KARTA PRZEDMIOTU

Nazwa przedmiotu: ***Production engineering (ZIPAOZ>SI1PE22O)***
Nazwa w języku polskim:
Nazwa w jęz. angielskim:

Dane dotyczące przedmiotu:

Jednostka oferująca przedmiot: Wydział Organizacji i Zarządzania
Przedmiot dla jednostki: Politechnika Śląska
Cykl dydaktyczny: Semestr zimowy 2022/2023
Koordynator przedmiotu cyklu: Dr Kinga Stecuła

Domyślny typ protokołu dla przedmiotu:

EGZ

Język wykładowy:

angielski

Skrócony opis:

Objective: Obtaining structured knowledge on management and production engineering in human activity.

Opis:

Objective: Obtaining structured knowledge on management and production engineering in human activity. Acquiring knowledge on the product life cycle, the basics of engineering of needs, quality and work environment, the basic problems related to the environmental, economic and social effects of the use of technical means. Acquiring of skills in identifying issues related to production engineering and obtaining information from various sources, integrating and interpreting them, as well as drawing conclusions on topics related to human technical activity. Understand the general issues related to manufacturing techniques and operation of machines and equipment.

NUMBER OF HOURS
Number of hours of classes with direct participation of academic teachers or other people conducting classes and students
- Lecture: 30 h
- Laboratory: 15 h
Number of hours allocated to the student's own work: 105 h, including:
- Preparation to exam: 40
- Acquaintance with literature: 15 h
- Preparation for project and preparation of a final paper: 50 h
Total number of hours: 150 h

The details are about a given semester (academic year) can be found in the sections below.
Szczegóły odnośnie danego semestru (roku akademickiego) znajdują się w częściach poniżej.

Literatura:

Aspects of production engineering and management / ed. Piotr Łebkowski. - Krakow : AGH University of Science and Technology Press, 2011.

Production management and engineering : an engineer's guide to professional communication in English / Agnieszka Majka-Pauli, Kamila Wójcik. - Kraków : Studium Praktycznej Nauki Języków Obcych Politechniki Krakowskiej, 2014.

Production engineering : Quality Production Improvement / pod redakcją Robert Ulewicz, Manuela Ingaldi. - Częstochowa : Oficyna Wydawnicza Stowarzyszenia Menedżerów Jakości i Produkcji, 2018.

K.C. Jain, A.K. Chitale "Textbook of Production Engineering", PHI Learning Private Limited, Delhi 2014, ISBN-978- 81-203-4749-6

P.D.T. O'Connor "The Practice of Engineering Management: A New Approach", John Wiley&Sons, Chichester, UK, 1994

W. Cholewa, J. Kaźmierczak , "Data Processing and Reasoning in Technical Diagnostics", WNT, Warszawa, 1995.

Kaźmierczak J., Stecuła K., Problem of Preparing Students to Study in the Field of „Management and Production Engineering" in the Field of Basic Technical Knowledge – Case Study, [w:] Systemy wspomagania w inżynierii produkcji. Inżynieria systemów technicznych, [red.:] Brodny J., Kaźmierczak J., Volume 6, Issue 6, Gliwice 2017, ISBN 978-83-65265-17-3, e-ISSN 2391-9361.

Stecuła K., Application of Virtual Reality for Education at Technical University, Proceedings of ICERI2019 CONFERENCE 11th-13th November 2019, Seville Spain, p. 7437-7444. ISBN 978-84-09-14755-7, ISSN: 2340-1095, DOI: 10.21125/iceri.2019.1775.

