

FACULTY OF ELECTRICAL  
ENGINEERING**SUBJECT CARD**

Name in Polish: **Programowanie obiektowe**  
 Name in English: **Object programming**  
 Main field of study (if applicable): **Electrical Engineering**  
 Specialization (if applicable):  
 Level and form of studies: **1st level, part-time**  
 Kind of subject: **optional**  
 Subject code: **ELR042570**  
 Group of courses: **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU):			10		
Number of hours of total student workload (CNPS):			108		
Form of crediting:			crediting with grade		
For group of courses mark (X) final course:					
Number of ECTS points:			4		
including number of ECTS points for practical (P) classes :			4		
including number of ECTS points for direct teacher-student contact (BK) classes:			2.80		

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

1. Knowledge of structured programming.
2. Abilities of handling computer.
3. Abilities of programming in the C language.

**SUBJECT OBJECTIVES**

- C1. Writing programs according to rules of the object-oriented programming.  
 C2. Developing programs with the use of the C++ language.

**SUBJECT EDUCATIONAL EFFECTS***relating to knowledge:**relating to skills:*

PEK\_U01 The student is able to use of idea of the object-oriented programming.

PEK\_U02 The student is able to write programs in the C++ language.

*relating to social competences:*

PEK\_K01 The student can independently develop computer programs.

**PROGRAMME CONTENT**

Form of classes - laboratory		Number of hours:
Lab 1	Introduction. Object programming. Creating objects.	2
Lab 2	Implementation of member functions.	2
Lab 3	Function and operator overloading.	2
Lab 4	Inheritance.	2
Lab 5	Polymorphism.	2
Total hours:		<b>10</b>

### TEACHING TOOLS USED

- N1. Preparation in the form of reports.  
 N2. The C++ programming environment.  
 N3. Study consultations.

### EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation <i>F - forming (during semester) P - concluding (at semester end)</i>	Educational effect number	Way of evaluating educational effect achievement
F1(L)	PEK_U01 PEK_U02	entrance tests, oral answers, activity at the classes
F2(L)	PEK_U01 PEK_U02 PEK_K01	reports from the classes
P(L)	0.3 F1 + 0.7 F2	

### PRIMARY AND SECONDARY LITERATURE

#### PRIMARY LITERATURE:

- [1] Grębosz J., Symfonia C++, Kraków, Kallimach 2000.  
 [2] J. Kisilewicz, Język C++. Programowanie obiektowe, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2005.  
 [3] Sexton C., Programowanie w C++ - to proste, RM, Warszawa 2001.

#### SECONDARY LITERATURE:

- [1] Kubiak M. J., Programuję w językach Turbo Pascal i C/C++: programowanie strukturalne z elementami programowania obiektowego, Mikom, Warszawa 2001.  
 [2] I. Pohl, C++ by Dissection, Boston, Addison-Wesley 2002.

### SUBJECT SUPERVISOR

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### MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT ELR042570 - Object programming AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Electrical Engineering

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)	Subject objectives	Programme content	Teaching tool number
PEK_U01	K1ETK_U13	C.1	Lab1 Lab2 Lab3 Lab4 Lab5	N.1 N.2 N.3
PEK_U02	K1ETK_U13	C.2	Lab1 Lab2 Lab3 Lab4 Lab5	N.1 N.2 N.3
PEK_K01	K1ETK_K05 K1ETK_K06	C.1 C.2	Lab1 Lab2 Lab3 Lab4 Lab5	N.1