STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Basics in Automatics**		Code **1010401211010410173**

Field of study **TECHNICAL PHYSICS**	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: **First-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours Lecture: **1** Classes: **-** Laboratory: **1** Project/seminars: **-**	No. of credits **3**

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**	ECTS distribution (number and %) **3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of computer science.
2	**Skills**	Basic computer skills with Windows OS.
3	**Social competencies**	Ability to work in a group, active in solving problems

Assumptions and objectives of the course:

The course is designed to introduce the students to the software used for the preparation of the scientific and the analysis and presentation of the results of laboratory tests. Students are also acquainted with the issues of computer security. To familiarize students with the basics of C + + allows the creation of programs that solve numerical problems arising in physics and engineering

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

Knowledge:

1. Define the source code in a standard programming language C++. - [K_W05]

2. Present and discuss the principle of presenting the results of research, publishing literature references and building plots. - [K_W09]

3. List and describe the hazards and risks to which it is exposed to the computer user. - [K_W19]

Skills:

1. He can prepare properly formatted document which scientific work, including literature references, images, designs tables and indexes. - [K_U02]

2. Create a simple source code using C + + language. - [K_U03, K_U01]

3. It can create graphs and analyze scientific data content using Origin. - [K_U09, K_U017]

4. It can protect your data against unauthorized access. It can protect your computer against unwanted programs - [K_U023]

Social competencies:

1. Can engage in self-solve problems in IT - [K_K01]

2. Recognize the need for ethical use of computer software in accordance with its license. - [K_K02]

Assessment methods of study outcomes

Lecture - test contains 5-10 questions.

Laboratory exercises: a test of practical skills using a computer and software.

Course description

-ways of encoding and processing by computers

-basic types of applications running on the PC

-types of licenses and the licensing and sale of computer programs

-ergonomic principles when working with a computer

-emergency information - unwanted software, hacking, protect against them

MSDN-AA license acquisition in the student account on PP, service and operation of a network of university PP

-Advanced Document Creation - Microsoft Word

-imaging and analysis of results - OriginLab Origin

Programming in C + +:

  - Basic input output

  - Types and Declarations

  - Expressions and statements,

  - Arithmetic and logical operations,

  - Functions

  - Tables,

Basic bibliography:

1. Silberschatz A., Galvin P.B., Gagne G., ?Podstawy systemów operacyjnych? WNT 2006.

2. Origin - Podręcznik użytkownika, Gambit 2004.

3. Jerzy Grębosz ?Symfonia C++: programowanie w języku C++ orientowane obiektowo?,tom 1,2 i 3, Oficyna Kallimach, 2000.

Additional bibliography:

1. Aktualne numery czasopism komputerowych

Result of average student's workload

Activity	Time (working hours)
1. Lectures	15
2. Laboratory exercises	15
3. Exercise by computer	30
4. Consultation	5
5. Preparing to pass	10

Student's workload

Source of workload	hours	ECTS
Total workload	75	3
Contact hours	40	1
Practical activities	45	1