COURSE DESCRIPTION CARD - SYLLABUS

Course name

Workplace Ergonomics

Course

Field of study

Mechanical Engineering

Year/Semester

III/1

Area of study (specialization)

technical sciences

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

English

Form of study

full-time

Requirements

elective

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

15

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

Dr. Wojciech ŁAPKA, PhD. DSc. Eng.

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Faculty of Mechanical Engineering

Jan Paweł II 24 Street, 61-139 Poznań

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Responsible for the course/lecturer:

Prerequisites

Knowledge: basic knowledge of engineering and management, mathemetics (core curriculum for secondary schools, basic level)

Skills: ability to solve elementary problems of engineering based on possessed knowledge, usage of mathematical and engineering issues, the ability to acquire information from indicated sources

Social competences: understanding the need of further education; willingness to cooperate with a team

Course objective

1. Obtaining knowledge of the principles of ergonomic design and analysis, diagnose technical

environment in manufacturing and management field, including psychophysiological human capabilities and basic requirements of safety at workplaces.

2. Developing teamwork skills.

Course-related learning outcomes

Knowledge

Student is able to define the basic engineering concepts in the range of course content, appropriate for the field of study, deepened knowledge of ergonomical aspects at workplaces including safety requirements.

Skills

Student is able to obtain information from the literature, databases and other carefully selected sources (also in j. English) in mechanics and mechanical engineering and other technical and engineering problems consistent with the field of study; can integrate the information obtained, to make their interpretation, as well as draw conclusions and formulate and justify opinions.

Student can analyse and assesst the workplace throughout the ergonomic concepts and safety requirements

Social competences

Student is able to cooperate in a team, be responsible for his/her position in the team and actively participate in presentation of project progress, set priorities for implementation of the task.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Evaluation of performed verbal presentations and final version of project that includes the ergonomical analysis of selected workplace that includes: microclimate, physical effort, psychic loads, break time, anthropometry, risk assessment, workplace environment design and analysis, workplace corrections and improvement, conclusions.

Programme content

Workplace ergonomics aims to expand students knowledge of principles of ergonomic design and analysis, diagnose technical environment in manufacturing and management field, including psychophysiological human capabilities and basic requirements of safety at workplaces. In the practical aspect (project) is developed the ergonomical analysis of selected workplace that include assessment/ measurements of: microclimate parameters, physical effort, psychic loads, break time, anthropometry, risk assessment, workplace environment design and analysis, workplace corrections and improvement.

Teaching methods

Project/Seminars: discussion about performed multimedia presentations that include the step by step ergonomical analysis of selected workplace that includes: microclimate, physical effort, psychic loads, break time, anthropometry, risk assessment, workplace environment design and analysis, workplace corrections and improvement.

Bibliography

Basic

1. Stack T. et al., Occupational Ergonomics a practical approach, John Wiley & Sons, Inc., 2016.

2. Hedge A., Ergonomic workplace design for health, wellnes, and productivity, CRC Press, Taylor & Francis Group, 2017.

3. MacLeod D., The Rules of Work - A Practical Engineering Guide to Ergonomics, CRC Press, Taylor & Francis Group, 2017.

Additional

1. Górska E., Ergonomia, projektowanie, diagnoza, eksperymenty, Oficyna Wydawnicza Politechniki Warszawskiej, , Warszawa 2007.

2. Opracowane przez Międzynarodowe Biuro Pracy we współpracy z Międzynarodowym Towarzystwem Ergonomicznym — Ergonomiczna lista kontrolna, Łódź, 1998, Oficyna Wydawnicza Instytutu Medycyny Pracy im. prof. dra med. Jerzego Nofera

3. W.M.Horst, N.Horst — Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Wprowadzenie., Łódź, 2011, Wydawnictwo Politechniki Poznańskiej [3] W.M.Horst, N.Horst — Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Zasady i wymagania związane z indywidualnymi cechami człowieka., Łódź, 2011, Wydawnictwo Politechniki Poznańskiej

4. W.M.Horst, N.Horst, G. Dahlke, A. Górny, W. F. Horst, W. Korchut — Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Zasady i wymagania związane z odbiorem i przetwarzaniem bodźców., Łódź, 2011, Wydawnictwo Politechniki Poznańskiej

5. W.M.Horst, N.Horst, G. Dahlke, A. Górny, W. F. Horst — Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Zasady i wymagania związane z materialnym środowiskiem pracy., Łódź, 2011, Wydawnictwo Politechniki Poznańskiej

Breakdown of average student's workload

	Hours	ECTS
Total workload	62	2,0
Classes requiring direct contact with the teacher	20	1,0
Student's own work (literature studies, preparation for seminar classes/tutorials, preparation for tests/exam, project preparation) [1]	42	1,0

[1] delete or add other activities as appropriate