Module card

I. GENERAL INFORMATION								
WITELON COLLEGIUM STATE UNIVERSITY **DEPARTMENT Faculty of Technical and Economic Sciences**								
Field of study:		Computer sciences						
Form of study:		Erasmus						
Module title:		**MI1 Databases**						
Module type:		Compulsory field of study						
Language of lecture:		English						
Year of study:	2	**Forms of teaching including number of teaching hours:**						
Semester (winter/summer):	winter	Lectures	Classes	Laboratory	Project	Workshop	Seminar	Other
Total number of ECTS credits:	6	15	-	15	-	-	-	-
Form of completion:		Pass with grade						
Prerequisites:		-						

II. LEARNING OBJECTIVES
Learning objectives:
Objective 1: Provide important definitions and describe the characteristics of database systems.   **Objective 2:** Familiarize students with the standard SQL database language   **Objective 3:** Demonstrate methods for designing a relational database schema

IV. PROGRAMME CONTENT
Content of the programme (topics of classes, presented with a breakdown into individual forms of classes with the indication of the number of hours needed for their realization)
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Code	Course topics in theory	Number of hours
S1	Introduction to Databases. Database Functions.	1
S2	Data Models. DBMS.	2
S3	SQL - Description of DML and DDL.	2
S4	Database Creation, Relationship Normalization.	2
S5	Entity Relationship Diagrams.	2
S6	Database Management.	2
S7	Data Protection, Transaction Management.	2
S8	Physical Database Design. Overview of DBMS Tools.	2

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Code	Course topics in practice	Number of hours
L1	Familiarization with a program enabling interactive work with a database.	1
L2	Editing and executing selection and projection queries in SQL, modifying database schemas.	4
L3	Designing ERD diagrams in dedicated tools.	2
L4	Familiarization with the possibilities of creating database applications in a specific environment.	2
L5	Designing and implementing a user interface for a database system.	4
L6	Testing and verifying database applications.	2

VIII. RECOMMENDED LITERATURE
Basic sources: 1. Thomas Liddle, SQL Crash Course, BPB Publications, e-book, 2025   2. C. J. Date, Database Design and Relational Theory, O'Reilly Media, e-book, 2012
Additional sources: 1. Mukesh Chandra Negi, Fundamentals of Database Management System, BPB Publications, e-book, 2019   2. SQL Notes for Professionals book, https://books.goalkicker.com/SQLBook/