

## SYLLABUS

### Course description

Course code	Course	<b>KONSTRUOWANIE MASZYN</b>		
MB/O/I/ST/C2B.5		<b>MACHINE CONSTRUCTION</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	Full-time studies			
Semester(s)	7			
Affiliation with a group of classes	Specialization module			
Course status	Eligible			
Types of classes, instruction hours, ECTS credits	Types of classes	Number of instruction hours	Number of ECTS credits	
	Lecture	15 [h]	3 ECTS	
	Exercises	15 [h]		
	Laboratory	15 [h]		
Linkage of the course	with the education profile	Related to the scientific activity carried out in the discipline to which it belongs a course of study is assigned (general academic profile)		0 ECTS
	with qualifications	Serves for the student to acquire 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	Student knows the basics of applying 2D and 3D design basics News in the field: Fundamentals of mechanical engineering, mechanics, theory of mechanisms and machines, Mathematical			
Department	Faculty of Mechanical Engineering			
Coordinator	Professor Wojciech Żurowski			
The website of the basic organizational unit	<a href="http://www.wm.uniwersytetradom.pl">www.wm.uniwersytetradom.pl</a>			
E-mail address, phone number of the coordinator	wojciech.zurowski@uthrad.pl, phone: 48 3617615			

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

Learning Objective:	C1-acquisition of skills in using engineering databases, selected computing programs that support construction work, use of book resources of specialized literature C2-acquisition of skills in designing the device necessary to perform the task, along with preliminary economic analysis. C3-acquisition of skills in conducting an analysis of the suitability and mode of operation of existing technical solutions and preliminary analysis of their suitability.
Curriculum Content:	<b>Lecture:</b> lectures that are closely related to the discussion of the content of exercises and laboratories. They are largely a presentation and discussion of practical methods for applying individual stages of machine design. Topics related to engineering work are also discussed, such as the rationale for choosing the type of solution, cost-effectiveness of the design, methods for creating estimates, etc <b>Exercises:</b> selected computational exercises in the field of mechanical engineering-not discussed earlier in the classes in previous semesters, such as: pressure and shrink joints, calculation and selection of plain bearings, calculation of approximate and final dimensions of bearings, etc. selected topics in the field of general design analysis <b>Laboratory:</b> analysis of selected previous solutions on real models, 3D design of selected machine elements (from the topic of lectures and practical classes. Preliminary evaluation of the selected solutions.
Didactic (educational) methods:	Computer-based classes method of a laboratory project using real objects / audiovisual means
Course assessment type, the criteria for assessing the achieved learning outcomes, and the method of calculating the final grade:	The subject enrolled on the basis of the final colloquium assessment, as well as the sum of points from partial individual classes during laboratory and practical classes.

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	knows and understands the design principles of machine parts and various types of mechanical structures	k_wg09	lecture, laboratory exercises	assessment test	verification / correctness of the task
U1	can, in accordance with the specified specification and accepted preliminary assumptions, design and implement a simple device, object, system or process typical of the design process	k_uw09 k_uw10	lecture, workout laboratory exercises	assessment credit	verification / correctness of the task
K1	is ready to comprehensively analyze and effectively perform the tasks set, and in case of difficulties in solving them, use the opinion of experts	k_kk02	lecture, workout laboratory exercises		talk

Literature and teaching aids
1. Wydawnictwa seryjne podstawy konstrukcji maszyn PWN 2. Dietrich M.(red): Podstawy konstrukcji maszyn. Warszawa PWN i WNT 3. Dietrych J.: System i konstrukcja. Warszawa, WNT 1978 4. Ochęduszek K.: Koła zębate. Warszawa, WNT 1985 5. Mazanek E. (red): Podstawy konstrukcji maszyn. Częstochowa. Wyd. Politechniki Częstochowskiej 1997 6. Mazanek E., Kasprzycki A., Kania L.: Ćwiczenia laboratoryjne z podstaw konstrukcji maszyn i komputerowego wspomaganie projektowania. Częstochowa. Wyd. Politechniki Częstochowskiej 2003 Wydawnictwa seryjne podstawy konstrukcji maszyn PWN 7. Dietrich M.(red): Podstawy konstrukcji maszyn. Warszawa PWN i WNT 8. Dietrych J.: System i konstrukcja. Warszawa, WNT 1978 9. Ochęduszek K.: Koła zębate. Warszawa, WNT 1985 10. Mazanek E. (red): Podstawy konstrukcji maszyn. Częstochowa. Wyd. Politechniki Częstochowskiej 1997 11. Mazanek E., Kasprzycki A., Kania L.: Ćwiczenia laboratoryjne z podstaw konstrukcji maszyn i komputerowego wspomaganie projektowania. Częstochowa. Wyd. Politechniki Częstochowskiej 2003

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	15 [h]
Participation in .... classes/laboratory classes	X	X	15[h] 15[h]
Meeting with teachers during their duty hours	2 [h]	X	X
Preparation for lectures/classes/.... , Preparation for ... credit / exam	X	18 [h] 10 [h]	X
Total student workload	2 [h] / 0,1 ECTS	28 [h]/ 1,1 ECTS	45[h] / 1,8 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, przewlekłymi chorobami).</p>