Efekty uczenia się:

KNOWLEDGE: knows and understands:

Basic engineering processes and technologies in the life cycle of technical equipment, objects and systems and ways of solving typical engineering tasks, particularly in relation to the organization of production processes and production management - in the field of production engineering. K1A _W3

Fundamental problems of contemporary civilization relevant to the production engineering - in the field of production engineering. K1A _W7

SKILLS: is able to:

Identify, formulate and solve complex and unusual engineering problems related to the field of management and production engineering by applying the principles of engineering, science and mathematics, as well as perform tasks under conditions that are not fully predictable - in the field of production engineering. K1A _U1

When identifying and formulating specifications for engineering tasks and solving them:
-select and use analytical, simulation and experimental methods, including computer-aided methods,
-recognize their system and non-technical aspects, including ethical aspects
-make preliminary economic assessment of the proposed solutions and engineering actions taken,
-analyze technology transfer and innovation
in the field of production engineering K1A _U4

Make a critical analysis of the functioning of existing technical and technological solutions in production systems function, evaluate these solutions and suggest appropriate improvements and innovations in this regard - in the field of production engineering. K1A _U5

SOCIAL COMPETENCE: is ready for:

Responsible performance of professional roles, compliance with the rules of professional ethics and requiring it from others, care for the achievements and traditions of the profession; is aware of the importance and understands non-technical aspects and effects of engineering activities - in the field of production engineering. K1A _K3

Metody i kryteria oceniania:

Final grade: 50% exam, 50% laboratory.

The details are about a given semester (academic year) can be found in the sections below.
Szczegóły odnośnie danego semestru (roku akademickiego) znajdują się w częściach poniżej.

Dane dotyczące przedmiotu cyklu:

Domyślny typ protokołu dla przedmiotu cyklu:

EGZ

Opis:

Lectures:
- detailed program content:
1. Introduction. Technology as an area of creative human activity. Selected problems of the philosophy of technology. Basic concepts (technique, technology, process, optimization, etc.).
2. Features of the engineering manager of the 21st century.
3. The model of the process of satisfying the needs as the basis for the thinking and acting of an engineer. Discussion of its stages.
4. Product life cycle.
5. Industrial revolutions - from Industry 1.0 to Industry 4.0. Discussion of the most important inventions and technical achievements.
6. Basic technologies and manufacturing techniques. IT support for production.

Laboratory:
The analysis of the technical mean.

The final grade from Laboratory includes:
- essay,
- presentation,
- exam.

1. ESSAY
• Everyone chooses the technical mean.
• Everyone prepares an essay about the given technical mean.
The essay includes:
1. A description of the technical mean (app. 1-2 pages).
2. A beginning and history of the technical mean (app. 1-3 pages).
3. A description of how the technical mean works (app. 1-3 pages).
4. Technology Assessment of the technical mean (consequences, threats, potential problems, advantages, disadvantages, etc., app. 1-3 pages).
5. A perspective of a development / a future of the technical mean (develop and extend ideas from the report) – students' creativity and own work (app. 1-4 pages).
6. References (literature sources) – books, papers, articles, Internet.

The essay must be written in a formal style. Pay attention to fonts, line spacing, numbering tables and figures. It has to have a formal front page.

Students must give a presentation on the given topic to get the maximum grade.

Uwagi:

Metody i kryteria oceniania - rok akademicki 2022/2023:
Assessment methods and criteria - academic year 2022/2023:

Grade from laboratory includes essay and presentation.
There is an exam from lectures.

Final grade: 50% exam, 50% laboratory.

Szczegóły zajęć i grup

wykład (30 godzin)

Dane grup zajęciowych

brak szczegółowych danych o grupach zajęciowych

laboratorium (15 godzin)

Dane grup zajęciowych

brak szczegółowych danych o grupach zajęciowych

Przynależność do grup przedmiotów w cyklach:

Opis grupy przedmiotów	Cykl pocz.	Cykl kon.
Przedmioty obowiązkowe ang. semestr 1 (ZIPAOZ>SI-1-22-O)	2022/2023-Z	2022/2023-L

Punkty przedmiotu w cyklach:

<bez przypisanego programu>			
Typ punktów	Liczba	Cykl pocz.	Cykl kon.
Europejski System Transferu Punktów (ECTS)	5	2022/2023-Z	