



Dofinansowane przez Unię Europejską



COURSE SPECIFICATION

Course code	full-time programme: M#2-S1-ME-KWW-6					
	part-time programme:					
Course title in Polish	Narzędzia skrawające					
Course title in English	Cutting Tools					
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. Łukasz Nowakowski
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 instruct	tion	English				
Semester of	full-time programme	Semester VI				
delivery	part-time programme					
Pre-requisites		Engineering Drawing, Fundamentals of Machining, CNC Programming I				
Examination required (YES/NO)		YES				
ECTS value		3				

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

LEARNING OUTCOMES

Category of outcome	Outcome code	Course learning outcomes	Corresponding programme outcome code
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Projekt "Dostosowanie kształcenia w Politechnice Świętokrzyskiej do potrzeb współczesnej gospodarki" nr FERS.01.05-IP.08-0234/23



Fundusze Europejskie dla Rozwoju Społecznego		Rzeczpospolita Dofinansowane p po Polska Unie Europe	rzez
	W01	The student has a structured knowledge of engineering graphics and modern information technologies to support the design of cutting tools	MiBM1_W03 MiBM1_W06
Knowledge	W02	The student knows the methods to design cutting tools. Has detailed knowledge related to selected issues in the field of design, manufacturing technology of cutting tools.	MiBM1_W11 MiBM1_W07
	U01	The student is able to consciously use computer software in the field of mechanics and mechanical engineering in the areas of design, construction, manufacturing techniques, presentation of work results.	MiBM1_U02 MiBM1_U04
Skills	U02	The student is able to design a simple technological process in the field of mechanics and mechanical engineering and select appropriate machinery and equipment for this purpose.	MiBM1_U08 MiBM1_U09
	U03	The student is able to carry out the design and process for cutting tools using CAD/CAM software, starting with a sketch and ending with a prototype.	MiBM1_U04 MiBM1_U19
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 following content will be imparted as part of the lecture classes conducted, including: classification of cutting tools, operating characteristics of cutting tools, construction of cutting tools, geometry of cutting tools, materials used for cutting tools, design solutions used in the construction of cutting tools, construction of lathe knives, boring bars, chisel knives, drills, countersinks, reamers, broaches, milling cutters, saws, threading tools.
laboratory	 The laboratory classes will include exercises aimed at Implementation of the technology of production of a monolithic cutting tool: measurement of the geometry of the selected cutting tool and hardness of the cutting edge cutting tool, arming the machine tool with tools and machining chucks (completion of tools, measurement of tools, loading of tools into the machine tool), preparing the semi-finished product (cutting the material, writing machining programs, roughing), making a monolithic cutting tool on selected machine tools, sharpening of the monolithic cutting tool on a tool grinder, quality control of the made monolithic cutting tool

ASSESSMENT METHODS

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



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Fund	dusze Europejski Rozwoju Społecz	e	Rzeczpospolita Polska	Dofinansowane przez Unie Europeiska	* * *
				X	* * *
U02				Х	
U03				Х	
K01				Х	

ASSESSMENT TYPE AND CRITERIA

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Mode of instruction	Assessment type	Assessment criteria
lecture	examination assessment	A positive pass on 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											
		Student workload									Unit	
No.	Activity type		fu	ll-tin	ie mo			pa	rt-tir	ne		
				yran Th	D	9	1		yran	D	9	
1.	Scheduled contact hours		C		Г	5	L.	C	LD	Г	5	h
		15		15								
2.	Other contact hours (office hours, examination)	4	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

- Kunstetter S.: Narzędzia skrawające do metali. Konstrukcja
 Cichosz P.: Narzędzia skrawające
 Polskie Normy.
 Normy branżowe i zakładowe.

