STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Databases**		Code **1010821161010822204**
Field of study **Electronics and Telecommunications**	Profile of study (general academic, practical) **general academic**	Year /Semester **3 / 6**
Elective path/specialty **Computer Networks and Internet**	Subject offered in: **Polish**	Course (compulsory, elective) **elective**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **2** Classes: **1** Laboratory: **-** Project/seminars: **-**		No. of credits **2**
Status of the course in the study program (Basic, major, other) **major**	(university-wide, from another field) **from field**	
Education areas and fields of science and art **technical sciences** **Technical sciences**		ECTS distribution (number and %) **2 100%** **2 100%**

Responsible for subject / lecturer:

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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 optymization and programming database applications.

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

Knowledge:

1. Knows the principles of construction of computer programs; has knowledge from the area of computing science; knows the syntax of C# and Java for PC and mobile devices - [K1_W09]
2. Has a basic knowledge of network device architectures, standards, network protocols and construction. Knows network layer, transport layer and application layer protocols - [K1_W22]
3. Has a systematic knoledge of databases. Knows the database management system principles and structured query languages. - [K1_W23]

Skills:

1. Is able to find information in literature, as well as other reference sources - [K1_U01]
2. Is able to use future SQL extensions and normal form for solving data base optimization problem - [K1_U05]

Social competencies:

1. Demonstrates responsibility for designed software. Is aware of the hazards they pose for individuals and communities if they are improperly designed - [K1_K03]
2. A student is able to formulate opinions concerning challenges of contemporary networks application programming; A student is aware of the impact of network application on the information society - [K1_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 excercises.

Exercices 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, trigers, indexes.
4. Embeded SQL functions, PL SQL.
5. Database users, access to databases.
6. Overwiev of DBMS.
7. Database applications.

Exercises:

1. Database definitions.
2. Simple SQL queries.
3. Database modifications.
4. Exteneded 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	15
2. Laboratories	15
3. Preparation for test	5
4. Preparation for laboratories	10
5. Preparation for exam	10
6. Consultation	5

Student’s workload

Source of workload	hours	ECTS
Total workload	60	2
Contact hours	50	1
Practical activities	27	1