

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject An Itroudction to Computing		Code 1010804121010820031
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 1 / 2
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: 20 Classes: - Laboratory: 25 Project/seminars: -		No. of credits 6
Status of the course in the study program (Basic, major, other) major		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 6 100% 6 100%
Responsible for subject / lecturer: dr hab. inż. Mariusz Głabowski, prof. nadzw. email: mariusz.glabowski@put.poznan.pl tel. +48 61 665 3904 Wydział Elektroniki i Telekomunikacji ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of mathematics K1_W01
2	Skills	Is able to retrieve and interpret information from books and Internet K1_U01
3	Social competencies	Student understands a necessity to acquire a new knowledge and skills stemming from a chosen field of studies. K1_K01
Assumptions and objectives of the course: The aim of the subject is to deliver to a student a basic knowledge of algorithms, data structure, computational complexity, and principles of object programming in C++.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Knows the principles of construction of computer programs ; has knowledge from the area of computing science; knows the syntax of C, C++, - [K1_W09] 2. Has a basic knowledge of algorithms (sorting, greedy algorithms, searching, graph algorithms) and data structures (tables, binary trees, graphs) - [[K1_W09]]		
Skills: 1. Is able to write software for basic computational algorithms, using C/C++ programming languages - [K1_U13] 2. Uses high level programming languages: C, C++ - [K1_U13] 3. Is able to write and run programs to solve selected problems in telecommunication - [K1_U13]		
Social competencies: 1. Is aware of the limitations of his/her current knowledge and skills; is committed to further self-study. - [K1_K01] 2. Demonstrates responsibility and professionalism in solving technical problems. Is able to participate in collaborative projects. - [K1_K02]		
Assessment methods of study outcomes		

<p>Forming assessment: Lectures: Written exam; exam is passed when student receives at least 50% points. Exam can be taken after the completion of laboratories.</p> <p>Laboratories: - evaluation and assessment of knowledge increment that need to be effective in solving problems covering all tasks within a given subject area; - continuous assessment during daily classroom practice - rewarding knowledge increment in skills in management of using rules and methods learnt in class.</p>		
Course description		
<ul style="list-style-type: none"> - computers? architecture - complexity - greedy algorithms - recursion - structure of C programs - basic data structures - operators and expressions - control statements, recursion vs. iteration - arrays - functions - functions with multiple parameters - function templates - sorting and searching algorithms - pointers and dynamic memory allocation - structure of C++ program - classes and objects - Inheritance - Polymorphism - class templates - object oriented programming 		
<p>Basic bibliography:</p> <ol style="list-style-type: none"> 1. D.E. Knuth, The art of computer programming, Addison-Wesley Publishing Company, Reading, MA, 1968, 1973. 2. T.H. Cormen, C.E. Leiserson, R.L. Rivest, C. Stein, Introduction to Algorithms, The MIT Press; third edition edition (July 31, 2009) 3. Paul Deitel, Harvey Deitel, C++ How to Program, Prentice Hall; 9 edition (February 22, 2013) 		
<p>Additional bibliography:</p> <ol style="list-style-type: none"> 1. N. Wirth, Algorytmy + struktury danych = programy, WNT, Warszawa, 1980 		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures	45	
2. Laboratories	40	
3. Preparation for lectures	40	
4. Preparation for laboratories	50	
5. Exam	4	
6. Discussion of exam outcomes	4	
Student's workload		
Source of workload	hours	ECTS
Total workload	165	6
Contact hours	50	4
Practical activities	105	2