

## MODULE DESCRIPTION

Module code	<b>Z-ZIP-1012</b>
Module name	<b>Informatyka – programowanie Visual Basic</b>
Module name in English	<b>Informatics – Visual Basic Programming</b>
Valid from academic year	<b>2016/2017</b>

## A. MODULE PLACEMENT IN THE SYLLABUS

Field of study	<b>Management and Production Engineering</b>
Level of education	<b>1st degree</b> <i>(1st degree / 2nd degree)</i>
Studies profile	<b>General</b> <i>(general / practical)</i>
Form and method of conducting classes	<b>Full-time</b> <i>(full-time / part-time)</i>
Specialisation	<b>All</b>
Unit conducting the module	<b>The Department of Production Engineering</b>
Module co-ordinator	<b>Artur Szmidt, PhD</b>
Approved by:	

## B. MODULE OVERVIEW

Type of subject/group of subjects	<b>Major</b> <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	<b>Non-compulsory</b> <i>(compulsory / non-compulsory)</i>
Language of conducting classes	<b>English</b>
Module placement in the syllabus - semester	<b>3rd semester</b>
Subject realisation in the academic year	<b>Winter semester</b> <i>(winter / summer)</i>
Initial requirements	<b>No requirements</b> <i>(module codes / module names)</i>
Examination	<b>Yes</b> <i>(yes / no)</i>
Number of ECTS credit points	

<b>Method of conducting classes</b>	<b>Lecture</b>	<b>Classes</b>	<b>Laboratory</b>	<b>Project</b>	<b>Other</b>
<b>Per semester</b>	<b>15</b>		<b>24</b>		

### C. TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

<b>Module target</b>	On completing the course, a student ought to be able to insert and develop a userform as well as dialog boxes, set the necessary properties and next write simple process-handling programs. With those skills, students will be capable of extending Excel spreadsheet with forms and write programs and compile them in VBA.
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Effect symbol	Teaching results	Teaching methods (l/lab/p/other)	Reference to subject effects	Reference to effects of a field of study
W_01	A student has knowledge as regards structured programming and the methods of links to objects.	l/lab	K_W05	T1A_W03 S1A_W06
W_02	A student has knowledge as regards creating forms, setting needed properties to elements and program events.	l/lab	K_W05	T1A_W03 S1A_W06
U_01	A student can write simple functions and procedures in order to change values and properties of objects in MS Excel.	l/lab	K_U07	TA1_U01 TA1_U07 TA1_U08
U_02	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.	l/lab	K_U07	TA1_U01 TA1_U07 TA1_U08
K_01	A student understands the necessity of continuous improvement of his/her knowledge from the field of computer studies.	l/lab	K_K01	T1A_K01

#### Teaching contents:

##### 1. Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	Registering macros, the structure and rule of work with the VBA editor, objects, properties and methods, operations connected with sheets and cells.	W_01 U_01 K_01
2	Declaring variables and constants: the types of variables and constants, decision-making in VBA, conditional instruction if...then, repeating activity: the for...next loop.	W_01 U_01 K_01
3	Repeating activities: Do While...Loop and Do Until...Loop instructions. Discussing built-in procedures and functions: MsgBox, InputBox, CSng, CInt, Ccur, etc.	W_01 U_01 K_01
4	Built-in dialog boxes in VBA, creating own dialogs, discussing a toolbox for creating private forms, and form programming.	W_01 W_02 U_01 U_02 K_01
5	Designing a userform, discussing a toolbar, setting the properties of form elements and event programming.	W_01 W_02 U_01 U_02 K_01
6	Select case instruction, declaration and using arrays in VBA, the principles of writing simple functions.	W_01 W_02 U_01 U_02 K_01
7	Procedures and functions, procedure nesting, passing arguments, handling	W_01

	external files.	W_02 U_01 U_02 K_01
8	A summary prior to obtaining a credit.	W_01 W_02 U_01 U_02 K_01

## 2. Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module

## 3. Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1	Recording procedures, recording simple macro, writing simple procedure for user-computer communication.	W_01 U_01 K_01
2	'Credit repayment': the structure of simple procedures to handle a spreadsheet.	W_01 U_01 K_01
3	'The number game': generating random numbers, conditional instructions, activity repeating (for-next loop).	W_01 U_01 K_01
4	'The number game': handling graphical elements in VBA. Revising information.	W_01 U_01 K_01
5	Test 1. 'A questionnaire': creating an own form to communicate with a user.	W_01 W_02 U_01 U_02 K_01
6	'A questionnaire': providing software for events, the principles of referring to form elements.	W_01 W_02 U_01 U_02 K_01
7	'Scientific calculator': the structure of a userform for mathematical calculations.	W_01, W_02 U_01, U_02 K_01
8	'Company registration': the structure of userforms, creating databases, data filtering and sorting.	W_01 W_02 U_01 U_02 K_01
9	'Company registration', cont.	W_01 W_02 U_01 U_02

		K_01
10	Building one's own application in VBA for engineering calculations: own work.	W_01 W_02 U_01 U_02 K_01
11	Building one's own application in VBA for engineering calculations: own work, cont.	W_01 W_02 U_01 U_02 K_01
12	Test 2 and obtaining a credit for laboratory classes.	

#### 4. The characteristics of project assignments

### The methods of assessing teaching results

Effect symbol	<b>Methods of assessing teaching results</b> <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A computer-based practical test, a paper-based test.
W_02	A computer-based practical test, a computer-based project.
U_01	Tests and a student's initiative during laboratory classes.
U_02	Tests and a student's initiative during laboratory classes.
K_01	Comments during the lectures and computer-based problem solving during laboratory classes.

## D. STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	15
2	Participation in classes	
3	Participation in laboratories	24
4	Participation in tutorials (2-3 times per semester)	
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	2
8		
9	<b>Number of hours requiring a lecturer's assistance</b>	<b>39</b> <i>(sum)</i>
10	<b>Number of ECTS credit points which are allocated for assisted work</b> <i>(1 ECTS point=25-30 hours)</i>	<b>1.6</b>
11	Unassisted study of lecture subjects	10
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	10
14	Unassisted preparation for laboratories	10
15	Preparing reports	
15	Preparing for a final laboratory test	5
17	Preparing a project or documentation	5
18	Preparing for an examination	10
19		
20	<b>Number of hours of a student's unassisted work</b>	<b>61</b> <i>(sum)</i>
21	<b>Number of ECTS credit points which a student receives for unassisted work</b> <i>(1 ECTS point=25-30 hours)</i>	<b>2.4</b>
22	<b>Total number of hours of a student's work</b>	<b>100</b>
23	<b>ECTS points per module</b> <i>1 ECTS point=25-30 hours</i>	<b>4</b>
24	<b>Work input connected with practical classes</b> <i>Total number of hours connected with practical classes</i>	<b>54</b>
25	<b>Number of ECTS credit points which a student receives for practical classes</b> <i>(1 ECTS point=25-30 hours)</i>	<b>2.2</b>

## E. LITERATURE

Literature list	1. Korol J., <i>Visual Basic w Excelu 2000</i> , Mikom 2001. 2. Korol J., <i>Visual Basic dla aplikacji w Excelu</i> , Micom Warszawa. 3. Czarny P., <i>VBA dla Excelsa 2007 pl</i> , Helion 2008. 4. Orvis W.J., <i>Visual Basic dla windows</i> , LT&P Warszawa.
Module website	<a href="http://www.tu.kielce.pl/~wzimk_mat">http://www.tu.kielce.pl/~wzimk_mat</a>