SYLLABUS

Name: Control and monitoring of production processes
Name in Polish: Sterowanie i monitorowanie procesów produkcyjnych
Name in English: Control and monitoring of production processes

Information on course:

Course offered by department:	Faculty of Organisation and Management
Course for department:	Silesian University of Technology
Study level and form:	Master's degree, Full-time
Term:	winter semester 2023/2024
Coordinator of course edition:	Dr Kinga Stecuła

Default type of course examination report:

zal / passed

Language:

English

Course homepage:

https://platforma.polsl.pl/roz/

ECTS

3 ECTS

Short description:

The aim of the course is to acquire knowledge about methods of monitoring production processes, analysis and inference based on data obtained from process monitoring systems and methods of controlling the course of the production process.

Description:

Contents: structured knowledge, skills and competences regarding methods of monitoring production processes, analysis and inference based on data obtained from process monitoring systems and methods of controlling the course of the production process.

Lectures:
- detailed program content:
1. Introduction. Basic concepts (process, production process, technology, engineering, etc.). Characteristics of production process. Examples of production processes based on Polish companies.
2. Production system, resources, data, information, knowledge, types of knowledge, knowledge management in production company, production planning, production plans.
3. Steering of production (production planning and controlling) - definition, functions, tasks, objectives.
4. Measurements and disruptions in production. Forms of production organization. Product structures.
5. Towards robotization and automation: examples of innovative manufacturing.
6.Modern and future methods of production planning and controlling (characteristics + practical examples).

Laboratory:
Exercises, using "Factory I/O" program.

The final grade from Laboratory includes:
- submitting and passing every task from laboratories.

The attendance is obligatory.

ECTS POINTS (credit points): 3 ECTS.

NUMBER OF HOURS
Number of hours of classes with direct participation of academic teachers or other people conducting classes and students
- Lecture: 15 h
- Laboratory: 15 h
Number of hours allocated to the student's own work: 60 h, including:
- Acquaintance with literature: 20 h
- Preparation for laboratory classes and preparation of a final paper: 40 h
Total number of hours: 90 h

Bibliography:

Production planning and control / Jerzy Lewandowski, Milena Antosik. - Lodz : Technical University of Lodz Press, 2012.

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

Human resource management in production engineering / Maria Baron-Puda. - Bielsko-Biała : Wydawnictwo Naukowe Akademii Techniczno-Humanistycznej, 2012.

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.

Learning outcomes:

KNOWLEDGE: knows and understands

K2A_W04 Ordered and theoretically-grounded key methods of analysis, description and modelling of the conditions and flow of processes in the enterprise and their improvement - in the field of controlling and monitoring of production processes
K2A_W06 structured and theoretically based key issues in the field of decision support systems and Cax systems - in the field of control and monitoring of production processes

SKILLS: is able to:

K2A_U01 Use the acquired knowledge - formulate and solve complex and unusual problems and innovatively perform tasks in unpredictable conditions by:
-proper selection of sources and information derived from them; evaluation of the information, its critical analysis, synthesis, creative interpretation and presentation,
-selection and use of adequate methods and tools, including advanced ICT techniques,
-adapting existing or developing new methods and tools
in the field of controlling and monitoring of production processes

K2A_U04 Make a critical analysis of the functioning of existing technical solutions and evaluate them - in the field of controlling and monitoring of production processes

K2A_U09 Select decision support methods and use Cax systems - in the field of control and monitoring of production processes

SOCIAL COMPETENCE: is ready for

K2A_K06 Creating and developing patterns of proper conduct in the work and life environment, taking initiatives, critically assessing him/herself, the teams and organizations in which he/she participates, as well as leading a group and taking responsibility for it - in the field of controlling and monitoring of production processes

Assessment methods and assessment criteria:

The final grade includes:
- submitting and passing every task from laboratories.
The attendance is obligatory.

Practical placement:

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