UNIVERSITY
OF WARMIA AND MAZURY
IN OLSZTYN

Faculty of Mathematics and Computer Science

Course title: DATA BASES

ECTS credit allocation (and other scores): 5,5

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Natural sciences

Language: English

Number of hours per semester: 30 lectures +45 classes = 75 hours

Course coordinator/ Department and e-mail: Erasmus coordinator Anna Szczepkowska/ WMiI, anna.szczepkowska@matman.uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES:

Introduction to DBMS ACCESS, Creating tables taking into account domain referential integrity, simple forms, Querying the DBMS ACCESS, use aggregate functions, create forms for navigation, macros, reports, database modeling, diagram entity-relationship, creating the database structure based on ERP, introduction into the environment of Linux and the MySQL database language SQL, Data definition (DDL), data update and insert data into tables (DML) SQL Querying one table MySQL, SQL join tables, aggregate functions, functions built into MySQL, SQL Subqueries, permission management, bringing tables to the normal form, Boyce-Codd Normal Form (BCNF), the difference between 3NF and BCNF, transaction management, creating simple functions, procedures and triggers

LECTURES:

Introduction to databases, Basic Concepts, Environment database entity-relationship model, relational data model, database Language SQL data, define data query language, SQL, Access Control Database normalization, Database Security, Transactions, transaction management, organization of files and data structures, indexes

Learning purpose:

The aim of the course is to acquaint students with the basic concepts and technology concepts of database systems. students will learn the basic principles of modeling and database design, relational data model, the standard SQL language, databases normalization of the logical database schemas

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On completion of the study programme the graduate will gain:

Knowledge:

can describe the process of designing and creating databases in the relational model
knows how to transform the database schema to the corresponding normal form
understand the meaning of queries, transactions and indexes in the databases

Skills:

the student can use the entity-relationship model for database design
can use SQL to create, modify and manage databases

Social Competencies:
The student can formulate questions about the goals and is able to find the necessary information in the literature and in the Internet
The student is able to work in a group when creating the project

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Basic literature:

1) Ullman J., Widom J., Podstawowy wykład z systemów baz danych , wyd. WNT, 2001 ; 2) Beynon-Davies P., Systemy baz danych, wyd. WNT, 2000 ; 3) Banachowski L., Bazy Danych – Tworzenie Aplikacji, wyd. PLJ, 1998 ; 4) Conolly T., Begg C., Systemy baz danych, wyd. RM, 2004 ; 5) Date C., Wprowadzenie do Systemów Baz Danych, wyd. 2000, 2000

Supplementary literature:

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 3,20 ECTS points,

Student's independent work: 2,30 ECTS points,