COURSE DESCRIPTION CARD - SYLLABUS

Course name
Database

Course

Field of study
Education in Technology and Informatics

Year/Semester
2/4

Area of study (specialization)

Profile of study
general academic

Level of study
First-cycle studies

Course offered in
polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
25	45	
Tutorials	Projects/seminars	

Number of credit points

4

Lecturers

Responsible for the course/lecturer:
dr inż. Andrzej Sikorski

email: andrzej.sikorski@put.poznan.pl

Responsible for the course/lecturer:

Prerequisites

Knowledge of the basics of IT related to operating systems, file systems and data management. Basic knowledge of programming, algorithms and data structures with particular emphasis on sorting and searching. Intermediate proficiency in programming (preferably C ++ or Java). Skills in reasoning and solving tasks in formal logic and set theory. The student is expected to understand the importance of large-scale data processing in modern society. Ability to work in a group and individually. Active attitude when solving problems. Ability to think unconventional.

Course objective

Knowledge and skills in the field of:

Mastering the following skills:

programming in SQL.

designing Databases

concurrency in Databases

Relationship algebra

Course-related learning outcomes

Knowledge

1. ma wiedzę w zakresie programowania proceduralnego i obiektowego, sztucznej inteligencji oraz baz danych - [K1_W08]

2. ma wiedzę w zakresie systemów informatycznych obejmującą architekturę systemów komputerowych i operacyjnych - [K1_W14]

Skills

1. has the ability to create computer programs using high-level programming languages, including the C programming language - [K1_U11]

2. can use programming languages (C ++, C #, SQL and NET components) in the field of applications and configuration of information systems based on databases - [K1_U17]

Social competences

1. is able to work on a designated task independently and cooperate in a team taking different roles in it; demonstrates professionalism and responsibility for decisions made in this work - [K1_K01]

2. is able to work on a designated task independently and cooperate in a team taking different roles in it; demonstrates professionalism and responsibility for decisions made in this work - [K1_K07]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Exam.

Laboratory task sets

Reports.

Programme content

The course is oriented towards acquiring skills in the field of database application programming. Using the SQL language to search and modify data. Database transactions - concurrency and recovery management. Design and implementation of databases. Application programming client-server in ADO.NET technology. Programming of web applications in ASP.NET and Silverlight technologies. Numerous tasks carried out during laboratory exercises aimed at gaining proficiency in the field of application programming and configuration of information systems based on databases. Elements of noSQL databases.

Particular emphasis is placed on practical skills in the use of C #, SQL and .NET components supporting database application programming.

Teaching methods

Lecture: multimedia presentation, presentation illustrated with examples given on the board.

Laboratory exercises: practical exercises, conducting experiments, modeling, discussion, team work.

Bibliography

Basic

CJ Date Introduction to database systems PWN, Warsaw 2000

Additional

D Ritchie, B. Kernighan Language Ansi C Helion 2010

Breakdown of average student's workload

	Hours	ECTS
Total workload	110	4,0
Classes requiring direct contact with the teacher	70	3,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	65	2,0

[1] delete or add other activities as appropriate