

(faculty stamp)

COURSE DESCRIPTION

Z1-PU7

WYDANIE N1

Strona 1 z 4

1. Course title: SOFTWARE CERTIFICATION			2. Course code: SC	
3. Validity of course description: 2019/2020				
4. Level of studies: 2nd cycle of higher education				
5. Mode of studies: intramural studies				
6. Field of study: INFORMATICS				
7. Profile of studies: general academic				
8. Specialty: INDUSTRIAL INFORMATICS SYSTEMS				
9. Semester: I				
10. Faculty teaching the course: Institute of Informatics				
11. Course instructor: Prof. Andrzej Kwiecień				
12. Course classification: common courses				
13. Course status: obligatory				
14. Language of instruction: English				
15. Pre-requisite qualifications: Fundamentals of computer programming				
16. Course objectives: The goal of the course is to present the necessity of software certification in case of safety related applications. The lecture includes certification problem definition and examples on why certification is important or even requires in some areas. During the lecture international standard on functional safety of electrical/electronic/programmable electronic safety-related systems is presented together with standard on electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen. Requirements and tests for apparatus using software and/or digital technologies is also described.				
17. Description of learning outcomes:				
No.	Learning outcomes description	Method of assessment	Teaching methods	Learning outcomes reference code
W1	Knows and understands the life-cycle of software safety	PS, OP	WM	K2A_W10
W2	Knows and understands the possible outcomes of misoperation of computer software	PS, OP	WM	K2A_W12
W3	Knows and understands the design rules of safety related programmable devices	PS, OP	WM	K2A_W08
W4	Knows and understands the software development process according to software certification standards	PS, OP	WM	K2A_W14

18. Teaching modes and hours		
Lecture: 15 h, Class: -, Laboratory: -		
19. Syllabus description:		
Lectures: ▪ Definition of certification ▪ Why certification standards are needed? ▪ When certification is required – examples ▪ Certification of computer software ▪ About CENELEC - Comité Européen de Normalisation ELECTrotechnique, Brussels ▪ Computer system functional safety ▪ The life cycle of software safety ▪ Software design rules ▪ Standards: IEC 61508, PN-EN 50271		
20. Examination: no		
21. Primary sources:		
▪ Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies, IEC 61508PN-EN 50271 ▪ Functional safety of electrical/electronic/programmable electronic safety-related systems, IEC 61508:2010 CMV		
22. Secondary sources:		
23. Total workload required to achieve learning outcomes		
No.	Teaching mode	Contact hours / Student workload hours
1	Lecture	15/15
2	Classes	-
3	Laboratory	-
4	Project	-
5	BA/ MA Seminar	-
6	Other (exam)	-
	Total number of hours	15/15
24. Total hours: 30		
25. Number of ECTS credits: 1		
26. Number of ECTS credits allocated for contact hours: 1		
27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects): 0		
28. Comments: none		

Approved::

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(date, Instructor's signature)

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(date, the Director of the Faculty Unit signature)

