

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Ergonomics, safety and hygiene in work and protection of</b>		Code <b>1010334111011125152</b>
Field of study <b>Control Engineering and Robotics</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>1 / 1</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>10</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>1</b>
Status of the course in the study program (Basic, major, other) <b>other</b>		(university-wide, from another field) <b>university-wide</b>
Education areas and fields of science and art <b>study effects leading to the acquisition of engineering qualifications</b>		ECTS distribution (number and %) <b>1 100%</b>
<b>Responsible for subject / lecturer:</b> -prof. dr hab. inż. Edwin Tytyk email: -edwin.tytyk@put.poznan.pl tel. ++ 48 61665 33 77 -Faculty of Engineering Management -60-965 Poznań, Strzelecka str. 11		<b>Responsible for subject / lecturer:</b> -dr inż. Bogna Mateja email: -bogna.mateja@put.poznan.pl tel. ++48 61665 34 38 -Faculty of Engineering Management -60-965 Poznań, Strzelecka str. 11
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Principal knowledge from the scope of the secondary school
2	<b>Skills</b>	Skill of analyzing interdisciplinary problems and application into practice the theoretical knowledge in conditions in work and everyday life, as well as teamwork
3	<b>Social competencies</b>	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. Presenting relations between technique, human well-being, ecology, economy and sociology. Acquainting students with principle legal regulations from the area of the copyright of the industrial property law and with procedures concerning inventions
<b>Assumptions and objectives of the course:</b> 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. Presenting relations between technique, human well-being, ecology, economy and sociology. Acquainting students with principle legal regulations from the area of the copyright of the industrial property law and with procedures concerning inventions		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
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]]		
<b>Skills:</b>		
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]]		

<b>Social competencies:</b>
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]]

<b>Assessment methods of study outcomes</b>
-Preparation (even during classes) of short elaborations on, for example: - differentiation of elements in exemplary man-to-work systems, - identification of threats for chosen workstations, - potential causes of accidents, risks of occupational diseases, - methods and programs for risk prevention

<b>Course description</b>
-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 as an example of a workstation. Threats identification on workstations. Technical and organizational methods of reducing the excessive occupational risk. The assessment of the physical workload. The assessment of the psychological workload. 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. 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, geographical indications, topography of integrated circuits, streamlining conclusion. Proceedings in the patent office the Republic of Poland. European patent.

<b>Basic bibliography:</b>
<ol style="list-style-type: none"> <li>1. Tytyk E., Butlewski M., Ergonomia w technice; Wydawnictwo Politechniki Poznańskiej, Poznań, 2011</li> <li>2. Tytyk E., Projektowanie ergonomiczne; Wydawnictwo Naukowe PWN, Warszawa, 2001</li> <li>3. Horst W. (red.), Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy (4 tomy); Wydawnictwo Politechniki Poznańskiej, Poznań, 2011</li> <li>4. Horst W., Ryzyko zawodowe na stanowisku pracy, Część I. Wyd. Politechniki Poznańskiej, Poznań, 2004</li> <li>5. Koradecka D. (red.), Bezpieczeństwo pracy i ergonomia (2 tomy); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 1999</li> <li>6. Rączkowski B. BHP w praktyce. Wydanie XII. Wyd. ODDK Gdańsk, 2009</li> <li>7. Barta J., Markiewicz R., Prawo autorskie i prawa pokrewne. Wyd. Zakamycze, 2004</li> <li>8. Szewc A., Jyż G., Prawo własności przemysłowej. Wyd. C.H. Beck, Warszawa, 2004</li> <li>9. Branowski B., Metody twórczego rozwiązywania zadań projektowych. Wyd. NOT, Poznań, 1999</li> </ol>

<b>Additional bibliography:</b>
<ol style="list-style-type: none"> <li>1. Górka E., Tytyk E., Ergonomia w projektowaniu stanowisk pracy. Podstawy teoretyczne; Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 1998</li> <li>2. Górka E., Diagnoza ergonomiczna stanowisk pracy. Oficyna Wydawnicza Politechniki Warszawskiej, 1998</li> <li>3. Nowak E., Atlas antropometryczny populacji polskiej; Wydawnictwo Instytutu Wzornictwa Przemysłowego, Warszawa, 2000</li> <li>4. Koradecka D. (red.), Nauka o pracy ? bezpieczeństwo, higiena, ergonomia. Pakiet edukacyjny dla uczelni wyższych, (8 tomów); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 2000</li> <li>5. Własność przemysłowa w działalności gospodarczej. Przewodnik dla małych i średnich przedsiębiorstw (red. Marianna Zaręba). Wyd. Urząd Patentowy RP, Warszawa, 2003</li> <li>6. Ustawa z dn. 04 lutego 1994 r. o prawie autorskim i prawach pokrewnych.</li> <li>7. Ustawa z dn. 30 czerwca 2000 r. Prawo własności przemysłowej.</li> <li>8. Ustawa z dn. 16 kwietnia 1993 r. o zwalczaniu nieuczciwej konkurencji.</li> <li>9. Wzory przemysłowe w działalności małych i średnich przedsiębiorstw (opracowanie: Dobosz E., Gędek M., Podgórska A.), Wyd. Urząd Patentowy RP, Warszawa, 2005</li> <li>10. Kauffman A., Fustier M., Drevet A., Inwentyka. Metody poszukiwania twórczych rozwiązań. WNT, Warszawa, 1975</li> </ol>

<b>Result of average student's workload</b>	
<b>Activity</b>	<b>Time (working hours)</b>
1. 1. Lecture	10
2. 2. Student's individual work	10
<b>Student's workload</b>	

Source of workload	hours	ECTS
Total workload	10	1
Contact hours	10	1
Practical activities	0	0