

SYLLABUS

Course description

Course code		Course	Procesy technologiczne	
ME/O/I/ST/B15			Technology processes	
Language of instruction		English		
Academic year		2025/2026		
field of study:		Mechanical Engineering		
field of specialisation:		All		
Educational level		First-cycle studies		
Education profile		General academic		
Mode of study		Full-time studies		
Semester(s)		V		
Affiliation with a group of classes		B. Group of obligatory course core subject		
Course status		Obligatory		
Types of classes, instruction hours, ECTS credits		Types of classes	Number of instruction hours	Number of ECTS credits
		Lecture	15 [h]	3 ECTS
		Classes	- [h]	
		Project	30 [h]	
Linkage of the course	with the education profile	Related to the conducted scientific activity in the discipline to which the field of study is assigned		0 ECTS
	with qualifications	It is used to acquire engineering competences by the student		3 ECTS
	with science discipline	Mechanical engineering		3 ECTS
Form of teaching		Traditional – classes organized at the University /classes conducted using distance learning methods and techniques		
Prerequisites		Knowledge of mechanics (statics) and mathematics		
Department		Faculty of Mechanical Engineering		
Coordinator		PhD, DSc, Eng Wojciech Kucharczyk		
The website of the basic organizational unit		http://wm.uniwersytetradom.pl		
E-mail address, phone number of the coordinator		wojciech.kucharczyk@urad.edu.pl, tel. +48 48 361 76 80		

LEARNING OUTCOMES, CURRICULUM CONTENT, TEACHING CLASSES, VERIFICATION OF LEARNING OUTCOMES

Learning Objective:	The aim of the course is to acquire the ability to design technological processes of machine parts together with the development of a project of a technological process of a selected structural element.
Curriculum Content:	<p>The content of the classes is related to the conducted scientific research.</p> <p>Lecture. Production and technological processes and their division. Input data for the design of the technological process. Technological construction. Standardization and unification of parts and assemblies. Types of semi-finished products, their selection, preparation for processing. Factors affecting the choice of blank. Rational selection of materials. Technological documentation. Machining accuracy, product quality. Typization of technological processes. Designing the technological process of class parts: shaft, sleeve and disc, lever, body, flat parts, gear wheel. Framework product assembly process.</p> <p>Project. The topics of the exercises include the development of the technological process of the indicated precision element with the use of selected technologies, taking into account: dimensions of the starting material; machining allowances; calculations of dimensions and technological parameters in machining processes; calculations related to the selection of machines, devices, fixtures and tools for a specific technological process; heat and surface treatment as well as quality control and technical acceptance.</p>
Didactic (educational) methods:	<p>Lecture - giving method (informative lecture).</p> <p>Project - practical method (project method).</p>
Course assessment type, the criteria for assessing the achieved learning outcomes, and the method of calculating the final grade:	<p>The condition for passing the course is to achieve all the required learning out comes specified for the course.</p> <p>1. Lecture. Written test - average grade from partial questions.</p> <p>2. Project. Completion of an individually made technological process design for the indicated part of the machines in the field of: removal, heat and surface treatment as well as quality control.</p> <p>The final grade for the project is the sum of the grades: 60% project, 30% presentation, 10% activity in class.</p>

Learning outcomes for the course in relation to the field of study learning outcomes and the type of classes				Methods of verifying learning outcomes	
Learning outcome number	Description of the learning outcomes for the course (PEU) A student who has passed the course (W) knows and understands / (U) can / (K) is ready to:	Field of study learning outcome (KEU)	Types of classes	Form of verification (credits)	Methods of testing and assessment
W1	It defines the basic concepts used in the design of technological processes (volume of production, producibility of construction, allowances, technological parameters, machining accuracy, product quality, working time standardization, normalization and unification, main and auxiliary technological operation, treatment, etc.). Has knowledge of engineering materials, their research and forming technologies.	K_WG13	Lecture	Written test	Arithmetic mean of sub-question scores
W2	He knows, based on what criteria, to select semi-finished products, machine tools, devices, holders, tools, how to calculate the required machining parameters and dimensions for the development of a technological process. Knows and understands the basic methods, techniques	K_WG16	Lecture	Written test	Arithmetic mean of sub-question scores

	and tools required for solving simple engineering tasks in the area of construction, manufacturing technology and operation of machinery				
U1	Is able to identify and formulate specifications for simple engineering tasks of a practical nature in the design, manufacture and operation of machinery and equipment. He can calculate and select technological parameters, select machining allowances, tools, instruments, machine tools, standardize machining times. Plans the correct sequence of main and auxiliary operations and quality control in the developed technological documentation.	K_UW08	Project	Passing individually made project	Evaluation of the degree and quality of project execution
K1	He is able to analyze project tasks assigned to implementation, in terms of defining priorities, serving the maximum efficiency of task execution. Is ready to complete and critically evaluate specialized knowledge and is able to select sources of knowledge and methods of learning appropriate for himself/herself and others.	K-KK01	Lecture	Written test	Arithmetic mean of sub-question scores
K2	Is willing to comprehensively analyze and effectively carry out assigned tasks, and in the event of difficulties in solving them, use expert opinion. He is able to show entrepreneurship and ingenuity in activities related to the implementation of project tasks.	K-KK02	Project	Passing individually made project	Evaluation of the degree and quality of project execution

Literature and teaching aids
<p>Primary literature:</p> <p>[1] Feld M.: Podstawy projektowania procesów technologicznych typowych części maszyn. WNT. Warszawa. 2003.</p> <p>[2] Mazurkiewicz A.: Konstytuowanie powierzchni i addytywne kształtowanie wyrobów obróbką laserową. Wyd. UTH Radom, Radom 2018.</p> <p>Additional literature:</p> <p>[1] Mazurkiewicz A.: Technologie specjalne kształtowania materiałów. Wyd. II. Wyd. Polit. Rad. Radom 2009.</p> <p>Study aids:</p> <p>[1] Lectures on technology processes</p>

Student workload required to achieve the assumed learning outcomes – the balance of ECTS credits		
Attendance, participation	Student workload [h]	
	Student's self-study hours Classes without a teacher (ZBN)	Classes
Participation in lectures / project	X	45 [h]
Preparation for lectures / project Preparation for credit	5 [h] / 15 [h] 10 [h]	X
Total student workload Preparation for ... credit / exam	30 [h] / 1.2 ECTS	45 [h] / 1.8 ECTS
ECTS points per subject	75 [h] / 3 ECTS	

Additional information, comments
<p>In the case of students with special needs, including disabilities, and chronic illnesses, the methods and forms of verification of learning outcomes specified above (in the syllabus) are adapted to the individual needs of these students, as appropriate.</p> <p>Detailed rules and forms of support for students with special needs, including those with disabilities and chronically ill, during classes, credits, and exams are specified in: University Regulations (Regulamin Studiów Uniwersytetu Technologiczno-Humanistycznego w Radomiu), Study Regulations (Zasady Studiowania), and Procedure for Ensuring Accessibility of the Educational Process to Students with Special Needs, Including Those with Disabilities and Chronically ill (Procedura dotycząca zapewnienia dostępności procesu kształcenia studentom ze szczególnymi potrzebami, w tym: z niepełnosprawnością, przewlekle chorych).</p>