STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Information Engineering		**1010324311010320388**
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: **First-cycle studies**	Form of study (full-time,part-time): **part-time**	
No. of hours: Lecture: **16** Classes: **-** Laboratory: **-** Project/seminars: **-**		No. of credits: **2**
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 concerning computer science, mathematics, computer hardware, Windows operating system and application software
2	**Skills**	Handling of computer, Windows operating system, and basic application software
3	**Social competencies**	Awareness of the necessity of broadening knowledge and skills. Ability to respect the rules being in force during lectures in a large group of people and ability to communicate with the nearest neighborhood and with the lecturers

Assumptions and objectives of the course:

Learning of basic knowledge concerning computer science; learning how to devise simple algorithms; learning the basics of structural programming in the C++ programming language.

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

Knowledge:

1. characterize: fields and application areas of computer science, methods of devising iterative and recursive algorithms - [K_W11 +++]

2. exemplify simple algorithms of solvable analytically problems from mathematics and physics, illustrate sorting algorithms, characterize the method of creating computer programs in the C++ programming language - [K_W11 +++]

Skills:

1. formulate simple algorithms and elaborate respective computer programs in the C++ programming language - [K_U04 +++]

2. use programming environments and computing tools appropriate in the work of an electrical engineer - [K_U13 +]

Social competencies:

1. ability to think and act responsibly and individually in the area connected with usage of computer software to increase work efficiency of an electrical engineer and improve enterprise economical significance - [K_K04 +]

2. ability to learn, ability to manage confidently different situations concerning exploitation of computer hardware and software - [K_K01++]

Assessment methods of study outcomes

Lectures: written test verifying both theoretical knowledge and practical skills. Additional points for activity during lectures, in particular for: preparing answers for questions provided by the lecturer; preparing solutions for problems provided by the lecturer, careful elaboration of tasks ? within self-study, efficient and brilliant solving of current problems.

Course description

History of computer science, its application areas and research directions. Operating systems, computer networks. Internet, intranet. Algorithms and data structures. Chosen algorithms of analytically solvable mathematical and physical problems, and sorting?s algorithms. Programming languages. C++ programming language. Basics of structural programming in the C++ programming language. Programming in the C++ Builder environment.

Basic bibliography:

1. Cormen T., Leiserson C., Rivest R., Wprowadzenie do algorytmów, WNT, Warszawa, 2000.
2. Gręboszc J., Synfonia C++ Standard, Edition, 2007.
3. Metzger P., Anatomia PC, Helion, 2001.
4. Praca zbiorowa, C++ Builder 5, Vademecum profesjonalisty, Helion, 2002.

Additional bibliography:

1. Wróblewski P., Algorytmy, struktury danych i techniki programowania, Helion 2003.
2. Stasiewicz A., C++ ćwiczenia praktyczne, Wyd. II, Helion, 2006.

Result of average student's workload

Activity	Time (working hours)
1. participation in lectures	16
2. preparation of answers for questions and problems put forward by the lecturer	8
3. participation in consultations	6
4. preparation for a written test	12

Student’s workload

Source of workload	hours	ECTS
Total workload	42	2
Contact hours	24	1
Practical activities	0	0