

(faculty stamp)

COURSE DESCRIPTION

Z1-PU7

WYDANIE N1

Strona 1 z 2

1. Course title: TECHNICAL MECHANICS		2. Course code		
3. Validity of course description: 2012/2013				
4. Level of studies: BSc programme				
5. Mode of studies: intramural studies				
6. Field of study: POWER ENGINEERING		(FACULTY SYMBOL) RIE		
7. Profile of studies: general				
8. Programme: SUSTAINABLE ENERGY ENGINEERING				
9. Semester: 2nd				
10. Faculty teaching the course: Institute of Power Engineering and Turbomachinery				
11. Course instructor: Dr hab. inż. Grzegorz Nowak				
12. Course classification: fundamental				
13. Course status: compulsory				
14. Language of instruction: English				
15. Pre-requisite qualifications: basics of technical mechanics				
16. Course objectives: provide knowledge in the field of technical mechanics				
17. Description of learning outcomes:				
Nr	Learning outcomes description	Method of assessment	Teaching methods	Learning outcomes reference code
1.	Student has a general knowledge of the concepts of classical physics, a basic knowledge of the general laws of physics, physical quantities and fundamental interactions	Exam	Lecture	K_W02
2.	Student has knowledge of basic principles of mechanics and strength of materials	Test/ Exam	Lecture	K_W06
3.	Student can obtain information from literature, databases and other carefully selected sources, integrating the information, making their interpretation, drawing conclusions and formulating and justifying opinions	Exam	Lecture	K_U01
4.	Student has the ability to carry out calculations in vector spaces, is able to use the language of vectors in technical issues	Test/ Exam	Class	K_U07
5.	Student is able to analyze and solve simple physical problems based on the known laws and methods of physics, in particular, understands the basic laws of physics and can explain on the basis of the course of physical phenomena, can take advantage of known laws of physics to solve common problems in physics	Test/ Exam	Class	K_U08
6.	Student can model simple mechanical systems, resulting in the analysis of their work and using methods of engineering graphics	Exam	Class	K_U15
7.				
8.				
18. Teaching modes and hours				
Lecture 30 Class 30				
19. Syllabus description:				
Lecture: Fundamental laws and assumptions of solid mechanics; statics of a particle; vectors – decomposition of a force vector; equilibrium of a particle; force in space; rigid body; moment of a force; force couple; equivalent force systems; force in space; constraint reactions in the plane; body equilibrium; constraint reactions in space; frames; shear force and moments in beams; kinematics and dynamics of a particle; kinematics of a body.				
Class: resultant force and moment; equilibrium of concurrent forces; equilibrium in the plane; determination and drawing of internal forces and moments; frames; velocities and accelerations in plane kinematics.				
20. Examination: yes				

21. Primary sources:

J.L. Meriam, L.G. Kraige, Engineering Mechanics: Statics, Wiley, 2011
 A. Urugal, Mechanics of Materials Willey, 2008

22. Secondary sources:

Dyłaq Z., Jakubowicz A., Orłóś Z., Wytrzymałość Materiałów, WNT, 2007
 Niezgodziński T., Niezgodziński M., Zadania z wytrzymałości materiałów, PWN, 1998

23. Total workload required to achieve learning outcomes

Lp.	Teaching mode :	Contact hours / Student workload hours
1	Lecture	30/40
2	Classes	30/32
3	Laboratory	/
4	Project	/
5	BA/ MA Seminar	/
6	Other	3/15
	Total number of hours	63/87

24. Total hours: 150**25. Number of ECTS credits:** 5**26. Number of ECTS credits allocated for contact hours:** 2**27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects):** 2**26. Comments:**

Approved:

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 (date, Instructor's signature)

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 (date, the Director of the Faculty Unit signature)