



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Object oriented programming [S1Elmob1>PO2]

### Course

Field of study

Electromobility

Year/Semester

2/3

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

0

Laboratory classes

30

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

3,00

### Coordinators

dr hab. inż. Leszek Kasprzyk prof. PP  
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### Lecturers

### Prerequisites

Basic knowledge of computer science and programming. Ability to think abstractly.

### Course objective

Understanding the theoretical and practical issues of high-level programming with elements of object oriented programming, acquiring the ability to create applications in the environment of Microsoft Visual Studio (in C #)

### Course-related learning outcomes

Knowledge:

Knows the principles of high-level programming. Has knowledge of object-oriented programming useful when creating technical applications.

Skills:

Is able to use programming tools using elements of object-oriented programming.

Social competences:

Can independently search for information in literature and the Internet, also in foreign languages.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Skills acquired as part of the laboratory are verified on the basis of the final test and individual activity during the classes. Passing threshold: 50% of points. Obtaining additional points for activity during classes (especially for: discussing additional aspects of the issue; effectiveness of applying the acquired knowledge when solving a given problem; ability to cooperate as part of a team practically performing a specific task in the laboratory; comments related to improving teaching materials; diligence)

### Programme content

Basic principles of object-oriented programming

### Course topics

Implementation in the Visual Studio C # Express Edition environment of the issues presented in practical object-oriented programs using the following programming elements: object type declarations, fields and methods, readonly fields, static and ordinary object variables, constructors and destructors, properties, method overloading, operator overloads, encapsulation, inheritance, polymorphism and its application, abstract classes and methods, collections, graphic elements, basics of printout creation

### Teaching methods

Laboratory: individual work in a computer laboratory, involving the implementation of given functions and computer programs, discussion, demonstrations.

### Bibliography

Basic

1. J. Matulewski, Visual C# 2005 Express Edition. Od podstaw, Wyd. Helion, 2006
2. D. Farbaniec, Microsoft Visual Studio 2012 : programowanie w C# Dawid Farbaniec., Wyd. Helion, 2013
3. S. C. Perry, C# i .NET, Wyd. Helion, 2006
4. Trey Nash, Accelerated C# 2010, Apress, 2010
5. R. Elmasri, S. B. Navathe, Wprowadzenie do systemów baz danych, Wyd. Halion, 2005

Additional

1. K. Kuczmarski, Kurs C++, Avocado Software, 2004
2. N.M. Josuttis, C++ Programowanie zorientowane obiektowo, Vademecum Profesjonalisty, Helion 2003
3. Internet

### Breakdown of average student's workload

	Hours	ECTS
Total workload	80	3,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	50	2,00