

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject (-)		Code 1010331111011128979
Field of study Automatic Control and Robotics	Profile of study (general academic, practical) general academic	Year /Semester 1 / 1
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: 15 Classes: - Laboratory: - Project/seminars: -		No. of credits 1
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 1 100% 1 100%
Responsible for subject / lecturer: dr inż. Beata Mrugalska email: beata.mrugalska@put.poznan.pl tel. +48(61) 6653364 Faculty of Engineering Management ul. Strzelecka 11 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Principal knowledge from the scope of the secondary school
2	Skills	Skill of analyzing interdisciplinary problems and application into practice the theoretical knowledge in conditions in work and everyday life, as well as teamwork
3	Social competencies	Responsibility for own actions and subordinate people, independence of thinking, managing a team
Assumptions and objectives of the course: Presenting basic issues concerning ergonomics and Occupational Health and Safety in modern companies and in everyday private life. Giving patterns for solving problems concerning the formation of conditions at work with use of, for example, diagnostics and reduction of occupational risk and designing ergonomic solutions. Acquainting students with principle legal regulations from the area of the copyright of the industrial property law and with procedures concerning inventions		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. 1. Student has the basic knowledge on the device life cycle and chosen systems of security applied in automation and robotics - - [[T1A_W06]]		
2. 2. Student has the basic knowledge necessary for the understanding conditions exceeding beyond technical aspects and which refer to the engineer and the process of automation and robotics in the industry and in households, he/she knows basic OSH rules for the industry - - [[T1A_W08]]		
3. 3. Student has the basic knowledge from the area of intellectual property protection and the patent law - - [[T1A_W10]]		
Skills:		
1. 1. Student is able to obtain information from literature, databases and other resources, also has the skill of self-education in order to improve and update own professional competencies - - [[T1A_U01;T1A_U05]]		
2. 2. Student is able to formulate and solve a determined task enclosing designing automatic and robotic systems and to notice their aspect that exceed beyond techniques and enter into the sphere of environment, economy and law - [[T1A_U10;T1A_U12]]		
3. 3. Student is able to use principles of Occupational Safety and Health - - [[T1A_U11]]		
Social competencies:		
1. 1. Student is aware of the importance of non-technical aspects of the engineer activity and their consequences, including the influence to the natural environment, work environment and the responsibility for decisions he makes. - [[T1A_K02]]		

Assessment methods of study outcomes		
Two case studies. Checking attendance.		
Course description		
<p>The genesis of the OSH and ergonomics issue. Objectives and tasks of the OSH activity and the ergonomic engineering. Systems of work protection in Poland and other countries. Legal documents connected with the OSH activity and ergonomic standards. Systems man-to-technical object. Hazards identification on workstations. Technical and organizational methods of reducing the excessive occupational risk. Anthropometric data in designing machines and workspace. Apparatus measurements and assessment of material parameters of the work environment. Examples of technical and organizational solutions for upgrading the safety and ergonomic quality of machines and work conditions.</p> <p>The idea of copyright. Basic legal regulation of the copyright. The notion of industrial property and forms of its legal protection. The plagiarism and the piracy - legal effects. The patent law, protection law and registration law. Types of creative works and forms of their protection: invention, utility model, industrial design, trademark. Proceedings in the patent office the Republic of Poland. European patent.</p>		
Basic bibliography:		
<p>1. Berlin C. and Adams C., 2017. Production Ergonomics: Designing Work Systems to Support Optimal Human Performance. London: Ubiquity Press.</p> <p>2. McCauley P. 2012. Ergonomics. Foundational Principles, Applications, and Technologies. CRC Press, Boca Raton.</p> <p>3. Andersen B., 2006. Intellectual Property Rights: Innovation, Governance and Institutional Environment. Edward Elgard Publishing Limited, Cheltenham.</p>		
Additional bibliography:		
<p>1. Dul J., Weerdmeester B., 2008. Ergonomics for Beginners. A Quick Reference Guide. Third Edition. CRC Press, Boca Raton.</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Lecture	15	
2. Student's individual work	10	
3. Discussion on practical solutions	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	27	1
Contact hours	15	1
Practical activities	2	0