



MODULE DESCRIPTION

Module code	full-time studies:	Z-ZIP1-E-312a
	part-time studies:	Z-ZIPN1-E-312a
Module name	Computer Science – Visual Basic Programming	
Module name in Polish	Informatyka - programowanie Visual Basic	
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	Paweł Stąpór, PhD
Approved by:	

MODULE OVERVIEW

Type of subject / group of subjects	Major
Module status	Non-compulsory
Language of conducting classes	English
Module placement in the syllabus - semester	Semester III
Initial requirements	Information Technologies Fundamentals of Computer Science
Examination (YES/NO)	YES
Number of ECTS credit points	4

Method of conducting classes		Lecture	Classes	Laboratory	Project	Other
Per semester	full-time studies:	15		30		
	part-time studies:	9		18		

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning out-comes
Knowledge	W01	A student has knowledge as regards structured programming and the methods of links to objects.	ZIP1_W04
	W02	A student has knowledge as regards creating forms, setting needed properties to elements and program events.	ZIP1_W05
Skills	U01	A student can write simple functions and procedures in order to change values and properties of objects in MS Excel.	ZIP1_U01
	U02	A student can create a form, arrange elements from a toolbox, change their properties and write procedures and functions reacting to events on the active forms.	ZIP1_U07
Social competences	K01	A student understands the necessity of continuous improvement of his/her knowledge from the field of computer studies.	ZIP1_K01

TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	<p>Registering macros, the structure and rule of work with the VBA editor, objects, properties and methods, operations connected with sheets and cells.</p> <p>Declaring variables and constants: the types of variables and constants, decision-making in VBA, conditional instruction if...then, repeating activity: the for...next loop.</p> <p>Repeating activities: Do While...Loop and Do Until...Loop instructions. Discussing built-in procedures and functions: MsgBox, InputBox, CSng, CInt, Ccur, etc.</p> <p>Built-in dialog boxes in VBA, creating own dialogs, discussing a toolbox for creating private forms, and form programming.</p> <p>Designing a userform, discussing a toolbar, setting the properties of form elements and event programming.</p> <p>Select case instruction, declaration and using arrays in VBA, the principles of writing simple functions.</p> <p>Procedures and functions, procedure nesting, passing arguments, handling external files.</p>
Laboratory	<p>Developer Card. Recording macros. InputBox and MsgBox statements.</p> <p>Graphic objects. Graphic interface elements.</p> <p>input / output instructions, variable declaration, conditional statements, type conversions</p> <p>User functions and iterative processing of sheet objects</p> <p>Extension of information about conditional statements and loops in VBA. Random number generator. Tables. Error handling.</p> <p>Use of controls to create interactive sheets. "Orders" application</p> <p>Implementation of the final task including the construction of an interactive sheet with the use of own functions and procedures</p>

METHODS OF ASSESSING TEACHING RESULTS

Symbol	Methods of checking the learning outcomes (select X)					
	Oral exam	Written exam	Test	Project	Statement	Other
W01		X	X			
W02		X	X			
U01			X			
U02			X			
K01						X

FORM AND CONDITIONS OF PASSING

Form of classes	Form of credit	Passing conditions
Lecture	Exam	Obtaining at least 50% of the marks on the final exam.
Laboratory	Credit with grade	Obtaining at least 50% of test points during the class.

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		30			9		18			
2.	Other (consultation, exam)	4		2			4		2			h
3.	Number of hours of a student's as- sisted work	51					33					h
4.	Number of ECTS credit points which are allocated for assisted work	2,0					1,3					ECTS
5.	Number of hours of a student's un- assisted work	49					67					h
6.	Number of ECTS credit points which a student receives for unassisted work	2,0					2,7					ECTS
7.	Work input connected with practical classes	67					67					h
8.	Number of ECTS credit points which a student receives for practical classes	2,7					2,7					ECTS
9.	Total number of hours of a stu- dent's work	100					100					h
10.	Punkty ECTS za moduł <i>1 ECTS=25 hours</i>	4										ECTS

LITERATURE

1. Alexander M, Kusleika D., *Excel 2019 Power Programming with VBA*, John Wiley & Sons, Indianapolis, Indiana 2019.
2. Cormen T., H., Leiserson C., E., Rivest R., L., Stein C., *Introduction to Algorithms, fourth edition*, The MIT Press, Cambridge, MA, 2022.
3. Bradley P., *Excel VBA: A Step-By-Step Tutorial For Beginners To Learn Excel VBA Programming From Scratch*, Independently published, 2018.