COURSE DESCRIPTION CARD - SYLLABUS

Course name
Reporting and visualization of production data [N1ZiIP2>RiWDP]

Course

Field of study
Management and Production Engineering

Year/Semester
4/8

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
part-time

Requirements
elective

Number of hours

Lecture
0

Laboratory classes
8

Other
0

Tutorials
0

Projects/seminars
8

Number of credit points

2,00

Coordinators

Lecturers

Prerequisites

The student has basic knowledge of production organization and the flow of information and materials in production processes. The student has a basic understanding of statistics. A student can analyze data in production engineering. A student can logically associate facts and use information obtained from available sources of knowledge.

Course objective

Transfer of knowledge on selected data visualization methods and their application in creating production reports supporting decision-making in a manufacturing enterprise.

Course-related learning outcomes

Knowledge:
Knows the correct interpretation of the components of the production process.
Knows modern systems support the flow of information.
Knows data visualization and reporting methods and their role in describing production processes.

Skills:
Can prepare a report taking into account reference to numerical results.
Can create reports based on real examples of business data.

Can prepare a set of reliable information needed to analyze the problem.

Social competences:
Developing the ability to analyze and interpret results correctly.
Ability to critically evaluate production reports.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Project: Verification of knowledge based on a colloquium consisting of 3 general questions conducted at the end of the semester. Passing threshold: 50%.
Assignment of grades to percentage ranges of results: <90-100> very good; <80-90) good plus; <70-80) good; <60-70) satisfactory plus; <50-60) satisfactory; <0-50) unsatisfactory.
Laboratory: Report from the classes (according to the template prepared by the instructor).

Programme content

Information flow in a manufacturing enterprise. The importance of the data reporting process.
Reporting and visualization of production data in examples from selected manufacturing companies.

Course topics

Project: Data and information flow in the production process. The importance of the production data reporting process. Data storytelling. Graphical presentation of data. Reporting and visualizing production data - a case study.
Labs: Building a data model using data from different sources. Performing data transformations. Data processing, building relationships in the model, and defining formulas. Building interactive visual elements. Using elements built into Power BI. Creating professional dashboards and reports. Using Power BI Desktop.

Teaching methods

Multimedia presentation, including the use of distance learning techniques and e-resources, case study, own work on computers, and discussion.

Bibliography

Basic:
Deckler G.: Pierwsze kroki w Power BI. Kompletny przewodnik po praktycznej analityce biznesowej. Wydanie II, Helion
Murray S., Interaktywna wizualizacja danych, Helion

Additional:
Strengholt P.: Zarządzanie danymi w zbiorach o dużej skali. Nowoczesna architektura z siatką danych i technologią Data Fabric. Wydanie II, Helion
Kusleika D.: Wizualizacja danych. Pulpity nawigacyjne i raporty w Excelu, Helion

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	16	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	34	1,50