GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Tooling of manufacturing systems, PG_00064856		
Field of study	Mechanical Engineering		
Date of commencement of studies	February 2026	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Specialty subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division of Manufacturing and Production Engineering -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Adam Barylski	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	15.0	0.0	30

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	30	11.0	34.0	75

Subject objectives

Rules of universal workholders. Designs special workholders.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W12] identifies and interprets the main developmental trends and significant new achievements in the field of engineering and technical sciences and disciplines relevant to the course of study	Significance of instrumentation in manufacturing process	[SW3] Assessment of knowledge contained in written work and projects
[K7_W03] demonstrates a well-structured and theoretically grounded knowledge of the key issues in Mechanical Engineering to enable the design and diagnosis of mechanical systems, processes and devices	Significance toolhoders and instrumentation in transportation systems	[SW3] Assessment of knowledge contained in written work and projects
[K7_U15] evaluates the feasibility of advanced methods and tools for solving complex engineering tasks of a practical nature, characteristic of the field of study, and selects and applies appropriate methods and tools for this purpose	Rules of usage modular workholder and designs special workholders.	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject
[K7_U01] utilizes information obtained from the literature and other sources in the field of Mechanics and Mechanical Engineering and presents and analyses the results of solutions to technical problems in this field	Rules of usage universal workholder	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information

Subject contents

LECTURE: Significance of instrumentation in a machine components manufacturing process. Errors influcencing on accuracy of workholger development. Setting an object in the worhholder. Fastening an object in the workholder. Setting and fixing workholder in the machining tool. Principles of workholder design. Lathe chucks. Drill chucks. Milling fixtures. Modular fixtures. Toolholders. Assembly instrumentation. Instrumentation of transportation, manipulators and robots. Rules of computer aided and management of workplace aids. Principles of universal fixtures usage. Cost of instrumentation. PROJECT: Skills of setting and fastening objects in fixtures and implementation of machining fixture for a given operation.

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">Knowledge from recording design and manufacturing engineering</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Written test</td><td>60.0%</td><td>25.0%</td></tr>
<tr><td>Elaborate</td><td>60.0%</td><td>25.0%</td></tr>
<tr><td>Project</td><td>60.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Feld M.: Uchwyty obróbkowe. WN-T, Warszawa 2002.

Normy przedmiotowe.

Materiały informacyjne producentów oprzyrządowania.

Artykuły z zakresu przedmiotu w dostępnych internetowych bazach bibliotecznych.</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Dobrzański T.: Uchwyty obróbkowe. Poradnik konstruktora. WN-T, Warszawa 1987.

Feld M.: Projektowanie procesów technologicznych typowych części maszyn. WN-T, Warszawa 2012.

Poradnik Inżyniera. Obróbka skrawaniem. WN-T, Warszawa 1993.</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">Errors influencing on accuracy of workholger development.

Setting an object in the worhholder.

Fastening an object in the workholder.

Setting and fixing workholder in the machining tool.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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