

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: **ELR052570**  
 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):			60		
Form of crediting:			crediting with grade		
For group of courses mark (X) final course:					
Number of ECTS points:			2		
including number of ECTS points for practical (P) classes :			2		
including number of ECTS points for direct teacher-student contact (BK) classes:			1.40		

**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 LEARNING OUTCOMES***relating to knowledge:**relating to skills:*

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

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

*relating to social competences:*

PEU\_K01 The student can independently develop computer programs.

**PROGRAMME CONTENT**

<b>Form of classes - laboratory</b>		<b>Number of hours:</b>
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 LEARNING OUTCOMES ACHIEVEMENT**

<b>Evaluation</b> <i>F – forming (during semester)</i> <i>P – concluding (at semester end)</i>	<b>Educational effect number</b>	<b>Way of evaluating educational effect achievement</b>
F1(L)	PEU_U01 PEU_U02	entrance tests, oral answers, activity at the classes
F2(L)	PEU_U01 PEU_U02 PEU_K01	reports from the classes
P(L)	0.3 F1 + 0.7 F2	

**PRIMARY AND SECONDARY LITERATURE****PRIMARY LITERATURE:**

- [1] Meyers S., Skuteczny nowoczesny C++, Promise, Warszawa 2016.  
 [2] Prata S., Język C++ Szkoła programowania, Helion, Gliwice 2013.  
 [3] Stroustrup B., Język C++. Kompendium wiedzy, Helion, Gliwice 2014.

**SECONDARY LITERATURE:**

- [1] Kubiak M.J., C++. Zadania z programowania z przykładowymi rozwiązaniami, Helion, Gliwice 2017.  
 [2] Marius B., Nowoczesny C++. Zbiór praktycznych zadań dla przyszłych ekspertów, Helion, Gliwice 2019.  
 [3] Matlak M., Język C/C++ i obliczenia numeryczne. Krótkie wprowadzenie, Helion, Gliwice 2016.  
 [4] Rogers C., Jesse L., C++ w 24 godziny, Helion, Gliwice 2017.  
 [5] Wisnu A., C++. Struktury danych i algorytmy, Helion, Gliwice 2019.  
 [6] Zieliński J., Podstawy programowania w języku C++, Impuls, Kraków 2019.

**SUBJECT SUPERVISOR**

Kazimierz Wilkosz, kazimierz.wilkosz@pwr.edu.pl