

FACULTY OF ELECTRICAL
ENGINEERING**SUBJECT CARD**

Name in Polish: **Bazy danych w technice**
 Name in English: **Database in the technique**
 Main field of study (if applicable): **Control Engineering and Robotics**
 Specialization (if applicable):
 Level and form of studies: **1st level, full-time**
 Kind of subject: **optional**
 Subject code: **ARR041306**
 Group of courses: **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU):	15			15	
Number of hours of total student workload (CNPS):	30			30	
Form of crediting:	crediting with grade			crediting with grade	
For group of courses mark (X) final course:					
Number of ECTS points:	1			1	
including number of ECTS points for practical (P) classes :				1	
including number of ECTS points for direct teacher-student contact (BK) classes:	0.70			0.70	

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. has basic computer literacy
2. has basic knowledge about searching for technical information
3. is able to write computer programmes based on given algorithm
4. recognises the need of continuous education, developing professional, personal and social competences and it able to define opportunities to do so

SUBJECT OBJECTIVES

- C1. introduction to design data bases of data-centric systems
 C2. introduction to technological aspect of using modern data-centric systems
 C3. acquisition of decision-making skills in respect of designing databases

SUBJECT EDUCATIONAL EFFECTS*relating to knowledge:*

- PEK_W01 has knowledge about data exchange for engineering purposes
 PEK_W02 knows the basics of designing relational database for purposes of technical

relating to skills:

- PEK_U01 is able to source information about designing relational databases from literature and other sources
 PEK_U02 is able to design and program a database in MS ACCESS

relating to social competences:

- PEK_K01 is able to think and action in a creative and enterprising manner

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours:
Lec 1	Objectives and tasks of database for engineering purposes. Multitasking of processes in modern computer systems. Information and technological resource sharing	2
Lec 2	Entity relationship diagram. Relationships between entities. One-to-One Relationships, One-to-Many Relationships, Many-to-Many Relationships.)	2
Lec 3	Professional management system illustrated with an example of technical solution. Elements of database management systems - user interfaces	2
Lec 4	Developing network databases in MS ACCESS. Tables, establishing primary and foreign keys. Table merging	2
Lec 5	Standard SQL (Structured Query Language): queries, search queries, perspectives, clauses and transactions	2
Lec 6	Creating forms and reports for websites and in MS ACCESS	2
Lec 7	Security levels of data-centric systems. Data protection	2
Lec 8	Final test	1
Total hours:		15

Form of classes - project		Number of hours:
Proj 1	Project of relational database developed by students individually or in groups of two. Project subjects are proposed by students and approved by class teachers after establishing all details. Each project consists of the following stages: developing an actual model, standardisation and algorithmization of database, SQL programming, launching and testing the end-user application, preparing documentation	14
Proj 2	Assessment of the project	1
Total hours:		15

TEACHING TOOLS USED
N1. introductory lecture with slideshow and elements of e-learning N2. students code case-based programmes both individually and in teams N3. remote self-education - http://eportal.eny.pwr.edu.pl - partial and final test N4. consultation

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT		
Evaluation <i>F - forming (during semester) P - concluding (at semester end)</i>	Educational effect number	Way of evaluating educational effect achievement
F1(w)	PEK_W01 PEK_W02	Remote self-teaching - partial test. E-learning platform: http://eportal.eny.pwr.edu.pl
F2(w)	PEK_W01 PEK_W02	Final test (final) in the presence conduct classes in the computer lab. Educational platform: http://eportal.eny.pwr.edu.pl
P(w)	$P=0.15 \times F1 + 0.85 \times F2$	
F1(P)	PEK_U01 PEK_U02 PEK_K01	Drafting interim papers electronically. E-learning platform: http://eportal.eny.pwr.edu.pl
P(P)	$P=F1$	

PRIMARY AND SECONDARY LITERATURE
PRIMARY LITERATURE: [1] Bazy danych, W. Harris, WNT (any edition) [2] Wprowadzenie do systemów baz danych, C.J. Date, WNT (any edition) [3] E-learning platform: http://eportal.eny.pwr.edu.pl [4] Net-literature SECONDARY LITERATURE: [1] SQL Język relacyjnych baz danych, Wellesley Software, WNT (any edition) [2] Programowanie w PHP, Helion, (any edition) [3] JAVA Kompendium programisty, Helion, (any edition)

SUBJECT SUPERVISOR
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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
ARR041306 - Database in the technique
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Control Engineering and Robotics**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)	Subject objectives	Programme content	Teaching tool number
PEK_W01	K1AiR_W15	C.1 C.2	Lec1 Lec2 Lec3 Lec4 Lec5 Lec6 Lec7	N.1 N.3 N.4
PEK_W02	K1AiR_W15	C.1 C.2	Lec1 Lec2 Lec3 Lec4 Lec5 Lec6 Lec7	N.1 N.3 N.4
PEK_U01	K1AiR_U13	C.2 C.3	Proj1	N.2 N.4
PEK_U02	K1AiR_U13	C.2 C.3	Proj1	N.2 N.4
PEK_K01	K1AiR_K01	C.2 C.3	Proj1	N.2 N.4