

## FACULTY OF COMPUTER SCIENCE AND MANAGEMENT

**SUBJECT CARD**

**Name in Polish:** Programowanie aplikacji użytkowych  
**Name in English:** Programming applications  
**Main field of study (if applicable):** Management  
**Specialization (if applicable):** Organizational management  
**Level and form of studies:** 1st level, full-time  
**Kind of subject:** optional  
**Subject code:** IEZ1211  
**Group of courses:** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	<b>30</b>		<b>30</b>		
Number of hours of total student workload (CNPS)	<b>60</b>		<b>60</b>		
Form of crediting	<b>crediting with grade</b>		<b>crediting with grade</b>		
For group of courses mark (X) final course					
Number of ECTS points	<b>2</b>		<b>2</b>		
including number of ECTS points for practical (P) classes			<b>2</b>		
including number of ECTS points for direct teacher-student contact (BK) classes	<b>1</b>		<b>1</b>		

\*delete as applicable

**PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES**

1. Knows the functional and hardware structures of computers, the concept and the classification of computer software.
2. Capable of using computers, working in the operation system graphical environment using application programs.

**SUBJECT OBJECTIVES**

- C1. To acquire capability to create internet information systems.  
 C2. To acquire capability to create basic computer programs.  
 C3. To acquire social competencies specific for the applications of web services and application development in information systems in organizations

### SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK\_W01. Knows the rules for designing and developing websites and the basics of HTML and CSS.

PEK\_W02. Knows the basic principles of design and development of computer programs.

PEK\_W03. Knows how to automate tasks using software applications and programming languages.

relating to skills:

PEK\_U01. Capable to perform a simply information system.

PEK\_U02. Capable to implement a simply computer program.

PEK\_U03. Capable take advantage of the programming elements to extend the functionality of computer utility package.

relating to social competences:

PEK\_K01. Capable unaided to develop her/his knowledge and skills, to collaborate and to work in groups, ready to identify, analyze and solve problems in the area of the use of Internet services and utilities in the organization

PEK\_K02. Capable professionally to find and chose problem solving methods, to take the responsibility for them, pass over, convince and defend own views related to the application of the computer programming.

### PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1,2	Internet information system. Create HTML documents.	3
Lec 2,3	Using CSS to create web pages.	3
Lec 4	Basic concepts of computer programming. Flowcharts.	2
Lec 5	Data types, variables and constants. Standard types. Algebraic expression: construction, types, valuation expressions.	2
Lec 6,7	Basic instructions and structural instructions.	4
Lec 8	Structural types: table, string, record. Defining data types.	2
Lec 9,10	Procedures and functions - defining and using.	4
Lec 11,12	Create and use macros. Automating tasks. Creating and using subroutines in MS Office / OpenOffice.	4
Lec 13	Create and use forms in MS Office / OpenOffice.	2
Lec 14,15	Create and use a library. Object-oriented programming.	4
	Total hours	30

Form of classes - class		Number of hours
	Total hours	

<b>Form of classes - laboratory</b>		<b>Number of hours</b>
Lab 1	Create HTML documents	2
Lab 2,3	Creating a website using HTML and CSS.	4
Lab 4	Practical test (F1).	2
Lab 5	Create a simple computer calculation programs.	2
Lab 6,7	Create programs using structural instructions.	4
Lab 8	Create programs with complex data structures.	2
Lab 9	Defining of the subroutines.	2
Lab 10	Practical test (F2).	2
Lab 11	Automating tasks with macros.	2
Lab 12,13	Creating forms and application programming elements in the computer utility package.	4
Lab 14	Practical test (F3).	2
Lab 15	Summary. Credit.	2
	Total hours	30

<b>Form of classes - project</b>		<b>Number of hours</b>
	Total hours	

<b>Form of classes - seminar</b>		<b>Number of hours</b>
	Total hours	

<b>TEACHING TOOLS USED</b>
N1. Lecture. N2. Multimedia presentation. N3. Laboratory instruction. N4. Instruction during classes. N5. Workstation with graphical operation system MS Windows and web browser. N6. Workstation with graphical operation system MS Windows and Dev-Pascal. N7. Workstation with graphical operation system MS Windows and MS Office / OpenOffice. N8. Practical test. N9. Written test.

**EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT**

<b>Evaluation</b> (F – forming (during semester), P – concluding (at semester end))	<b>Educational effect number</b>	<b>Way of evaluating educational effect achievement</b>
F1	PEK_W01 PEK_U01	Practical test

F2	PEK_W02 PEK_U02	Practical test
F3	PEK_W02 PEK_W03 PEK_U03	Practical test
P	PEK_W01 PEK_W02 PEK_W03 PEK_K01(partially) PEK_K02(partially)	Written test
P=1, F=3		

<b>PRIMARY AND SECONDARY LITERATURE</b>
<b><u>PRIMARY LITERATURE:</u></b> [1] Freeman Er., Freeman El.: Head First HTML with CSS & XHTML. [2] Jelen B., Syrstad T.: VBA and Macros: Microsoft Excel 2010. [3] Knuth D.E.: The Art of Computer Programming. [4] Wirth N.: The programming language Pascal.
<b><u>SECONDARY LITERATURE:</u></b> [1] Aho A.V., Ullman J.D., Hopcroft J.E.: Data Structures and Algorithms. [2] Wirth N.: Algorithms and Data Structures.
<b>SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)</b>
<b>Jerzy Pieronek, jerzy.pieronek@pwr.wroc.pl</b>

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT  
Programming applications  
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management  
AND SPECIALIZATION Organizational Management**

<b>Subject educational effect</b>	<b>Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**</b>	<b>Subject objectives***</b>	<b>Programme content***</b>	<b>Teaching tool number***</b>
<b>PEK_W01</b>	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1	Lec 1-3	1 – 2, 9
<b>PEK_W02</b>	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C2	Lec 4-10	1 – 2, 9
<b>PEK_W04</b>	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C2	Lec 11-15	1 – 2, 9
<b>PEK_U01</b>	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1	Lec 1-3 Lab 1-3	3, 4, 5, 8
<b>PEK_U02</b>	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C2	Lec 4-10 Lab 5-9	3, 4, 6, 8
<b>PEK_U04</b>	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C2	Lec 11-15 Lab 11-13	3, 4, 7, 8
<b>PEK_K01</b>	K1_ZARZ_K02, K1_ZARZ_K03	C3	In connection with all programme content	In connection with all teaching tools
<b>PEK_K02</b>	K1_ZARZ_K03, K1_ZARZ_K05, K1_ZARZ_K06	C3	In connection with all programme content	In connection with all teaching tools

\*\* - enter symbols for main-field-of-study/specialization educational effects

\*\*\* - from table above