STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Data Base		**1010401141010330598**

Field of study	Profile of study (general academic, practical)	Year /Semester
EDUCATION IN TECHNOLOGY AND	**general academic**	**2 / 4**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**full-time**

No. of hours					No. of credits
Lecture: **2**	Classes: **-**	Laboratory: **3**	Project/seminars: **-**		**4**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
other	**university-wide**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**4 100%**
Technical sciences	**4 100%**

Responsible for subject / lecturer:

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Faculty of Electrical Engineering
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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basics of computer science [K_W14] including operating systems, file management, data management. Basic knowledge of programming, algorithms and data structures with emphasis on sorting and searching. Preliminaries of object oriented design and programming.
2	**Skills**	Intermediate proficiency in any programming language (preferably C++ or java, however) Fundamentals of formal logic and set theory (as presented in college course)
3	**Social competencies**	It is excpected that students understand the role of big scale data processing in the modern society. Ability to work both individually and in groups. It would be also an advantage if students understands the job opportunities related to the data base skills. Pro-activity in problem solving.

Assumptions and objectives of the course:

The skills and knowledge of:
SQL programming
Database design
Concurency Control & Recovery
Relational algebra
Transactional management
Relational algebra

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Relational data model - [K_W08]
2. Component architecures - [K_W14]
3. .NET programming model - [K_W14]
4. SQL fundamentals - [K_W08]
5. Realtional operators and algebra - [K_W08]
6. Non-conventional data model - [K_W08,K_W14]

Skills:
1. C++/C# programming - [K_U17,K_U11]
2. Aplication of ADO.NET components - [K_U17]
3. SQL queries - [K_U17,K_U11]
4. Data management, database structure, creating database and auxiliary objects - [K_U17]
5. Proficiency in data mining - [K_U17]
Social competencies:
1. Ability to work individually and data acquisition skills - [K_K01]
2. Data privacy awareness - [K_K02]
3. Creative attitude in problem solving - [K_K08]

Assessment methods of study outcomes
examination
evaluation of reports
problems posed by the instructor.
colloquium
Course description
In this course, SQL language and its application to the development of software is presented. Very strong emphsis is on the relational division and data queries that can be derived from this division. Among the topics to be covered: data manipulation language (SQL subset), data definition language (DDL subset), database theory, database normalization, database. Some theory is included in the lecture, the main focus is on programming techniques and programming languages, however. This course covers the following tools: MS SQL Server, MS Visual Studio, SQL Server Management Studio Students should acquire skills and proficiency in C#, SQL, ADO.NET, ASP.NET and silverlight programming.
Basic bibliography:
Additional bibliography:

Result of average student's workload

Activity	**Time (working hours)**
1. Lecture	30
2. Laboratory classes	45
3. Consultation	5
4. Textbook study	15
5. Programming and software development	10
6. SQL exercises	10

Student's workload

Source of workload	**hours**	**ECTS**
Total workload	115	4
Contact hours	80	3
Practical activities	70	3