulate and solve engineering tasks in various areas of mechanics and mechanical engineering, at the stage of design, construction, selection of materials and manufacturing. He is able to evaluate, critically analyze and synthesize the obtained results and express his opinions and comments.	MiBM1_U01 MiBM1_U04
	U02	The student is able to obtain information from the literature and design a simple technological process in the field of mechanics and mechanical engineering and select appropriate machinery and equipment for this purpose.	MiBM1_U03 MiBM1_U08
Competence	K01	The student is ready to critically evaluate his knowledge and the need to improve his professional qualifications (through second and third degree studies, postgraduate studies, professional courses).	MiBM1_K01 MiBM1_K03

COURSE CONTENT

Type of instruction lecture	Topics covered
lecture	The lecture classes conducted will provide content related to the basics of machining, which will include information on: cutting processes (turning, milling, drilling, grinding, cutting, etc.), technological parameters, kinematics of processes, different types of machine tools, cutting tools and machining chucks will be presented.
laboratory	Laboratory classes will include hands-on exercises to familiarize students with basic machining processes carried out on conventional and numerically controlled machine tools. The scope of the laboratory classes will include: • the turning process • milling process • the process of drilling • grinding process • cutting process

ASSESSMENT METHODS

Outcome	Methods of assessment *(Mark with an X where applicable)*

code	Oral examination	Written examination	Test	Project	Report	Other
W01		x				
W02		x				
U01					x	
U02					x	
K01					x	

ASSESSMENT TYPE AND CRITERIA

Mode of instruction	Assessment type	Assessment criteria
lecture	examination assessment	Successful completion of the final exam. Obtaining at least 50% of the points.
laboratory	non-examination assessment	Positive completion of class reports. The final grade is the arithmetic average.

OVERALL STUDENT WORKLOAD

ECTS weighting												
No.	Activity type	Student workload										Unit
		full-time programme					part-time programme					
1.	Scheduled contact hours	L	C	Lb	P	S	L	C	Lb	P	S	h
		15		15								
2.	Other contact hours (office hours, examination)	4		2								h
3.	**Total number of contact hours**	**36**										h
4.	**Number of ECTS credits for contact hours**	**1,4**										ECTS
5.	**Number of independent study hours**	**39**										h
6.	**Number of ECTS credits for independent study hours**	**1,6**										ECTS
7.	**Number of practical hours**	**38**										h
8.	**Number of ECTS credits for practical hours**	**1,5**										ECTS
9.	**Total study time**	**75**										h
10.	**ECTS credits for the course** *1 ECTS credit = 25-30 hours of study time*	**3**										ECTS

READING LIST

1. Jerzy Honczarenko: Obrabiarki sterowane numerycznie, Wydawnictwo Naukowe PWN 2019
2. Jemielniak Krzysztof, Paweł Karolczak Rafał, Subbotko Borkowski, Wojciech Oskar Rusiecki: Nowoczesne procesy obróbki skrawaniem WNT 2022
3. Dudik Karol, Górski Eugeniusz: Poradnik tokarza WNT 2016
4. Górski Eugeniusz: Poradnik frezera WNT 2016