SYLLABUS

Course description

Course code	Course	**ANALIZA WYMIAROWA KONSTRUKCJI**	
MB/O/I/NST/C2A.3		**DIMENSIONAL ANALYSIS OF THE CONSTRUCTION**	
Language of instruction	English		
Academic year	2023/2024		
field of study:	Mechanical Engineering		
field of specialisation:	Designing and manufacturing of machines		
Educational level	first-cycle studies		
Education profile	general academic		
Mode of study	Part-time study		
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
	Lectures	8 [h]	2 ECTS
	Classes	12 [h]	
Linkage of the course – with the education profile	related to the scientific activity carried out in the discipline that it belongs to course of study (general academic profile)		2 ECTS
Linkage of the course – with qualifications	it is used for obtaining the student's competence engineering services		2 ECTS
Linkage of the course – with science discipline	Mechanical engineering		2 ECTS
Form of teaching	Traditional – classes organized at the University /classes conducted using online learning methods and techniques		
Prerequisites	Basic knowledge and skills in mathematics and metrology		
Department	Faculty of Mechanical Engineering		
Coordinator	Tomasz Mazur PhD .Eng.		
The website of the basic organizational unit	www.wm.uniwersytetradom.pl		
E-mail address, phone number of the coordinator	Tomasz.mazur@uthrad.pl phone :76-86		

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

Learning Objective:	C1-the purpose of the classes is to acquire the right selection skills methods for determining tolerances and dimensional deviations in design and technology of machinery and equipment.
Curriculum Content:	The content of the classes is related to The conducted research scientific. Lecture: mathematical operations on tolerated dimensions, calculation methods. Analysis of adjustment dimensions (tolerance of sum and difference, definitions of adjustment and accident dimensions, types of dimensional and technological bases, symmetry of tolerated dimensions). Basic concepts of probability when applied to the summation of tolerated dimensions. Numerical characteristics of random variables numerical characteristics of some distributions probability of continuous type. Summation rules probability distributions. Dimensional chains. Interchangeability of machine parts. Tolerance calculation methods component dimensions in dimensional chains for total and partial interchangeability by analytical methods (MJT, MJKD, MJW, MMK). Analysis of dimensional distribution accident in the dimensional chain. Principles of substitution technological and structural. Selective interchangeability. Exercises: numerical examples from tolerance arithmetic (addition, subtraction, multiplication, division, multiplication and elements of numerically tolerated dimensions). Numerical examples calculations of adjustment dimensions for various technological operations (in the machining of holes and planes of any machine parts such as bodies, stepped rollers, levers, etc.). Numerical examples of calculating the accident dimension in dimensional chains for total and partial interchangeability. Numerical examples of calculation of component cell tolerances in dimensional chains for total and partial interchangeability by four calculation methods (MJT, MJKD, MJW, MMK).
Didactic (educational) methods:	information lecture, accounting exercises
Course assessment type, the criteria for assessing the achieved learning outcomes, and the method of calculating the final grade:	The condition for passing the subject is to achieve all the required learning outcomes specified for the subject. Lecture: a positive assessment for the solved accounting task, taking into account the correctness of the result, the calculation method used, the independence of the work. Exercises: positive assessment for the solved accounting task, taking into account the correctness of the result, the calculation method used, the independence of work.

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	Defines numeric characteristics random variables and distributions continuous type probabilities	K_WG16	Lectures	Colloquium	final notes test written documents
U1	Can perform actions on acceptable dimensions, including calculate the dimension and tolerances and dimensional tolerances for full and partial interchangeability	K_UW02	Workout	Colloquium	Continuous + control presence
K1	Recognizes the need for replenishment expertise of competent authorities sources.	K_KK01	Workout	Evaluation verbal form	

Literature and teaching aids
1. Boothroyd G.: Assembly Automation and Product Design. CRC Press. 2005 2. Fischer Bryan R.: Mechanical Tolerance Stackup and Analysis. CRC Press. 2011 3. Alex Krulikowski: ULTIMATE GD+T POCKET GUIDE. Effective Training Inc. 2009 4. Jason Tynes, Make It Fit: Introduction to Tolerance Analysis for Mechanical Engineers, CreateSpace Independent Publishing Platform (2013)

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	8 [h]
Participation in .... classes/laboratory classes	X	X	12 h]
Meeting with teachers during their duty hours	2 [h]	X	X
Preparation for lectures/classes/.... , Preparation for ... credit / exam	X	25 [h] 3 [h]	X
Total student workload	2 [h]/ 0,1 ECTS	28 [h]/1,1 ECTS	20 [h]/ 0,8 ECTS
ECTS credits for the course	50 [h]/2 ECTS		

Additional information, comments
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. 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).