



## COURSE DESCRIPTION CARD- SYLLABUS

Course name

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

### Course

Field of study

Mathematics in Technology

Area of study (specialization)

—

Level of study

first-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lectures

15

Tutorials

—

Laboratory classes

—

Projects/seminars

—

Other (e.g. online)

—

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer::

prof. dr hab. inż. Edwin Tytyk

Responsible for the course/lecturer::

dr inż. Małgorzata Wejman

### Prerequisites

Principal knowledge from the scope of the secondary school Skill of analysing interdisciplinary problems and application into practice the theoretical knowledge in conditions in work and everyday life, as well as teamwork.

### Course objective

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.

### Course-related learning outcomes

#### Knowledge

- has structured and theoretical knowledge in the field of technical sciences, including electrical engineering, electronic and automation;
- has the basic knowledge necessary to understand social, ethical, economic or legal issues, and other non-technical conditions of engineering activity; he/she understands the impact of social and civilization changes on lifestyle of the society;
- has a basic knowledge of the principles of ergonomics, occupational health and safety, and hazards occurring in industry and beyond it;
- knows and understands the basic legal and economic conditions related with professional activity, including the principles of creating and developing forms of individual entrepreneurship;
- knows and understands the basic concepts and principles of intellectual property protection, including copyright and patent law.

#### Skills

- is able to perceive their non-technical aspects in formulating and solving engineering problems, including environmental, economic and legal aspects;
- can operate on equipment, tools, etc. in accordance with general requirements and technical documentation; knows how to apply the principles of health and safety at work;
- is able to independently plan and implement self-education in order to raise and update his/her competences.

#### Social competences

- is able to think and act in a creative and entrepreneurial way, taking into account the safety, ergonomics of work and its economic aspects, is aware of the need to initiate activities for the public interest and responsibility for the effects of the team and individual participants;
- understands and appreciates the importance of intellectual honesty in its own and other people's activities; is ready to demonstrate reliability, impartiality, professionalism and ethical attitude;
- is aware of its social role as a graduate of a technical university, is ready to communicate popular scientific content to the society and to identify and resolve basic problems related to the field of study.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

**Lectures:** written multi-choice test after full cycle of lectures.



## Programme content

Update: 31.01.2020r.

### Lectures:

- 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 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:** written multi-choice test after full cycle of lectures.

## Bibliography

Basic

- Tytyk E., Bezpieczeństwo i higiena pracy, ergonomia i ochrona własności intelektualnych. Wydawnictwo Politechniki Poznańskiej, Poznań, 2017.
- Tytyk E., Butlewski M., Ergonomia w technice; Wydawnictwo Politechniki Poznańskiej, Poznań, 2011.



- Horst W. (red.), Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy (4 tomy); Wydawnictwo Politechniki Poznańskiej, Poznań, 2011.
- Horst W., Ryzyko zawodowe na stanowisku pracy, Część I. Wyd. Politechniki Poznańskiej, Poznań, 2004
- Koradecka D. (red.), Bezpieczeństwo pracy i ergonomia (2 tomy); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 1999.
- Rączkowski B. BHP w praktyce. Wydanie XIV. Wyd. ODDK Gdańsk, 2014.
- Barta J., Markiewicz R., Prawo autorskie i prawa pokrewne. Wyd. Zakamycze, 2004.
- Szewc A., Jyż G., Prawo własności przemysłowej. Wyd. C.H. Beck, Warszawa, 2004.
- Branowski B., Metody twórczego rozwiązywania zadań projektowych. Wyd. NOT, Poznań, 1999.

#### Additional

- Górski E., Tytyk E., Ergonomia w projektowaniu stanowisk pracy. Podstawy teoretyczne; Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 1998.
- Górski E., Diagnoza ergonomiczna stanowisk pracy. Oficyna Wydawnicza Politechniki Warszawskiej, 1998.
- Nowak E., Atlas antropometryczny populacji polskiej; Wyd. Instytutu Wzornictwa Przemysłowego, Warszawa, 2000.
- Koradecka D. (red.), Nauka o pracy – bezpieczeństwo, higiena, ergonomia. Pakiet edukacyjny dla uczelni wyższych, (8 tomów); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 2000.
- Własność przemysłowa w działalności gospodarczej. Przewodnik dla małych i średnich przedsiębiorstw (red. Marianna Zaręba). Wyd. Urząd Patentowy RP, Warszawa, 2003.
- Ustawa z dn. 04 lutego 1994 r. o prawie autorskim i prawach pokrewnych.
- Ustawa z dn. 30 czerwca 2000 r. Prawo własności przemysłowej.
- Wzory przemysłowe w działalności małych i średnich przedsiębiorstw (opracowanie: Dobosz E., Gędłek M., Podgórska A.), Wyd. Urząd Patentowy RP, Warszawa, 2005.
- Kauffman A., Fustier M., Drevet A., Inwentyka. Metody poszukiwania twórczych rozwiązań. WNT, Warszawa, 1975.

#### Breakdown of average student's workload



	Hours	ECTS
Total workload	27	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies)	12	0,5