

Warsaw University | Doctoral of Technology | School No. 2

**Course offered in the Doctoral School No. 2
– Spring semester of the 2021/2022 academic year**

TITLE
Industrial ergonomics
CONDUCTING UNIT
Doctoral School No 2
SCIENTIFIC DISCIPLINE
Management and quality studies
IMPLEMENTING UNIT
110000 - Faculty of Mechanical and Industrial Engineering
SUMMARY DESCRIPTION
<p>Designing work systems to support optimal human performance with the respect of his needs, opportunities and limitations.</p> <p>The aim of the course is:</p> <ul style="list-style-type: none"> - have basic knowledge of industrial ergonomics, - be able to apply the principles of industrial ergonomics in the design of technical objects, - understood the need for lifelong learning. <p>5. Assessment of noise/lighting/microclimate parameters in the workstation.</p> <p>Verification of learning outcomes:</p> <ul style="list-style-type: none"> - lecture: test - laboratory classes: reports from laboratories, classes and case studies, presentations of results and conclusions.
FULL DESCRIPTION
<p>Mastering the skills of an ergonomic view of working conditions.</p> <p>Psychophysical aspects of working conditions, such as:</p> <ul style="list-style-type: none"> - physical effort, - static load, - repetitive movements, - mental load, - work monotony,

- planning of working space,
- the impact of physical and mental pressure on work performance,
- material work environment.

Form of classes and their weekly duration (number of hours per semester):

- lecture - 10h
- laboratory classes - 20h

Laboratory classes:

1. Spatial structure of the workstation
2. Physical exertion
3. Assessment of musculoskeletal hazards MSD's
4. Assessment of mental workload
5. Material work environment

LITERATURE

Obligatory:

1. Górski E. (2021) Ergonomia. Projektowanie, diagnoza, eksperymenty, OWPW
2. Berlin C., Adams C. (2017) Production Ergonomics: Designing Work Systems to Support Optimal Human Performance, Ubiquity Press, London
3. Salvendy G., Karwowski W. (2021) Handbook of Human Factors and Ergonomics, 5th Edition. Wiley,
- Stanton N. (red.) (2019). Handbook of Human Factors and Ergonomics Methods. CRC Press

Complementary:

1. Górski E., Lewandowski J., 2016. Zarządzanie i organizacja środowiska pracy. Warszawa: Oficyna Wydawnicza Politechniki Warszawskiej
2. Górski E., 2007. Projektowanie stanowisk pracy dla osób niepełnosprawnych. Warszawa: Oficyna Wydawnicza Politechniki Warszawskiej
3. Górski E., 2016. Metody oceny ryzyka zawodowego Warszawa: Oficyna Wydawnicza Politechniki Warszawskiej
4. Sikorski M., 2013. Interakcja człowiek-komputer. Warszawa: Wyd. PJWSTK

LEARNING OUTCOMES

The graduate:

- knows the theories and general methodology of research in the field of identification, construction and reorganization of processes, with particular emphasis on production processes,
- knows the features of a human being as a creator and participant in organizational culture,
- is able to plan and conduct experiments, including measurements and computer simulations, interpret the obtained results and draw conclusions,
- is ready to recognize the importance of knowledge in solving cognitive and practical problems.

ASSESSMENT METHODS AND CRITERIA; COURSE COMPLETION FORM

Grading system:

Lecture:

1. Formative assessment - partially interactive form of lecture.
2. Summative assessment - conducting one test, test mark in the range of 2-5; to pass, it is required to obtain a grade ≥ 3 .

Laboratory:

1. Formative assessment: during classes, the performance of exercises is verified; the project is discussed and verified.
2. Summative assessment: the substantive value of the projects, the timely execution of works, editing of the project report and the result of the discussion with the teacher are assessed; laboratory grades: 2-5; to pass, it is required to obtain a grade ≥ 3 .

LANGUAGE OF THE COURSE		ECTS CREDITS
English		3
TYPE OF CLASSES	NUMBER OF HOURS	COURSE INSTRUCTOR
Lecture	10	Aneta Kossobudzka-Górska, dr inż.
Laboratory	20	Aneta Kossobudzka-Górska, dr inż.

ADDITIONAL INFORMATION

The course is realized within the SEED Project – NAWA STER Programme. Therefore, in order to take part in it, each participant is obliged to deliver to the PhD Students' Office the Declaration of the Project Participant concerning personal data. The document must be submitted until **March 1, 2022**.

The document can be found here:

https://www.sd.pw.edu.pl/sd_en/SEED-NAWA-STER