



MODULE DESCRIPTION

Module code	full-time studies:	Z-ZIP1-E-409
	part-time studies:	Z-ZIPN1-E-409
Module name	Databases	
Module name in Polish	Bazy danych	
Valid from academic year	2019/2020	

MODULE PLACEMENT IN THE SYLLABUS

Field of study	MANAGEMENT AND PRODUCTION ENGINEERING
Level of education	1st degree
Studies profile	General
Form and method of conducting classes	Full-time and Part-time
Specialisation	All
Unit conducting the module	Department of Computer Science Technologies
Module co-ordinator	Marzena Nowakowska, PhD, DSc
Approved by:	

MODULE OVERVIEW

Type of subject / group of subjects	Major
Module status	Compulsory
Language of conducting classes	English
Module placement in the syllabus - semester	Semester IV
Initial requirements	Fundamentals of Computer Science ComputerScience-(VisualBasic/Android) Programming
Examination (YES/NO)	NO
Number of ECTS credit points	3

Method of conducting classes		Lecture	Classes	Laboratory	Project	Other
Per semester	full-time studies:	15		24		
	part-time studies:	9		14		

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning out-comes
Knowledge	W01	A student knows and understands database universality and the benefits of applying them.	W01
	W02	A student has basic knowledge as regards relational database model including data structures of this model, model operation, integrational constraints, and the standardisation process of a logic schema.	W02
Skills	U01	A student is able to design his/her own relational database, built from several connected tables; a student is also able to conduct the standardisation process.	U01
	U02	A student is able to manage a created database and effectively use a query language.	U02
	U03	A student has the ability of presenting information obtained from a database in a understandable for an external user.	U03
Social competences	K01	A student understands the necessity of continuous improvement of his/her knowledge as regards databases.	K01
	K02	A student can work individually and in a team (by accepting various roles in it).	K02

TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	<p>Introduction to the database theory. Database characteristics. The requirements for databases. Database models. Relational databases. Designing a database system. Standardisation process.</p> <p>Basic operations on tables. Data filtering and sorting. Designing queries. Select, cross-tab, action, and parameter queries.</p> <p>Designing forms. Form types. Form sections. Types of formatives. Changing form properties and its components. Bound forms.</p> <p>Designing reports. Report types. Report sections. Data sorting and grouping. Macros: actions and action parameters.</p> <p>The application of macros in forms and reports. Defining conditional action execution in macros.</p> <p>Application control forms. Defining menu bars for applications.</p>
Laboratory	<p>Designing database systems. Creating tables (structure, data inserting and index markers). A primary and secondary table key. Relationships between database tables. Basic operations on tables.</p> <p>Data filtering and sorting. Designing queries. Expression creator . Derived fields. Parameter queries. Conditions in queries: filtering. SQL aggregation functions. Cross-tab and grouping queries. Action queries: create-table, update, append, and delete.</p> <p>Designing forms. Form sections. Form types. Changing the properties of a form and its components. Master/Detail form.</p> <p>Designing reports. Report sections. Data sorting and grouping. Summaries.</p> <p>Macros: actions and action parameters. Using macros in forms and reports. Adding condition to a macro. Creating a simple database application. Control panel. Defining menu bars. Event macro programming. Connecting macros with a form and its controls.</p> <p>The extension of a database application. Creating the application desktops. Securing the applications.</p>

METHODS OF ASSESSING TEACHING RESULTS

Symbol	Methods of checking the learning outcomes (select X)					
	Oral exam	Written exam	Test	Project	Statement	Other
W_01			X			
W_02			X			
U_01			X			
U_02			X			
U_03			X			
K_01						X
K_02						X

FORM AND CONDITIONS OF PASSING

Form of classes	Form of credit	Passing conditions
Lecture	Credit with grade	Obtaining at least 50% of the points in the final test. The student may be prescribed a laboratory grade in the case of grades: 4.5 and 5.
Laboratory	Credit with grade	Obtaining at least 50% of the points from the colloquia during the classes.

STUDENT WORKLOAD

Balance of ECTS points												
No.	Type of student's activity	Student's workload										Unit
		full-time					part-time					
1.	Participation in the activities	Lc	C	Lb	P	O	Lc	C	Lb	P	O	h
		15		24								
2.	Other (consultation, exam)	2		2								h
3.	Number of hours of a student's as- sisted work	0					0					h
4.	Number of ECTS credit points which are allocated for assisted work	0,0					0,0					ECTS
5.	Number of hours of a student's un- assisted work	0					0					h
6.	Number of ECTS credit points which a student receives for unassisted work	0,0					0,0					ECTS
7.	Work input connected with practical classes											h
8.	Number of ECTS credit points which a student receives for practical classes	0,0					0,0					ECTS
9.	Total number of hours of a stu- dent's work	0					0					h
10.	Punkty ECTS za moduł <i>1 ECTS=25 hours</i>	3										ECTS

LITERATURE

1. Churcher C. (2012), *Beginning Database Design: From Novice to Professional*, Apress.
2. Hernandez M. J. (2020), *Database design for Mere Mortals: A Hands-On Guide to Relational Database Design*, Addison Wesley Pub Co Inc.
3. Kroenke D. (2011), *Database concepts*, Upper Saddle River: Pearson.
4. Rod S. (2008), *Database Design Solutions*, Wiley Publishing Inc.
5. A wide variety of resources can be found on the Internet, key phrases: databases, relational databases.