

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Databases		Code 1010822121010822204
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 1 / 2
Elective path/specialty Computer Networks and Internet	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: 1 Laboratory: 1 Project/seminars: -		No. of credits 5
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) from field
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 5 100% 5 100%
Responsible for subject / lecturer: dr inż. Mariusz Żal email: mariusz.zal@put.poznan.pl tel. +48 61 665 3926 Faculty of Electronics and Telecommunications ul. Piotrowo 3A 60-965 Poznań		Responsible for subject / lecturer: dr inż. Mariusz Żal email: mariusz.zal@put.poznan.pl tel. +48 61 665 3926 Wydział Elektroniki i Telekomunikacji ul. Piotrowo 3A 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Has a basic knowledge of computer networks; Has a basic knowledge of C# programming, algebra of sets and relation algebra
2	Skills	Is able to find information in literature, as well as other reference sources; is able to integrate and interpret obtained information, draws conclusions and justifies
3	Social competencies	Student understands a necessity to acquire a new knowledge and skills stemming from a chosen field of studies.
Assumptions and objectives of the course: To provide students with database models, SQL and PL SQL languages, query formats, embeded functions and extensions. To prepare students to database optimization and programming database applications.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has a systematic knowledge of algebra of sets and relation algebra. - [K2_W00] 2. Has a systematic knowledge, with the necessary theoretical background, of optimization methods used in solving engineering problems. - [K2_W03]		
Skills:		
1. Is able to use bibliography in English (books, scientific and technical journals, application notes, catalogs, instructions, recommendations etc.) - [K2_U01] 2. Can use optimization methods to solve problems in electronics and telecommunications. - [K2_U05]		
Social competencies:		
1. Understands the importance of communication for the development of individuals and societies, understands the evolutionary development of networks and telecommunications systems include increased needs of users in the development of telecommunications networks - [K2_K02] 2. . Knows the limitations of their own knowledge and skills, he understands the need for further education. - [K2_K04]		
Assessment methods of study outcomes		

Forming assessment:
 Lectures: Written exam; exam is passed when student receives at least 50% points. Exam can be taken after the completion of exercises.

Exercises and laboratories:
 - evaluation and assessment of knowledge increment that need to be effective in solving problems covering all tasks within a given subject area;
 - continuous assessment during daily classroom practice - rewarding knowledge increment in skills in management of using rules and methods learnt in class.

Course description

Lectures:
 Wykłady:
 1. Definitions: information, data, data processing. Database models. Database management systems.
 2. Relation algebra.
 3. SQL basis, views, sequences, triggers, indexes.
 4. Embedded SQL functions, PL SQL.
 5. Database users, access to databases.
 6. Overview of DBMS.
 7. Database applications.

Exercises:
 1. Database definitions.
 2. Simple SQL queries.
 3. Database modifications.
 4. Extended SQL queries.
 5. PL SQL procedures
 6. Database applications.

Basic bibliography:

1. Hernandez, Michael J., Database design for mere mortals: a hands-on guide to relational database design, Addison-Wesley 2005

Additional bibliography:

1. Jason Price, Oracle Database 11gSQL, McGrawHill 2008
 2. PL/SQL User's Guide and Reference, Release 2 (9.2) Part No. A96624-01

Result of average student's workload

Activity	Time (working hours)
1. Lectures	30
2. Exercises	15
3. Laboratories	15
4. Preparation for exercises	15
5. Preparation for tests	5
6. Preparation for laboratories	20
7. Preparation for Exam	10
8. Consultation	5

Student's workload

Source of workload	hours	ECTS
Total workload	125	5
Contact hours	65	2
Practical activities	65	3