GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Technical Mechanics 2, PG_00042007		
Field of study	Power Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	5	ECTS credits	5.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Katedra Mechaniki Konstrukcji -> Faculty of Ocean Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Bogdan Rozmarynowski	
	Teachers	dr hab. inż. Bogdan Rozmarynowski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	15.0	0.0	0.0	0.0	45

E-learning hours included: 0.0

Additional information:
Lecture - distance learning

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	45	10.0	70.0	125

Subject objectives

Teaching of the strength material basis and its applications to analysis of stresses state and displacements of the structure elements are an objective of the technical mechanics.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W04	Student can carry out a structural analysis of structures	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
K6_U02	Student can choose a proper method of analysis and design of structures	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools

Subject contents

1) Introduction, 2) Analysis of stress and strain, stress-strain relationship, 3) Axially loaded members, 4) Moments of inertia, 5) Beams in bending, 6) Deflections due to bending, 7) Eccentrically loaded columns, 8) Shear, 9) Torsion of rods and thin-walled beams, 10) Combined problems, 11) Buckling of axially loaded columns, 12) Energy methods - displacements, 13) Axially symmetric shells, 14) Cables

Prerequisites and co-requisites

Knowledge of static's

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written colloquiums	20.0%	60.0%
Written exam	10.0%	40.0%

Recommended reading

Basic literature	1) Bowes, Russel, Suter, Mechanics of Engineering Materials, John-Wiley & Sons, 1986. 2) Ambrose J., Simplified Mechanics and Strength of Materials, New York, John Wiley &Sons, 2002,; 3)Ross C.T., Chilver A., Strength of Materials and Structures; Elsevier, 1999
Supplementary literature	Singh U.K., Dvivedi M.; Problems and Solutions in Mechanical Engineering; New Age, 2007
eResources addresses	Adresy na platformie eNauczanie: Mechanika Techniczna II (PG_00042007), I stop., Energetyka, Powt., [W,C], [BR], zimowy, 22/23 - Moodle ID: 25935 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25935

Example issues/ example questions/ tasks being completed	- Determination of stress state in bending of beams - Displacements of structures - Critical load and stress of compressed column
Work placement	Not applicable