

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Ergonomics, safety and hygiene in work and protection of</b>		Code <b>1010314311011124952</b>
Field of study <b>Power Engineering</b>	Profile of study (general academic, practical) <b>(brak)</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>15</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>(brak)</b>		(university-wide, from another field) <b>(brak)</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. 61-665-33-77; 61-665-33-74 Faculty of Engineering Management ul. Strzelecka 11; 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge from secondary school
2	<b>Skills</b>	Analysis of interdisciplinary problems
3	<b>Social competencies</b>	Independent thinking and working in a group
<b>Assumptions and objectives of the course:</b> Acquainting the students with basic health and safety regulations and ergonomics in modern industrial companies, as well as in non-professional life. Teaching some practical skills how to solve problems connected with development of working conditions inter alia, assessment and limitation of an excessive occupational risk, ergonomic diagnosing and designing the solutions which escalate safety and ergonomic quality of working conditions. Disclosing system dependencies between technology, human welfare, ecology, economy, sociology. Humanization of technology as the cause of establishing constructive and organizational solutions. Acquainting the students with current and fundamental legal regulations of copyright as well as industrial property and exploratory procedures, along with heuristic techniques which endorse innovation.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Has elementary knowledge of energetic machines? lifecycle - [[T1A_W06] ] 2. Has the basic knowledge that is necessary to understand the determinants of non-technical engineering activity in a household and an industry; is familiar with the basic principles of occupational health and safety in the industry - [[T1A_W08]] 3. Has an elementary knowledge of the intellectual property protection and patent law - [[T1A_W10]]		
<b>Skills:</b>		
1. Can obtain information from literature, databases, and other sources; has skills of self-learning in order to improve and update the professional competence - [[T1A_U01; T1A_U05] ] 2. In formulating and solving tasks which involve the design of energy devices, a student can detect their non-technical aspects, including environmental, economic and legal - [[T1A_U10; T1A_U12]] 3. Is able to apply the principles of health and safety at work - [[T1A_U11]]		
<b>Social competencies:</b>		
1. Has an awareness of and understands the non-technical aspects of consequences regarding engineering activity, including its impact on the environment and the related responsibility for the decisions - [[T1A_K02]]		

<b>Assessment methods of study outcomes</b>		
-The final test- multiple-choice test		
<b>Course description</b>		
<p>Genesis of problematic aspects in the area of health and safety and ergonomics. Tasks and objectives of health and safety as well as ergonomic engineering. Legal foundations for activities in the realm of health and safety. Human-technical object system as a representation of a workplace. Threats identification in workplace related to electrotechnology. Methods of occupational risk assessment in a workplace. Technical and organizational ways of limiting an excessive occupational risk. Assessment of physiological workload. Assessment of mental workload. Anthropometrical data in machines design and workspace. Instrument measurements and assessment of material parameters in working environment. Examples of technical and organizational solutions which boost safety and ergonomic quality of machines as well as working conditions.</p> <p>The concept of intellectual property. Basic regulations concerning copyright. The notion of industrial property and its forms of legal protection. Plagiarism and piracy, legal consequences. Patent law, protection law, registration law. Types of creative work and forms of their protection, invention, utility model, trade mark, geographical indications, topography of integrated circuits, innovative proposal. Procedures in Patent Office of the Republic of Poland. European Patent Office. Marketing strategies of industrial property. Heuristic methods of improving exploratory skills.</p>		
<b>Basic bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Tytyk E., Butlewski M., Ergonomia w technice (Ergonomics in technology); Wydawnictwo Politechniki Poznańskiej, Poznań, 2011</li> <li>2. Tytyk E., Projektowanie ergonomiczne (Ergonomic design); Wydawnictwo Naukowe PWN, Warszawa, 2001</li> <li>3. Horst W. (red.), Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy (4 tomy) (Ergonomics with elements of safety and health protection at work); Wydawnictwo Politechniki Poznańskiej, Poznań, 2011</li> <li>4. Horst W., Ryzyko zawodowe na stanowisku pracy, Część I (Occupational risk at workplace. Part 1). Wyd. Politechniki Poznańskiej, Poznań, 2004</li> <li>5. Koradecka D. (red.), Bezpieczeństwo pracy i ergonomia (2 tomy) (Occupational safety and ergonomics); 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 (Copyright and related rights). Wyd. Zakamycze, 2004</li> <li>8. Szewc A., Jyż G., Prawo własności przemysłowej (Industrial property rights). Wyd. C.H. Beck, Warszawa, 2004</li> <li>9. Branowski B., Metody twórczego rozwiązywania zadań projektowych ( Methods of creative solutions in solving project tasks). 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 (Ergonomics in workplace design. Theoretical basis.); Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 1998</li> <li>2. Górka E., Diagnoza ergonomiczna stanowisk pracy (Ergonomic diagnosis of workplaces). Oficyna Wydawnicza Politechniki Warszawskiej, 1998</li> <li>3. Nowak E., Atlas antropometryczny populacji polskiej (Anthropometric atlas of Polish population); Wydawnictwo Instytutu Wzornictwa Przemysłowego, Warszawa, 2000</li> <li>4. Koradecka D. (red.), Nauka o pracy ? bezpieczeństwo, higiena, ergonomia. Pakiet edukacyjny dla uczelni wyższych (Learning about work, safety, hygiene, ergonomics), (8 tomów); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 2000</li> <li>5. Własność przemysłowa w działalności gospodarczej (Industrial property in business activity). 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. (Act of 4 February 1994 on Copyright and Related Rights.)</li> <li>7. Ustawa z dn. 30 czerwca 2000 r. Prawo własności przemysłowej. (Act of June 30, 2000, the Industrial Property Law)</li> <li>8. Ustawa z dn. 16 kwietnia 1993 r. o zwalczaniu nieuczciwej konkurencji. (The Act of 16 April 1993 on unfair competition)</li> <li>9. Wzory przemysłowe w działalności małych i średnich przedsiębiorstw (Industrial designs of small and medium-sized enterprises )(opracowanie: Dobosz E., Gędek M., Podgórska A.), Wyd. Urząd Patentowy RP, Warszawa, 2005</li> <li>10. Kauffman A., Fustier M., Drevet A. Metody poszukiwania twórczych rozwiązań (Inventics: methods of searching for creative</li> </ol>		
<b>Result of average student's workload</b>		
Activity	Time (working hours)	
<b>Student's workload</b>		
Source of workload	hours	ECTS
Total workload	25	1

Contact hours	15	1
Practical activities	0	0