**SYLLABUS**

**Name: BUSINESS INTELLIGENCE I BIG DATA**
**Name in Polish: BUSINESS INTELLIGENCE I BIG DATA**
**Name in English: BUSINESS INTELLIGENCE AND BIG DATA**

**Information on course:**

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| **Course offered by department:** | Faculty of Organisation and Management |
| **Course for department:** | Silesian University of Technology |
| **Study level and form:** | Master's degree/Bechelor's degree (semester VII) |
| **Term:** | winter semester 2023/2024 |
| **Coordinator of course edition:** | Dr inż. Marcin Wyskwarski |

**Default type of course examination report:**

passing

**Language:**

English

**Course homepage:**

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

**ECTS**

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**Short description:**

Familiarizing students with the fundamental concepts in the field of Business Intelligence systems, which enable the processing of large datasets (big data).

**Description:**

Lecture:
Business Intelligence - basic definitions, characteristics, and utilization; ETL process and tools; data warehouses (definition, structure, advantages, and disadvantages); OLAP systems and processing; big data (characteristics, applications, data sources, architecture); reporting systems; selected analytical functions in TSQL.

Laboratory:
Basic MS SQL Server operation; executing simple and complex SQL queries; BI project stages; data extraction, integration, and loading process into the BI system; results analysis; report generation.

Number of hours of classes with direct participation of academic teachers or other instructors:
Lecture: 9 hours
Laboratory: 9 hours

**Bibliography:**

1.Data Science with Microsoft SQL Server 2016, Micrsoft Press, 2016
2.Rad R.: Microsoft SQL Server 2014 Business Intelligence Development Beginner's Guide, Packt Publishing, Birmingham 2014
3.Vercellis C.: Business Intelligence: Data Mining and Optimization for Decision Making, John Wiley & Sons, Milano 2009
4.Bentley D.: Business Intelligence and Analytics. Library Press, New York 2017
5.Maheshwari A.: Business Intelligence and Data Mining, Business Expert Press, New York 2015
6.Grossmann W., Rinderle-Ma S.: Fundamentals of Business Intelligence, Springer-Verlag Berlin Heidelberg 2015

**Learning outcomes:**

1. The student knows and understands advanced concepts in the field of production management and engineering, particularly specialized systems used for data collection, analysis, and visualization (e.g., databases, data warehouses) (K1A_W1).
2. The student knows and understands fundamental processes and technologies occurring in the life cycle of devices, objects, and technical systems concerning production processes and production management, especially in the area of data collection, integration, and analysis using information systems (K1A_W3).
3. The student can conduct computer simulations, visualize data, interpret the results obtained, and draw conclusions (K1A_U3).
4. The student can work both independently and in a team, assuming various roles within the team, plan and organize work, collaborate with others in interdisciplinary teamwork, using appropriate communication skills,

specialized terminology, and modern information and communication technologies, and participate in debates (K1A_U7).
5. The student can select and use appropriate techniques, skills, and modern tools, especially information technology solutions for data collection and analysis (K1A_U9).
6. The student is prepared to professionally assume responsibilities, adhere to professional ethics, and demand this from others, care for the profession's heritage and traditions; has an awareness of the importance and understanding of non-technical aspects and consequences of engineering activities (K1A_K3).

**Assessment methods and assessment criteria:**

Lecture:
Single/Multiple Choice Test
Passing Criterion: Minimum 60% of points.

Laboratory:
Evaluation of laboratory reports, evaluation of examinations.
Passing Criterion: Achieving 60% of points.

**Practical placement:**

not applicable