

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Mechanics		Code 1011101221011000143
Field of study Safety Engineering - Full-time studies - First-	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) full-time	
No. of hours Lecture: 30 Classes: 15 Laboratory: - Project/seminars: -		No. of credits 3
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		ECTS distribution (number and %)
Responsible for subject / lecturer: MSc Eng. Jacek Kroczak email: jacek.kroczak@put.poznan.pl tel. 61 665 2042 Faculty of Working Machines and Transportation ul. Piotrowo 3, 60-965 Poznań		Responsible for subject / lecturer: Prof. Janusz Mielniczuk email: janusz.mielniczuk@put.poznan.pl tel. 61 665 2335 Faculty of Working Machines and Transportation ul. Piotrowo 3, 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Knowledge of mathematics and physics
2	Skills	Application of principal rules of physics during solving simple problems of kinematics and dynamics
3	Social competencies	Creative and consistent during solving the problems
Assumptions and objectives of the course: Learning of theoretical and practical basics of applied mechanics in order to solve independently the selected mechanical problems		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Student knows equilibrium problems of convergent and arbitrary force systems, moments of inertia of plane figures and solids, kinematics and dynamics of material particle and rigid body, vibrations of material systems. - [K1A_W07] 2. Student has knowledge about life cycle of products, objects and technical systems. - [K1A_W19] 3. Student knows basic methods and tools applied in techniques. - [K1A_W23]		
Skills: 1. Student can gather, integrate and interpret information from literature, data bases and other sources, and make conclusions. - [K1A_U01] 2. Student can use analytical and simulation methods to formulation and solving engineering tasks. - [K1A_U09] 3. Student can conduct a critical analysis of the ways in which technical solutions function. - [K1A_U13]		
Social competencies: 1. Student is aware of responsibility of his own work and is ready to follow the rules of group working. - [K1A_K03] 2. Student can perceive a cause and effect dependency in the realization of goals. - [K1A_K04]		
Assessment methods of study outcomes		

Formative assessment: a) In regards to classes, on the basis of written tests b) Regarding lectures: on the basis of oral or written assignments relating to the material covered during current or previous lectures. Collective assessment: a) In respect to classes: the average of marks given b) Considering lectures: written exam		
Course description		
Basic concepts, rules and axioms of mechanics. Statics: force, moment of force and couple of forces, plane convergent and arbitrary force systems, spatial systems, some remarks on trusses, centres of gravity and moments of inertia of plane figures and solids. Sliding and rolling friction. Kinematics: kinematics of material particle and rigid body, plane motion, rotary motion, rotation about a fixed point, relative motion, Coriolis acceleration. Dynamics: dynamics of material particle and rigid body, d'Alembert's principle, equation of motion of material particle and rigid body, mechanical vibrations, work and power, mechanical efficiency, laws of conservation. Elements of fluid mechanics.		
Basic bibliography:		
Additional bibliography:		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lectures	30	
2. Participation in classes	15	
3. Preparation to exam	15	
4. Preparation to classes	7	
5. Preparation to written tests	15	
6. Exam	2	
7. Discussion about the exam results	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	86	3
Contact hours	49	2
Practical activities	15	1