Załącznik Nr 5 do Zarz. Nr 33/11/12

Z1-PU7	WYDANIE N1	Strona 1 z 3

(pieczęć wydziału)

COURSE DESCRIPTION

1. Course title: **2. Course code:** FCP

FUNDAMENTALS OF COMPUTER PROGRAMMING

3. Validity of course description: 2018/2019

4. Level of studies: 1st cycle of higher education

5. Mode of studies: intramural studies

6. Field of studies: INFORMATICS

7. Profile of studies: general academic

8. Specialty: -

9. Semester: I

10. Faculty teaching the course: Faculty of Automatic Control, Electronics, and Computer Science

11. Course instructor: dr hab. inż. Krzysztof Simiński

12. Course classification: common courses

13. Course status: obligatory

14. Language of instruction: English

15. Prerequisite qualification: –

16. Course objectives:
The objective to the course is introduction into design, implementation, and testing of software in high-level programming language (C++). This is a propedeutic course for object programming, software engineering, and algorithms and data structures.

17. Description of learning outcomes:

No.	learning outcomes description	method of assessment	teaching methods	kearing outcomes reference codes
1	Student knows programming paradigms, software design methods.	written exam	lecture	K1A_W09
2	Student knows syntax and semantics of high-level programming language	project, laboratory	lecture, laboratory	K1A_W11
3	Student can write down an algorithm in a high-level programming language.	project, written exam	lecture, laboratory	K1A_W12, K1A_W15, K1A_W17
4	Student can create software and can use techinical manuals.	project	laboratory	K1A_W15, K1A_W17, K1A_U03, K1A_U07
5	Student can test software.	project	laboratory	K1A_U15, K1A_U19

18. Teaching modes and hours

lecture: 30 **laboratory:** 30

19. Syllabus description:

Lecture:

1. introductory issues: object, operations, programs, processes, programming paradigms
2. conditional statements, loops
3. arrays
4. functions, recursion
5. files and streams
6. structures
7. pointers, allocation and deallocation of memory
8. singly and doubly linked lists
9. binary search trees

Laboratory:

1. introductory issues: data types, variables, instructions, conditions, simple program
2. loops, array, minimum (maximum) search, sorting
3. functions, parameters, return values
4. structures
5. files and streams
6. dynamic abstract structures (lists and trees)

Project

20. Written exam: yes

21. Primary sources:

1. A. Allain: „Jumping into C++"
2. N. Wirth: „Algorithms + Data Structures = Programs"

22. Secondary sources:

1. B. Stroustrup: „The C++ Programming Language", 2014

23. Total workload required to achieve learning outcomes

No.	teaching mode	contact hours / student workload hours
1	lecture	30 / 30
2	classes	/
3	laboratory	30 / 60
4	project	- / -
5	BA/MA seminar	- / -
6	other (exam)	- / 30
	total number of hours	60 / 120

24. Total hours: 180

25. Number of ECTS credits:[1] 6

26. Number of ECTS credits for contact hours: 2

27. Number of ECTS credits for in-practice hours (laboratory, classes, project): 2

26. Comments: -

[1] 1 ECTS – 30 h

approved:

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(date, instructor’s signature)

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(date, signature of the Director of the Faculty Unit)