

SYLLABUS OF A MODULE

Polish name of a module	Bazy i hurtownie danych
English name of a module	Data bases and warehouses
ISCED classification - Code	0612
ISCED classification - Field of study	<i>Database and network design and administration</i>
Languages of instruction	<i>English</i>
Level of qualification	<i>2 - MSc (EQF 7)</i>
Number of ECTS credit points	<i>4</i>
Examination	<i>A - assignment</i>
Available in semester	<i>S – Spring only</i>

Number of hours per semester:

Lecture	Exercises	Laboratory	Seminar	E-learning	Project
30	0	30	0	0	0

MODULE DESCRIPTION

Module objectives

- O1. Gaining knowledge concerning the different models and architecture of databases and warehouses (relational model, object-oriented, postrelational, distributed and semistructural)

- O2. Obtaining skills in the area of developing and implementing selected models of databases and warehouses

PRELIMINARY REQUIREMENTS FOR KNOWLEDGE, SKILLS AND OTHER COMPETENCES

- 1. Knowledge of mathematics.
- 2. Knowledge of databases and SQL fundamentals.
- 3. Basics of computer skills.

LEARNING OUTCOMES

LO 1 – able to use an advanced parts of SQL language

LO 2 – able to develop and implement a given database logical model

LO 3 – able to improve a performance or functionality of given database project

MODULE CONTENT

Type of classes – lecture	Number of hours
Lec 1 - Repetitory course of SQL	2
Lec 2 - Repetitory course of SQL	2
Lec 3 - PL/SQL language - introduction	2
Lec 4 – PL/SQL language - cursors, exceptions	2
Lec 5 - PL/SQL language – named blocks	2
Lec 6 – Dynamic SQL	2
Lec 7 – Differenett modern types of database systems	2
Lec 8 - Object databases	2
Lec 9 - Object-oriented parts of SQL language	2
Lec 10 - Spatial databases	2
Lec 11 - XML-enabled database systems	2
Lec 12- SQL Optimization,	2
Lec 13 - SQL Injection	2
Lec 14 - Introduction to big data sets, warehousing and data mining	2
Lec 15 - Contemporary data warehouses and assignment	2
Sum	30
Type of classes– laboratory.	Number of hours
Lab 1 – SQL DML	2
Lab 2 – SQL DDL	2
Lab 3-4 – PL/SQL basic anonymous blocks	4
Lab 5 – PL/SQL procedure, functions, packages	2
Lab 6 – PL/SQL triggers	2

Lab 7 – test	2
Lab 8,9,10 - Object-oriented parts of SQL language	6
Lab 11,12 – XML with SQL	4
Lab 13 – analitical functions	2
Lab 14, 15 – test and assignmment	4
Sum	30

TEACHING TOOLS

1. – multimedial presentations for lectures
2. – instructions for laboratories
3. – workplaces for students equipped with workstations

WAYS OF ASSESSMENT (F – FORMATIVE, S – SUMMATIVE

F1. - assessment of preparation for laboratory exercises
F2. - assessment of the ability to apply the acquired knowledge while doing the exercises
F3. - evaluation of reports on the implementation of exercises covered by the curriculum
F4. - assessment of activity during classes
S1. - assessment of the ability to solve the problems posed and the manner of presentation obtained results - pass mark *
*) in order to receive a credit for the module, the student is obliged to attain a passing grade in all laboratory classes as well as in achievement tests.

STUDENT'S WORKLOAD

L. p.	Forms of activity	Average number of hours required for realization of activity
1. Contact hours with teacher		
1.1	Lectures	30
1.2	Exercises	
1.3	Laboratory	30

1.4	Seminar	
1.5	Project	
1.6	Examination	
Total number of contact hours with teacher:		60
2. Student's individual work		
2.1	Preparation for tutorials and tests	
2.2	Preparation for laboratory exercises, writing reports on laboratories	10
2.3	Preparation of project	15
2.4	Preparation for final lecture assessment	10
2.5	Preparation for examination	
2.6	Individual study of literature	5
Total number of hours of student's individual work:		40
Overall student's workload:		100
Overall number of ECTS credits for the module		4 ECTS
Number of ECTS points that student receives in classes requiring teacher's supervision:		3 ECTS
Number of ECTS credits acquired during practical classes including laboratory exercises and projects:		1 ECTS

BASIC AND SUPPLEMENTARY RESOURCE MATERIALS

1. Date, C. J. (2003). An Introduction to Database Systems, Fifth Edition. AddisonWesley. ISBN 0-201-51381-1
2. Jeffrey Ullman 1997: First course in database systems, Prentice-Hall Inc., Simonand Schuster, Page 1, ISBN 0-13-861337-0
3. Database Systems: The Complete Book (with H. Garcia-Molina and J. Widom),Prentice-Hall, Englewood Cliffs, NJ, 2002
4. Beynon-Davies, P. (2004). Database Systems. 3rd Edition. Palgrave, Houndmills,Basingstoke
5. M. McLaughlin, Oracle Database 11g, PL/SQL Programming, McGraw-Hill Companies, 2008
6. J. Price, Oracle Database 11g SQL, McGraw-Hill, 2008
7. D. Tow, SQL Tuning, O'Reilly 2003
8. Feuerstein, Steven; Bill Pribyl (2005). Oracle PL/SQL Programming (4th ed.).O'Reilly and Associates. ISBN 0-596-00977-1
9. Stonebraker,. Michael with Moore, Dorothy. Object-Relational DBMSs: The NextGreat Wave. Morgan Kaufmann Publishers, 1996. ISBN 1-55860-397-2.
10. Lausen George, Vossen Gottfried - Models and languages of object-oriented data-bases, Addison-Wesley 1998
11. T. W. Ling, M. L. Lee, G. Dobbie - Semistructured Database Design Springer-VerlagGmbH 2005

MODULE COORDINATOR (NAME, SURNAME, E-MAIL ADDRESS)

Olga Siedlecka-Lamch (olga.siedlecka@icis.pcz.pl)

Szymon Berski (szymon.berski@pcz.pl)