

FACULTY:	Department of Mechanical Engineering
FIELD OF STUDY:	Mechanics and Machine Building
ERASMUS COORDINATOR OF THE FACULTY:	Dr hab. inż. Agnieszka Kułakowska, Prof. PK
E-MAIL ADDRESS OF THE COORDINATOR:	Dr hab. inż. Agnieszka Kułakowska, Prof. PK
COURSE TITLE:	Material strength
LECTURER'S NAME:	Dr hab. inż. Agnieszka Kułakowska, Prof. PK
E-MAIL ADDRESS OF THE LECTURER:	<a href="mailto:agnieszka.kulakowska@tu.koszalin.pl">agnieszka.kulakowska@tu.koszalin.pl</a>
COURSE CODE (USOS):	7
ECTS POINTS FOR THE COURSE:	4 ECTS
ACADEMIC YEAR:	2025/2026
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30
LEVEL OF THE COURSE: (1 <sup>st</sup> cycle, 2 <sup>nd</sup> cycle, 3 <sup>rd</sup> cycle)	1 <sup>st</sup> cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lecture, practice
LANGUAGE OF INSTRUCTION:	<ul style="list-style-type: none"> <li>• English full time scheme for classes with 5 and more international Erasmus+ students enrolled/accepted;</li> <li>• English 50% individually with the teacher + Polish 50% with Polish students or individual project work-scheme for classes with less than 5 international Erasmus+ students enrolled/ accepted;</li> </ul>
ASSESSMENT METOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam
COURSE CONTENT:	<p>Determination of stress and strains- Hooke's law. Quantitative analysis of straight bars statically determinate and statically indeterminate in tension and compression. Analysis of bending a straight bar. Determination of stresses in a bending bar. Determination of stresses in the beams. Bending diagonal beams. The graphs of bending moments, shear forces and normal stress determination within the framework of statically determinate. Basic concepts and determine the strength of materials. The concept of strain - strain of pure volume, purely amorphous. Elements of the theory of elasticity of the elastic properties of the material, the strength properties of the material. Hooke's law for simple stretching. Tension and compression of straight bars. Bending simple beams. Pure bending of simple beams with the participation of shear forces. Torsion bars. Analysis of stress and strain. Complex strength.</p>
ADDITIONAL INFORMATION:	

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