POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)
pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

# COURSE DESCRIPTION CARD - SYLLABUS

Course name
## Engineering - oriented databases

## Course

Field of study
**Management and Production Engineering**

Year/Semester
4/7

Area of study (specialization)

Profile of study
general academic

Level of study
First-cycle studies

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

## Number of hours

| Lecture | Laboratory classes | Other (e.g. online) |
|---|---|---|
| | | |

| Tutorials | Projects/seminars | |
|---|---|---|
| 8 | 8 | |

## Number of credit points

2

## Lecturers

Responsible for the course/lecturer:

dr inż. Przemysław Zawadzki

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tel. 61 665 2708

Wydział Inżynierii Mechanicznej

ul. Piotrowo 3, 60-965 Poznań, room 105

Responsible for the course/lecturer:

## Prerequisites

It has knowledge of the construction and operation of a computer. It can operate a computer, know how to use the basic tools of MS Office to support engineering activities. It has a sense of responsibility for their own work, to understand the need to learn and acquire new knowledge.

## Course objective

Understanding theoretical and practical problems associated with the design and application engineering databases in the enterprise.

## Course-related learning outcomes

Knowledge

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1. Student knows the basic definitions and concepts of databases, database management systems and database systems.

2. Student distinguishes, names, characterizes and describes database systems and issues related to them.

3. Student has knowledge of database implementations in an engineering environment.

Skills

1. Student is able to independently design and implement a relational database in the MS Access environment for engineering activities.

2. Student is able to define the requirements necessary to design the database.

3. Student knows how to operate (complete and edit data, administer) a simple relational database.

Social competences

1. Student is able to independently develop knowledge in the subject.

2. Student is open to the implementation of modern information technologies in science and technology.

3. Student is aware of the role of computerization in engineering activities.

**Methods for verifying learning outcomes and assessment criteria**

Learning outcomes presented above are verified as follows:

Tutorials: on the basis based on tasks performed during classes and summary report.

Projects: based on the evaluation of own database application.

**Programme content**

Tutorilas:

1. Transforming Object-union model to the relational model using tools.

2. Enter data into the sample database.

3. Implementation of the relational model in MS Access (create relationships, relationships and giving referential integrity).

4. Building queries.

5. Create a sample forms and queries.

6. The execution of user interface database.

Projects:

Development of a database application in the Ms Access environment for selected issues.

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## Teaching methods

Project: solving practical problems, searching for sources, teamwork, discussion.

## Bibliography

### Basic

P. Beynon-Davies, Systemy baz danych, WNT, Warszawa, 1998

Hamrol A. (red.) Elementy informatyki dla inżynierów mechaników, Wydawnictwo Politechniki Poznańskiej, Poznań, 2001

Rojek-Mikołajczak I, Bazy danych, Wydawnictwo Akademii Bydgoskiej, Bydgoszcz, 2004

Mark Whitehorn, Bill Marklyn, Relacyjne bazy danych, Helion, Warszawa 2003

### Additional

Fundamentals of database systems, R. Elmasri, S. B. Navathe, The Benjamin/Cummings Publishing Company, Redwood City CA 94065, 1994

## Breakdown of average student's workload

|  | Hours | ECTS |
|---|---|---|
| Total workload | 50 | 2,0 |
| Classes requiring direct contact with the teacher | 20 | 1,0 |
| Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation)[1] | 30 | 1,0 |

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[1] delete or add other activities as appropriate