

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Data Base		Code 1010401141010330598
Field of study EDUCATION IN TECHNOLOGY AND	Profile of study (general academic, practical) general academic	Year /Semester 2 / 4
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: - Laboratory: 3 Project/seminars: -		No. of credits 4
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 4 100% 4 100%
Responsible for subject / lecturer: dr inż. Andrzej Sikorski email: andrzej.sikorski tel. 6653958 Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań		
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 expected 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 Concurrency 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 architectures - [K_W14] 3. .NET programming model - [K_W14] 4. SQL fundamentals - [K_W08] 5. Relational operators and algebra - [K_W08] 6. Non-conventional data model - [K_W08, K_W14]		

Skills:
<ol style="list-style-type: none"> 1. C++/C# programming - [K_U17,K_U11] 2. Application 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:
<ol style="list-style-type: none"> 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		
<p>In this course, SQL language and its application to the development of software is presented.</p> <p>Very strong emphasis is on the relational division and data queries that can be derived from this division.</p> <p>Among the topics to be covered: data manipulation language (SQL subset), data definition language (DDL subset), database theory, database normalization, database.</p> <p>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.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. CJ Date An Introduction to Database Systems (8th Edition), Addison-Wesley; (August 1, 2003) 2. E.Redmond J Wilson Seven Databases in Seven Weeks: A Guide to Modern Databases and the NoSQL Movement Pragmatic Bookshelf; 1 edition (May 21, 2012) 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. B. Kernighan, D. Ritchie The C Programming Language, Prentice Hall; 2 edition (April 1, 1988) 2. N. Wirth Algorithms + Data Structures = Programs Prentice Hall; 1st edition (February 1976) 		
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