

NAME OF THE COURSE		Applied Computer Science					
Code	PMIA55	Year of study	1				
Course teacher	Hrvoje Kalinić, PhD, Assistant Professor	Credits (ECTS)	3				
Associate teachers		Type of instruction (number of hours)	L	S	E	F	
			15		30		
Status of the course	Elective	Percentage of application of e-learning	10%				
COURSE DESCRIPTION							
Course objectives	Undersand the computer science role in design and reproducibility of the experiment						
Course enrolment requirements and entry competences required for the course	-						
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<ul style="list-style-type: none"> • Ability to acquire and visualize data • Understand the need and use of data transformation and filtering • Describe a process as a sequence of operations • Write down a process in a form of algorithm • Write a script to be executed in a script language • Familiarity with basic commands, libraries and repositories • Familiarity wit the Linux command line interface (CLI) 						
Course content broken down in detail by weekly class schedule (syllabus)	Lectures and exercises: 1. Introduction and motivation 2. Design of experiment and the use of statistics 3. Introduction to algorithms: sequence, repetition, and choices 4. Variables ad information storage, operators and functions 5. Files and data storage 6. Sorting and text data 7. Plotting and reporting 8. Reproducibility: functions 9. Modules, libraries and repositories 10. Data tables 11. Database as connected data tables 12. Operation system, data storage and data flow 13. Linux CLI: pipe, redirection, grep, sed, awk... 14. Exam preparation						
Format of instruction	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> seminars and workshops <input checked="" type="checkbox"/> exercises <input type="checkbox"/> <i>on line</i> in entirety <input checked="" type="checkbox"/> partial e-learning <input type="checkbox"/> field work		<input type="checkbox"/> independent assignments <input type="checkbox"/> multimedia <input type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)				
Student responsibilities							
Screening student work (<i>name the proportion of ECTS credits for each</i>)	Class attendance	1	Research		Practical training		
	Experimental work		Report		(Other)		

<i>activity so that the total number of ECTS credits is equal to the ECTS value of the course)</i>	Essay		Seminar essay		(Other)	
	Tests	1	Oral exam		(Other)	
	Written exam	1	Project		(Other)	
Grading and evaluating student work in class and at the final exam						
Required literature (available in the library and via other media)	Title				Number of copies in the library	Availability via other media
	M. Kerrisk: The Linux Programming Interface				1	
	H. P. Langtangen: A Primer on Scientific Programming with Python					yes
Optional literature (at the time of submission of study programme proposal)						
Quality assurance methods that ensure the acquisition of exit competences						
Other (as the proposer wishes to add)						