1.3. Module/ course form

To be completed by Course Team							
	Module name : Optional subjects					Module code: M23	
	Course name: Advanced database systems					Course code:	
	Faculty: **Institute of Applied Informatics**						
	Field of study: **Informatics**						
	Mode of study : **Full-time**		Learning profile: **Practical**			Speciality: **Database design and application software**	
	Year/ semester: **3/5**		Module/ course status: **Compulsory**			Module/ course language: **Polish/english**	
	Type of classes	lecture	lessons	lab	project	tutorial	other (please specify)
	Course load	**30**		**30**			

Module/ course coordinator	dr Robert Fidytek
Lecturer	dr Robert Fidytek
Module/ course objectives	Teaching programming of Oracle PL/SQL. To acquaint the students with the Oracle tools.
Entry requirements	Knowledge of the basics of relational databases and SQL.

LEARNING OUTCOME		
	LEARNING OUTCOME DESCRIPTION	Learning outcome reference
Nr	Knowledge	
01	You know the components of SQL and PL/SQL languages.	K_W05, K_W06, K_W14
02	You know the basic tools for Oracle.	K_W05
	Skills	
03	You can create advanced SQL queries.	K_U07, K_U11
04	You can program Oracle in PL/SQL.	K_U07, K_U11
05	You can solve problems that cannot be accomplished with the SQL language.	K_U02; K_U05, K_U07, K_U11
06	You can use tools to support Oracle.	K_U05, K_U11
	Social skills	
07	You can independently perform the tasks assigned.	K_K01, K_K03

CURRICULUM CONTENTS
Lecture
1. Introduction to Oracle - an outline of architecture, properties, basic tools, communication with external programs. 2. Basic SQL - SQL reminder, the differences and similarities Oracle, MS SQL Server,

PostgreSQL.

3. Basic Administration Oracle - creating the tables, users, roles, tables, use Oracle tools.
4. Learning a programming language Oracle-PL/SQL:
    a. The creation of anonymous blocks of PL/SQL ,
    b. Embedded procedures and functions,
    c. To establish procedures and functions,
    d. Creating packages,
    e. The use of the Oracle system structures,
    f. Overloading procedures and functions in packages,
    g. The intercept and error handling.

Tutorial

Laboratories on an ongoing basis to complement the lecture. They will in a practical way present all the issues discussed during the lecture. They prepare students to independently solve problems that cannot be accomplished with the SQL language.

1. Installation and initial configuration of Oracle.
2. The use of the Oracle tools.
3. SQL DDL, DML SQL - a reminder, systemize and deepen the knowledge.
4. Learning how to program Oracle - PL/SQL language:
    a. The creation of anonymous blocks of PL/SQL,
    b. Embedded procedures and functions,
    c. To establish procedures and functions,
    d. Creating packages,
    e. The use of the Oracle system structures,
    f. Overloading procedures and functions in packages,
    g. Interception and error handling.

Basic literature	1. Oracle Database 11g, Programowanie w języku PL/SQL, Michael McLaughlin, Helion 2009 2. Oracle Database 10g : programowanie w języku PL/SQL, Scott Urman, Ron Hardman, Michael , Helion, 2008 3. Oracle 9i, Programowanie w języku PL/SQL, Scott Urman, Helion 2003
Additional literature	

Teaching methods	• lecture • lecture with presentation • practice in the computer room • blended learning

Assessment method	Learning outcome number
Written exam	01, 02
Evaluation tasks	03, 04, 05, 06, 07
Practical test	03, 04, 05

Form and terms of an exam	The components of the final evaluation of the lecture: 50% of the grade is the result of the exam based on theoretical issues learnt at the lecture; 50% of the grade is the result of the laboratory assessment. The laboratory passing grade includes: 50% of the credit grade; 50% of the evaluation of the completed tasks.

STUDENT WORKLOAD	
	Number of hours
Participation in lectures	30
Independent study of lecture topics	10
Participation in tutorials, labs, projects and seminars	30
Independent preparation for tutorials*	50
Preparation of projects/essays/etc.*	
Preparation/ independent study for exams	22
Participation during consultation hours	5
Other	3
TOTAL student workload in hours	**150**
Number of ECTS credit per course unit	**6 ECTS**
Number of ECTS credit associated with practical classes	**80** **3,2 ECTS**
Number of ECTS for classes that require direct participation of professors	**68** **2,7 ECTS**