



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Ergonomics, safety and hygiene in work and protection of intellectual properties

### Course

Field of study

Power Engineering

Area of study (specialization)

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Level of study

First-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study general

academic Course

offered in technical

sciences

Requirements

compulsory

### Number of hours

Lecture

10

Tutorials

0

Laboratory classes

0

Projects/seminars

0

Other (e.g. online)

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

### Prerequisites

Student has consolidate knowledge from natural science, mathematics and physics, taught in secondary school

### Course objective

Presenting basic issues concerning ergonomics and Occupational Health and Safety in modern companies, as well as power engineering 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.



### Course-related learning outcomes

#### Knowledge

Student knows and understand the influence of the energetics transformations to natural environment [K1\_W08].

Student has the basic knowledge necessary for the understanding conditions exceeding beyond technical aspects, knows and understands the principles of Occupational Safety and Health which refer to the power engineering [K1\_W25].

Student knows and understands the necessity of intellectual property protection and the patent law [K1\_W26].

#### Skills

Student is able to apply principles of Occupational Safety and Health, manages to evaluate the influence of power engineering on environment [K1\_U17].

#### Social competences

Student is aware of the importance and comprehends of non-technical aspects of the power engineer activity and their consequences, including the influence to the natural environment, work environment and the responsibility for decisions he makes, cooperate in activities for social and natural environments [K1\_K02].

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows: Written multi-choice test after full cycle of lectures.

Attestation threshold: over 50% corrected answers.

Checking of attendance in lectures.

### Programme content

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. Threats identification on workstations. The main principles of saving people who are electrocuted.

Technical and organizational methods of reducing the excessive occupational risk. Systems human-totechnical object as an example of a workstation. The assessment of the physical workload. The assessment of the psychical 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.

### Teaching methods

Lectures with multimedial presentations.



Initiation discussions on themes connected with lecture subject.

## Bibliography

### Basic

1. Tytyk E., Bezpieczeństwo i higiena pracy, ergonomia i ochrona własności intelektualnych. Wydawnictwo Politechniki Poznańskiej, Poznań, 2017
2. Tytyk E., Butlewski M., Ergonomia w technice; Wydawnictwo Politechniki Poznańskiej, Poznań, 2011
3. Wejman M., Diagnozowanie środowiska pracy. Wydawnictwo Politechniki Poznańskiej, Poznań, 2012
4. Horst W., Ryzyko zawodowe na stanowisku pracy, Cz. I. Wyd. Politechniki Poznańskiej, Poznań, 2004
5. Koradecka D. (red.), Bezpieczeństwo pracy i ergonomia (2 vol.); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 1999
6. Rączkowski B. BHP w praktyce. Wydanie XIV. Wyd. ODDK Gdańsk, 2014
7. Barta J., Markiewicz R., Prawo autorskie i prawa pokrewne. Wyd. Zakamycze, 2004
8. Szewc A., Jyż G., Prawo własności przemysłowej. Wyd. C.H. Beck, Warszawa, 2004
9. Branowski B., Metody twórczego rozwiązywania zadań projektowych. Wyd. NOT, Poznań, 1999

### Additional

1. Górka E., Tytyk E., Ergonomia w projektowaniu stanowisk pracy. Podstawy teoretyczne; Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 1998
2. Górka E., Diagnoza ergonomiczna stanowisk pracy. Oficyna Wydawnicza Politechniki Warszawskiej, 1998
3. Nowak E., Atlas antropometryczny populacji polskiej; Wydawnictwo Instytutu Wzornictwa Przemysłowego, Warszawa, 2000
4. Koradecka D. (red.), Nauka o pracy ? bezpieczeństwo, higiena, ergonomia. Pakiet edukacyjny dla uczelni wyższych, (8 tomów); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 2000
5. Własność przemysłowa w działalności gospodarczej. Przewodnik dla małych i średnich przedsiębiorstw (red. Marianna Zaręba). Wyd. Urząd Patentowy RP, Warszawa, 2003
6. Pyrza A. (red.), Poradnik wynalazcy. Procedury zgłoszeniowe w systemie: krajowym, europejskim, międzynarodowym. Wyd. Urząd Patentowy RP, Warszawa, 2008
7. Kauffman A., Fustier M., Drevet A., Inwentyka. Metody poszukiwania twórczych rozwiązań. WNT, Warszawa, 1975
8. Ustawa z dn. 04 lutego 1994 r. o prawie autorskim i prawach pokrewnych.
9. Ustawa z dn. 30 czerwca 2000 r. Prawo własności przemysłowej.

## Breakdown of average student's workload

	Hours	ECTS
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Total workload	20	1,0
Classes requiring direct contact with the teacher	10	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	10	1,0

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<sup>1</sup> delete or add other activities as appropriate