

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Ergonomics		Code 1010602121010622331
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: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: - Laboratory: - Project/seminars: -		No. of credits 1
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 Technical sciences		ECTS distribution (number and %) 1 100% 1 100%
Responsible for subject / lecturer: Marek Zablocki PhD (Eng) email: Marek.Zablocki@put.poznan.pl tel. 616652056 Faculty of Machines and Transport Piotrowo Street 3, 60-965 Poznan		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	basic knowledge from the field of theory of machines, machine structure, science about man;
2	Skills	logical thinking, utilisation of information acquired from the library, Internet, standards, catalogues;
3	Social competencies	understanding the need of acquiring transferred knowledge;
Assumptions and objectives of the course: Gaining knowledge on the subject: significance of ergonomomy in the activities of engineers		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Has knowledge about safety and ergonomics in the design and operation of the machines and the risks that machines create for the environment. - [K2A_W08]		
Skills: 1. Is able to perform a fairly complex design project of an average working machine or a subsystem using modern CAD tools, - [-]		
Social competencies: 1. Understands the need for lifelong learning; is able to inspire and organize the learning process of others. - [K2A_K01] 2. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment, is aware of responsibility for decisions. - [K2A_K02] 3. Is able to set priorities for realization of undertaken tasks. - [K2A_K04] 4. Is aware of social role of mechanical engineer, understands the need for and is able to deliver opinions and knowledge in the field of machine design, particularly through the media. - [K2A_K06]		
Assessment methods of study outcomes		
Lecture: course credits obtained on the basis of a colloquium		

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<p>? Basic concepts: origins of ergonomics as a scientific discipline, legal protection of man;</p> <p>? Position of ergonomic designing in the methodology of technical designing in machine construction (requirements in the process of technical designing);</p> <p>? Anthropotechnical and sociotechnical systems, somatic and receptor interrelationships in the system;</p> <p>? Analysis of anthropometric, biomechanical and psychic features and assisting design work in ergonomics: traditional approach and utilisation of CAD systems, motion capture devices or 3D scanning;</p> <p>? Analysis of anthropometric and biomechanical features in virtual features;</p> <p>? Detailed principles of product ergonomic designing in machine construction;</p> <p>? Contemporary fields of ergonomic activity, e.g.: ergonomics for senior citizens and persons with disabilities; ergonomics of extreme works; ergonomics of leisure time and sport (design criteria, requirements, standardisation);</p> <p>? Instances of knowledge integration in ergonomic designing: e.g.: typography and its significance for designing of signalling and controlling equipment; building engineering and the applied canons of human body; designing of forms of technical objects employing empirical investigations of somatic and receptor traits of the human body;</p> <p>? Development trends in designing for needs of ergonomics.</p>		
Basic bibliography:		
<p>1. 1. Górka E.: Ergonomia, Wyd. Politechniki Warszawskiej, W-wa 2002</p> <p>2. 2. Ergonomia produktu. Ergonomiczne zasady projektowania produktów przemysłowych, praca zbiorowa pod redakcją J. Jabłońskiego, Wydawnictwo Politechniki Poznańskiej, Poznań 2006</p> <p>3. 3. Pacholski, L.: Ergonomia, Wydawnictwo Politechniki Poznańskiej, Poznań 1986</p> <p>4. 4. Tytyk E.: Projektowanie ergonomiczne, Wydawnictwo Naukowe PWN, Warszawa-Poznań 2001</p>		
Additional bibliography:		
<p>1. 1. Słowikowski J.: Metodologiczne problemy projektowania ergonomicznego w budowie maszyn, Wydawnictwo Centralny Instytut Ochrony Pracy, Warszawa 2000</p> <p>2. 2. Winkler T.: Komputerowo wspomaganie projektowanie systemów antropotechnicznych, WNT, Warszawa, 2005</p> <p>3. 3. Cooper R.: Rehabilitation Engineering Applied to Mobility and Manipulation, Institute of Physics Publishing Bristol and Philadelphia, Bristol 1995</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. -	25	
Student's workload		
Source of workload	hours	ECTS
Total workload	25	1
Contact hours	17	0
Practical activities	0	0