COURSE SPECIFICATION

Course code	full-time studies	**Z-ZB-E-203**
	part-time studies	**-**
Course title in English	**Informatics – programming**	
Course title in Polish	**Informatyka – programowanie**	
Valid from academic year	**2025/2026**	

PLACEMENT IN THE TEACHING PROGRAM

Programme of study	**BUSINESS MANAGAMENT**
Level of education	**1st degree**
Studies profile	**academic**
Form and mode of study	**full-time programme**
Scope	**all**
Academic unit responsible for the course	**Department of Information Technology**
Course coordinator	**dr inż. Paweł Stąpór**
Approved by	**dr hab. inż. Dariusz Bojczuk, prof. uczelni**

GENERAL CHARACTERISTIC OF THE COURSE

Teaching block		**Subject of general education**
Course status		**Obligatory**
Language of instruction		**English**
Semester of delivery	full-time studies	**Semester II**
	part-time-studies	**-**
Prerequisites		**The Fundamentals of Computer Science**
Exam (YES/NO)		**NO**
ECTS		**3**

Method of conducting classes		**lecture**	**classes**	**laboratory**	**project**	**other**
Number of hours per semester	full-time	**15**		**30**	**10**	
	part-time					

LEARNING OUTCOMES

Category	Outcome code	Course learning outcomes	Reference to the directional learning effect
Knowledge	W01	The student has knowledge of computer science in the field of structured programming and methods of referencing built-in objects used in the VBA programming language.	ZB1_W09
	W02	The student has knowledge of creating forms, setting properties of objects (elements) embedded in forms, and event programming.	ZB1_W09
	W03	Has knowledge of the syntax, grammar, and instructions of the VBA programming language, its library functions, and built-in functions.	ZB1_W09
	W04	Has knowledge of simple and complex data types (array, list, file, object).	ZB1_W09
	W05	Knows computational and data processing algorithms.	ZB1_W09
Skills	U01	The student is able to write user functions and procedures to change the properties of MS Excel objects.	ZB1_U05
	U02	The student is able to create a form using toolbox elements, set their properties and write procedures and functions that respond to events.	ZB1_U05
	U03	Is able to implement simple computational and data processing algorithms in the form of a computer program (summing, calculating extreme values, products, sorting)	ZB1_U05
Social competences	K01	The student understands the need to constantly supplement knowledge in the area of computer science and programming. The student understands the need to constantly supplement knowledge in the area of computer science and programming.	ZB1_K02

COURSE CONTENT

Method of conducting classes	Course content
lecture	1. Introduction to programming. Semantics and syntax of the programming language. Algebraic and logical expressions. Input/output instructions. The process of translation and program execution. 2. Data representation in computer memory. Basic data types: numeric, character, enumerated, others. 3. Macro recording, structure and principles of working with the VBA editor, objects, properties and methods, operations related to sheets and cells of the Excel workbook. 4. Using built-in functions and language libraries. Built-in functions for communication with the user, data type conversion functions. 5. Declaring variables and constants. Types of variables and constants. Making decisions in the VBA program (conditional and selection instructions). 6. Repeating actions - iterative process (loop instructions), using arrays in VBA, iterative collection handling. 7.Writing programs using your own procedures and functions, nesting procedures, passing parameters to subroutines. Scope of variables. File type Support for various types of files (text, binary). 8.Tools for creating forms, using the toolbox, designing and programming forms. 9. Support for external files.

laboratory	1. Defining simple algorithms, notation in various notations (e.g. in the form of a flowchart). Simple data types (numeric, character). Variables, operators and expressions. Assignment statement. Communication with the user: input/output instructions. 2. Developer tab. Recording macros. Built-in functions for communication with the user. 3. Toolbox elements – designing the graphical interface of the form. 4. Using library and built-in functions. Built-in functions for communication with the user. Declaration of variables, conditional statements, type conversions. 5. Iterative processing of sheet objects, loops in VBA. Arrays. Error handling. 6. User procedures and functions. Scope of variables. Parameters of procedures and functions and methods of passing them. Using the toolbox to create interactive sheets. Discussion of the sample application "Orders".
project	1. Implementation of a project involving the construction of an interactive spreadsheet using custom functions and procedures.

METHODS FOR VERIFYING LEARNING OUTCOMES

Outcome code	Learning outcomes verification methods					
	Oral examination	Written examination	Test	Project	Report	Other
W01			X	X		
W02			X	X		
W03			X			
W04			X			
W05			X			
U01			X	X		
U02			X	X		
U03			X	X		
K01						X

FORM AND CONDITIONS OF ASSESSMENT

Form of classes	Assessment type	Assessment Criteria
lecture	Credit with grade	Obtaining at least 50% of the maximum number of points in the final test. Exemption from the test for students who have obtained a credit for the laboratories at the appropriate level
laboratory	Credit with grade	Obtaining at least 50% of the points in the final test. Active participation in classes.
project	Credit with grade	Development of an application that meets the requirements specified in the design task.

STUDENT WORKLOAD

ECTS Balance							
No.	**Activity type**	**Student workload**					**Unit**
		full-time					
1.	Scheduled contact hours	W	C	L	P	S	h
		15		**30**	**10**		
2.	Other (consultations, exams)	**2**		**2**	**2**		h
3.	**Total number of contact hours**	**61**					h
4.	**Number of ECTS credits for contact hours**	**2,4**					ECTS
5.	**Number of hours of independent student work**	**14**					h
6.	**Number of ECTS points that a student obtains through independent work**	**0,6**					ECTS
7.	**Workload related to practical classes**	**55**					h
8.	**Number of ECTS credit points which a student receives for practical classes**	**2,2**					ECTS
9.	**Total number of hours of a student's work**	**75**					
10.	**ECTS credits for the course** *1 1 ECTS credit =25 student learning hours*	**3**					ECTS

W - LECTURE C – CLASSES L – LABORATORY P- PROJECT S – SEMINAR

READING LIST

1. David A. Williams, (2019), *Excel programming*. Independently Published.
2. John Walkenbach, (2010), *Excel VBA Programming For Dummies*, 2nd Edition, Wiley Publishing, Inc.
3. David A. Williams (2019), *Excel Programming: The Ultimate Collection to Learn Excel VBA & Excel Macros Step by Step,* Independently Published.