

# SYLLABUS

## Course description

Course code		Course	TECHNOLOGIA BUDOWY MASZYN		
MB/O/I/ST/B1.16			MACHINERY CONSTRUCTION TECHNOLOGY		
Language of instruction		English			
Academic year		2023/2024			
<b>field of study:</b>		Mechanical engineering			
<b>field of specialisation:</b>		All			
Educational level		first-cycle studies			
Education profile		General academic			
Mode of study		Full-time studies			
Semester(s)		4			
Affiliation with a group of classes		Core subjects			
Course status		Obligatory			
Types of classes, instruction hours, ECTS credits		Types of classes	Number of instruction hours	Number of ECTS credits	
		Lecture	30[h]	3,5ECTS	
		Classes	15[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			3,5 ECTS
	with qualifications	it is used to acquire engineering competences by the student			3,5ECTS
	with science discipline	Mechanical engineering			3,5 ECTS
Form of teaching		Traditional – classes organized at the University /classes conducted using online learning methods and techniques			
Prerequisites		Registration for the fourth semester			
Department		Faculty of Mechanical Engineering			
Coordinator		Dr hab. inż. Marek Kowalik			
The website of the basic organizational unit		www.wm.uniwersytetradom.pl			
E-mail address, phone number of the coordinator		m.kowalik@uthrad.pl			

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

Learning Objective:	The aim of the course is for the student to acquire basic skills in designing technological processes for machining typical machine parts and assembly, and to apply a specific manufacturing technique or techniques to obtain a product with a specific shape and operational properties
Curriculum Content:	<p>The content of the classes is related to the conducted scientific research.</p> <p>Lecture:</p> <p>Basic concepts: production process and technological process as well as components of the technological process. Types of semi-finished products, their selection, preparation for processing.</p> <p>Machining accuracy, factors affecting the quality of the workpiece.</p> <p>Technological documentation. Principles of basing workpieces, classification of bases, selection of bases, homing errors.</p> <p>Machining of parts with rotating surfaces. Surface processing.</p> <p>Machining of grooves and threads. Gear machining. Heat treatment, the place of heat treatment in the technological process</p> <p>Designing treatment on numerically controlled machine tools.</p> <p>Examples of framework technological processes. The concept of technology of construction. General assembly rules</p> <p>Laboratory exercises:</p> <ol style="list-style-type: none"> <li>1. Making a project of a raw casting such as a sleeve, a disc, a gear wheel, a body.</li> <li>2. Preparation of technological documentation of the machining process of shaft-type parts.</li> <li>3. Preparation of technological documentation of the machining process of parts such as sleeve, disc, gear wheel.</li> <li>4. Preparation of technological documentation of the machining process of body parts.</li> <li>5. Development of a technological process for a simple part to be made on a CNC machine tool</li> </ol>
Didactic (educational) methods:	<ol style="list-style-type: none"> <li>1. lecture with elements of multimedia presentations;</li> <li>2. didactic discussion;</li> <li>3. work in groups;</li> <li>4. laboratory experiment.</li> </ol>
Course assessment type, the criteria for assessing the achieved learning outcomes, and the method of calculating the final grade:	The final grade for the lecture is determined depending on the result of the exam, the grade for laboratory classes depends on the degree of independence of work during the classes while performing individually assigned tasks and reports

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	Has basic knowledge of development trends in the field of design, manufacture, construction and operation of machines	K WG16	lecture	written exam	written exam
U1	Can assess the usefulness of routine methods and tools for solving a simple engineering task of a practical nature in the design, manufacture and operation of machines and select and apply the appropriate method and tools	K UW07	laboratory	project	project
U2...	Can identify and formulate a specification	K UW09	laboratory	project	project

	of simple engineering tasks of a practical nature in the design, manufacture and operation of machines				
K1	He is aware of the need to supplement knowledge throughout his life and is able to choose the right teaching methods for himself and others	K KK01	laboratory	observation	observation

Literature and teaching aids					
1.Feld M.: Podstawy projektowania procesów technologicznych typowych części maszyn. Wydawnictwo Naukowe PWN, WNT.Warszawa.2018 in polish 2.Helmi Youssef ;Hassan El-Hofy: Traditional Machining Technology: Machine Tools and Operations 2nd Edition. CRC Press. 2020. ISBN 978-0367431334 3. Helmi Youssef ;Hassan El-Hofy: Machining Technology: Machine Tools and Operations1st Edition, CRC Press. 2008. ISBN 978-1420043396					

Student workload required to achieve the assumed learning outcomes – the balance of ECTS credits			
Attendance, participation	Student workload [h].		
	Other contact hours (IGK)	Student's self-study hours Classes without a teacher (ZBN)	Classes
Participation in ... lectures	X	X	30 [h]
Participation in .... classes/laboratory classes	X	X	15[h]
Meeting with teachers during their duty hours	5 [h]	X	X
Preparation for lectures/classes/.... , Preparation for ... credit / exam	X	23[h] 15[h]	X
Total student workload	5 [h]/ 0,2ECTS	38 [h]/1,5ECTS	45[h]/1,8 ECTS
ECTS credits for the course	3,5 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, przewlekłe chorych).</p>

