STUDY MODULE DESCRIPTION FORM

Name of the module/subject **An introduction to programming**	Code **1010331511010334957**

Field of study **Information 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) **full-time**

No. of hours								No. of credits
Lecture:	**30**	Classes:	**-**	Laboratory:	**30**	Project/seminars:	**-**	**6**

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 %**)** **6 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has a basic knowledge resulting from the high school
2	**Skills**	Student is able to meet the challenges arising from the high school.
3	**Social competencies**	Student has social skills resulting from the high school.

Assumptions and objectives of the course:

Basic programming styles and programming concepts with examples of programs in C/C++.

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

Knowledge:

1. Student has structured and theoretically founded knowledge of the core. software design, implementation of algorithms, programming paradigms and styles, methods of verifying the correctness of programs, formal languages??, compilers, platforms. - [K_W05]

Skills:

1. Student is able to use programming environments and platforms to write, perform and test simple programs coded in imperative programming languages??. - [K_U10]

2. Student is able to construct algorithms using basic algorithmic techniques and analyze their complexit. - [K_U09]

Social competencies:

1. Student is aware of the importance of the accurate completion of the project, notational standards, respect for linguistic correctness and timely submissions. - [K_K07]

Assessment methods of study outcomes

Lectures: written tests, pass criterion of 50.1% points.

Laboratory: exercises tests and laboratory reports.

Course description

Lectures:

Algorithm vs program. Basic programming styles: imperative, declarative,object-oriented. Basic data structures in C and C++. Basic programming concepts: declarations and definitions of variables,constants and their types, arithmetical and logical operators ,

expressions, assignments, conditionals, loops, goto statement, I/O statements, files and streams. Functions and procedures. Parameters. Pointers. Dynamic memory allocation and implementation of dynamic data structures. Recursion and is implementation. Program correctness and appropriate verification methods.

Laboratory:

An introduction to Visual Studio: edition, compilation, execution and debugging.

Declarations and definitions of variables. Simple i/o statement.

Assignments and conditional statements.

One and mutli-dimensional arrays, loops.

Functions, procedures and their parameters.

Pointers and dynamical memory allocation. Structures.

Dynamical data structures: lists, queues, stacks, trees.

Basic bibliography:

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. participation in lectures	30
2. participations in labs.	30
3. exam, consultation	10
4. preparation for labs., reports	45
5. preparation for tests and exam	35

Student’s workload

Source of workload	hours	ECTS
Total workload	150	6
Contact hours	75	3
Practical activities	75	3