

# SYLLABUS

## Course description

Course code	Course	<b>PROJEKT STUDENTA</b>		
MB/O/I/NST/C2A.9		<b>STUDENT'S PROJECT</b>		
Language of instruction	English			
Academic year	2023/2024			
<b>field of study:</b>	Mechanics and machine construction			
<b>field of specialisation:</b>	Designing and Manufacturing of Machines			
Educational level	first-cycle studies			
Education profile	General academic			
Mode of study	Part-time studies			
Semester(s)	5			
Affiliation with a group of classes	Specialization module			
Course status	obligatory			
Types of classes, instruction hours, ECTS credits	Types of classes	Number of instruction hours	Number of ECTS credits	
	Lecture	0 [h]	3 ECTS	
	Classes	0 [h]		
	Project	24 [h]		
Linkage of the course	with the education profile	Associated with the conducted scientific activity in the discipline to which the field of study is assigned		3 ECTS
	with qualifications	It serves the student's acquisition of engineering competencies		3 ECTS
	with science discipline	Mechanical engineering		3 ECTS
Form of teaching	Traditional – classes organized at the University /classes conducted using online learning methods and techniques			
Prerequisites				
Department	Faculty of Mechanical Engineering			
Coordinator	dr inż. Wojciech Kucharczyk			
The website of the basic organizational unit	<a href="http://www.wm.uniwersytetradom.pl/">http://www.wm.uniwersytetradom.pl/</a>			
E-mail address, phone number of the coordinator	wojciech.kucharczyk@uthrad.pl, tel. 48 361 7680			

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

Learning Objective:	The aim is to apply the acquired knowledge in the field of design basics and methods of manufacturing typical machine parts to the design of complex mechanical devices and technological equipment of machines. Development of design skills (preparation of construction documentation) using CAD/CAM methods. You will develop the ability to work in a project team on a common task.
Curriculum Content:	The content of the classes is related to the conducted scientific research. <b>Project (NB).</b> Preparation of the concept of a structural design of a mechanical device or technological instrumentation for the topic being implemented (device modeling, engineering calculations). Analysis and selection of the concept of the designed device. Implementation of the project in the form of construction documentation using the knowledge gained from materials science, mechanics, strength of materials, machine technology. Construction optimization using CAD/CAM methods for the adopted design assumptions and analysis of manufacturing methods as well as quality assurance of the designed device at the manufacturing and assembly stages.
Didactic (educational) methods:	<b>Project:</b> discussion, analysis and interpretation of source texts, team student projects.
Course assessment type, the criteria for assessing the achieved learning outcomes, and the method of calculating the final grade:	The condition for passing the course is to achieve all the required learning outcomes specified for the subject and obtaining positive grades using the assessment methods adopted for the subject. Teams of 3 - 4 people. The final grade for the project is the sum of the grades: 60% project, 30% presentation, 10% activity in class.

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 ( <b>W</b> ) knows and understands / ( <b>U</b> ) can / ( <b>K</b> ) 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 in the field of technological design of machine parts.	K_WG16	Project	Graded credit	Evaluation of the project and teamwork
W2	Has elementary knowledge of numerical methods used in the design and manufacturing process.	K_WG17	Project	Graded credit	Evaluation of the project and teamwork
U1	Can - in accordance with the given specification - design and implement a simple device, facility, system or process, typical for the design and manufacturing process by selecting the appropriate methods and tools.	K_UW09 K_UW10	Project	Graded credit	Evaluation of the project and teamwork
U2	He can plan and carry out experiments, including measurements and computer simulations, interpret the results and draw conclusions.	K_UW13	Project	Graded credit	Evaluation of the project and teamwork
K1	He is aware of the responsibility related to decisions made as part of engineering activities, especially in terms of his own and other people's safety.	K_KO03	Project	Graded credit	Evaluation of the project and teamwork
K2	He is able to show entrepreneurship and ingenuity in activities related to the implementation of project tasks.	K_KO05	Project	Graded credit	Evaluation of the project and teamwork
K3	He is able to cooperate and work in a group, assuming various roles in it.	K_UO20	Project	Graded credit	Evaluation of the project and teamwork

Literature and teaching aids
[1] Ever J. Barbero (Editor): Multifunctional Composites. ISBN: 978-1-51-680452-8, 2016.
[2] Rucki M., Kucharczyk W., Żurowski W., Hevorkian E.: New Engineering Materials: A Handbook (w druku). Wyd. UTH Radom, Radom 2023.
[3] Feld M.: Podstawy projektowania procesów technologicznych typowych części maszyn. WNT, Warszawa 2000.
[4] Grzesik W., Niesłony P., Bartoszek M.: Programowanie obrabiarek NC/CNC. WNT, Warszawa 2006.
[5] Zawistowski H., Frenkler D.: Konstrukcja form wtryskowych, WNT 2001.
[6] Kucharczyk W., Mazurkiewicz A., Żurowski W.: Nowoczesne materiały konstrukcyjne. Wybrane zagadnienia. Wydanie III. Wyd. Politechniki Radomskiej. Radom. 2011.
[7] Królikowski W.: Polimerowe kompozyty konstrukcyjne. Wyd. PWN. Warszawa 2012.

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	X
Participation in project	X	X	24 [h]
Meeting with teachers during their duty hours	8 [h]	X	X
Preparation for project Preparation for pass	X	23 [h] 20 [h]	X
Total student workload	8 [h] / 0,4 ECTS	43 [h] / 1,7 ECTS	24 [h] / 0,9 ECTS
ECTS credits for the course	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>