# GDAŃSK UNIVERSITY OF TECHNOLOGY

## Subject card

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| Subject name and code | Modern Database Systems, PG_00038333 |
| Field of study | Automation, Robotics and Control Systems |

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| Date of commencement of studies | October 2024 | Academic year of realisation of subject | 2025/2026 |
| Education level | second-cycle studies | Subject group | Specialty subject group Subject group related to scientific research in the field of study |
| Mode of study | Part-time studies | Mode of delivery | at the university |
| Year of study | 2 | Language of instruction | Polish |
| Semester of study | 3 | ECTS credits | 3.0 |
| Learning profile | general academic profile | Assessment form | assessment |

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| Conducting unit | Faculty of Electrical and Control Engineering |

| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Grzegorz Redlarski |
|---|---|---|
| | Teachers | |

### Lesson types and methods of instruction

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 10.0 | 0.0 | 10.0 | 0.0 | 0.0 | 20 |

E-learning hours included: 0.0

Adresy na platformie eNauczanie:

### Learning activity and number of study hours

| Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM |
|---|---|---|---|---|
| Number of study hours | 20 | 8.0 | 47.0 | 75 |

| Subject objectives | Intruduction of the data base rationale. Description of data base characteristics. Introduction to programing in SQL and writing SQL sueries. Data Manipulation Language. Data Definition Language. Data Query Language. |
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### Learning outcomes

| Course outcome | Subject outcome | Method of verification |
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| [K7_K06] is aware of the impact of engineering activities on the quality of applied solutions and the environment | | |
| [K7_U10] is able to apply the known mathematical tools and methods and computer techniques to analyse and evaluate automation and robotics components, devices, systems and systems | The student is able to create a database using for this an appropriate / specialized IT tools | [SU1] Assessment of task fulfilment |
| [K7_W02] has a structured knowledge of the application of information systems to improve the reliability, efficiency, speed and mobility of control and management systems | The student is able to design and create a database, and present its documentation in the form of a multimedia presentation and / or text | [SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation |

| Subject contents | Databases rationale. Database characteristics. Relational data model. Indexing in relational databases. Programming in SQL Queries, projection, expressions, aliases. WHERE clause and logical conditions. HAVING, GROUP BY clauses and aggregating functions. Relation joins. Sub-queries. Adding and modifying records. Creating tables. |
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| Prerequisites and co-requisites | |
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### Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| homeworks | 60.0% | 25.0% |
| Introductory tests | 60.0% | 25.0% |
| Final test | 60.0% | 50.0% |

| Recommended reading | Basic literature | 1. Chrisa Date, *Database in Depth* (OReilly)<br>2. MySQL Manual (http://dev.mysql.com/doc)<br>3. PostgreSQL Manual (http://www.postgresql.org/docs) |
| --- | --- | --- |
| | Supplementary literature | 1. Wiesław Dudek, 'Bazy danych SQL, Teoria i praktyka'<br>2. Michael J. Hernandez., "Bazy danych dla zwykłych śmiertelników"<br>3. Lynn Beighley, Head First SQL: Your Brain on SQL -- A Learner's Guide |
| | eResources addresses | |
| Example issues/<br>example questions/<br>tasks being completed | List database features<br>Give an example of database application in automatic control or robotics<br>For a given set of relations, write a query using projections, expressions and aliases.<br>For a given set of relations, write a query using join.<br>For a given set of relations, write a query using subquery. | |
| Work placement | Not applicable | |

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