

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Technical mechanics I		Code 1010604121010214131
Field of study Mechanical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 18 Classes: 13 Laboratory: - Project/seminars: -		No. of credits 5
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 5 100%
Responsible for subject / lecturer: Dr hab. inż. Maciej TABASZEWSKI email: Maciej.Tabaszewski@put.poznan.pl tel. 61 665 23 90 Faculty of Mechanical Engineering and Management ul. Jana Pawła II 24, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic mathematics in the field of vector calculus, differential and integral calculus and physics (basic mechanics)
2	Skills	Logical and creative thinking, using the Internet and library resources
3	Social competencies	Understands the need for continuous learning and acquiring new knowledge
Assumptions and objectives of the course: Improving students' knowledge in the field of statics and kinematics, and the transfer of theoretical knowledge and practical skills necessary to study the strength of materials, theory of machines and mechanisms, and the basics of machine design.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Has a structured knowledge in the main branches of technical mechanics: statics, kinematics of a particle and rigid body. - [K1A_W04]		
Skills: 1. Is able to obtain information from the literature, internet, databases and other sources. Can integrate the information to interpret and learn from them, create and justify opinions. - [K1A_U03] 2. Students can build model a mechanical system (including trusses) - [K1A_U07] 3. Student can describe mathematically movement of the particle and mechanical system. - [K1A_U07]		
Social competencies: 1. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment and responsibility for own decisions. - [K1A_K02]		
Assessment methods of study outcomes		
Lecture - the test. Classes - two tests performed in the semester.		
Course description		

Selected topics from vector algebra. The axioms of statics. Supports and their reactions. Friction and friction law. Internal and external forces. The general condition of the balance of any material system. Convergent forces: reduction of the system, the equilibrium conditions, the theorem of the three modes. A pair of power. General system of forces: reduction of the system, the equilibrium conditions. Special cases of any system of forces. System statically determinate and statically indeterminate. Plane trusses. Centers of gravity of solids, surfaces and lines. Kinematics - equation of motion, velocity, and acceleration. Movement in the natural and polar coordinates. velocity and acceleration of a point of the body in general motion. Special cases of the general body movement: the rotary, spherical and plane movement.

Basic bibliography:

1. Sałata W., Mechanika ogólna w zarysie, Poznań, Wyd. PP 1998.
2. Leyko J., Mechanika ogólna. T. 1, Warszawa, PWN 2008.
3. Misiak J., Mechanika ogólna. T. I , Warszawa, WNT 1995.
4. Misiak J. Zadania z mechaniki ogólnej. Część I i II, Warszawa, WNT 1994.
5. Nizioł J. Metodyka rozwiązywania zadań z mechaniki. Warszawa, WNT 2002.
6. Mieszczerski I. W., Zbiór zadań z mechaniki. Warszawa, PWN 1969.

Additional bibliography:

1. Osiński Z. Mechanika ogólna. Warszawa, PWN 2000.
2. Awrajcewicz J. Mechanika techniczna, Warszawa WNT 2009

Result of average student's workload

Activity	Time (working hours)	
1. Preparation for the lecture	5	
2. Participation in the lecture	30	
3. Fixing the lecture	10	
4. Consultation for the lecture	3	
5. Preparing to pass the lecture	10	
6. Participation in the completion of the lecture	2	
7. Preparation of practical classes	10	
8. Participation in the classes	15	
9. Consultation for the classes	10	
10. Preparing to pass the classes	10	
11. Participation in the completion of the classes	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	127	5
Contact hours	72	3
Practical activities	0	0