## STUDY MODULE DESCRIPTION FORM

| Name of the module/subject **Object-oriented programming and databases** | | Code **1010322311010322646** |
|---|---|---|

| Field of study **Electrical Engineering** | Profile of study (general academic, practical) **(brak)** | Year /Semester **1 / 1** |
|---|---|---|

| Elective path/specialty **-** | Subject offered in: **Polish** | Course (compulsory, elective) **obligatory** |
|---|---|---|

| Cycle of study: **Second-cycle studies** | Form of study (full-time,part-time) **full-time** |
|---|---|

| No. of hours | No. of credits **2** |
|---|---|
| Lecture: **15**  Classes: **-**  Laboratory: **15**  Project/seminars: **-** | |

| Status of the course in the study program (Basic, major, other) **(brak)** | (university-wide, from another field) **(brak)** |
|---|---|

| Education areas and fields of science and art **technical sciences**      **Technical sciences** | ECTS distribution (number and %**)** **2   100%**              **2   100%** |
|---|---|

**Responsible for subject / lecturer:**

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**Prerequisites  in terms of knowledge, skills and social competencies:**

| 1 | **Knowledge** | Basic knowledge of high-level programming. |
|---|---|---|
| 2 | **Skills** | Skills in the basics of architecture and software systems. |
| 3 | **Social competencies** | Awareness of the need to expand their competences. |

**Assumptions and objectives of the course:**

Knowledge of both theoretical and practical aspects of object-oriented programming, skills in object-oriented application development environment. NET Visual C # applications and links to databases.

### Study outcomes and reference to the educational results for a field of study

**Knowledge:**

1. knows the rules of high-level programming - [K_W07++]

2. has knowledge of object-oriented programming useful when creating technical applications - [K_W07++]

**Skills:**

1. can be used a tool for programming using object-oriented programming elements  - [KU01+]

**Social competencies:**

1. can think and act in a creative way - [K_K01+]

### Assessment  methods of study outcomes

Lecture:

-assessment of knowledge and skills listed on the completion of a written,

-continuous evaluation for each course (rewarding activity).


Laboratory:

-end test and favoring knowledge necessary for the accomplishment of problems in the area of laboratory tasks,

-continuous evaluation for each course - rewarding gain skills they met the principles and methods,

-assessment of knowledge and skills related to the implementation of the tasks your practice.


Extra points for the activity in the classroom, and in particular for:

-propose to discuss additional aspects of the subject,

-effectiveness of the application of the knowledge gained during solving the given problem,

-ability to work within a team practice performing the task detailed in the laboratory,

-subsequent to the improvement of teaching materials,

-developed aesthetic-care tasks.

## Course description

Basic issues of object-oriented programming, Visual Studio C # Express Edition, the issue of representation of physical reality in data structures, declarations of object types, static and dynamic object-oriented variables, fields, methods, constructors and destructors, encapsulation, inheritance, polymorphism, abstraction, etc. Create controls, overloaded operators, artwork, prints. Basic components database.


Forms of conducting classes:

Lectures - multimedia presentations (including drawings, photographs, animations) supplemented by examples given on the whiteboard, taking into account various aspects of the presented issues, including: economic, ecological, legal and social; presentation of a new topic preceded by reminder of related content known to students from other items.

Laboratory - individual work at the computer

## Basic bibliography:

1. John Sharp: Microsoft Visual C# 2015 : krok po kroku, APN Promise, 2016

2. Boduch A.:Wstęp do programowania w języku C#, Wydawnictwo Helion, Gliwice 2006

3. Farbaniec Dawid: Visual Studio 2013 : tworzenie aplikacji desktopowych, mobilnych i internetowych, Helion, Warszawa 2015

4. Vieira R.:SQL Server 2005. Programowanie od podstaw, Wydawnictwo Helion, Gliwice 2007.

## Additional bibliography:

1. Perry S. C.:C# i .NET, Wydawnictwo Helion, Gliwice 2006.

2. Elmasri R., Navathe S. B.: &#38;#34;Wprowadzenie do systemów baz danych, Wydawnictwo Helion, Gliwice 2005

### Result of average student's workload

| Activity | Time (working hours) |
|---|---|
| 1. lectures | 15 |
| 2. laboratories | 15 |
| 3. participate in the consultations on the lecture | 8 |
| 4. participate in the consultations on the laboratories | 6 |
| 5. preparation for laboratory | 8 |
| 6. homeworks preparation | 8 |
| 7. prepare for a evaluation | 10 |

### Student's workload

| Source of workload | hours | ECTS |
|---|---|---|
| Total workload | 70 | 2 |
| Contact hours | 44 | 1 |
| Practical activities | 37 | 1 |