NAME OF THE COURSE	Research Methodology in Natural Sciences					
Code	PMP104	Year of study	1D			
Course teacher	Doc.dr.sc. Damir Kovačić	Credits (ECTS)	4			
Associate teachers	-	Type of instruction (number of hours)	L	S	E	F
			30	0	15	0
Status of the course	Obligatory	Percentage of application of e-learning	20			

COURSE DESCRIPTION	
Course objectives	To familiarize students with research methods in the field of natural sciences
Course enrolment requirements and entry competences required for the course	Enrolled one of the diploma study programs
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	• To distinguish between scientific and non-scientific approach to problem solving • To enumerate basic methods of research in the natural sciences • To define steps in setting up scientific research in the natural sciences • To analyze scientific paper • To create structure of the scientific article • To define the methods of scientific communication
Course content broken down in detail by weekly class schedule (syllabus)	Basic scientific methods and principles. Testability of scientific hypotheses. The differences in the methods and aims of the work with social, technical and natural sciences. Reproducibility, standards, controls, and displays of measurement errors. Iterative cycles of experiments and hypotheses. Science as global process. How to recognize scientific work. The choice of research problem - to be both conservative and revolutionary. How to solve a scientific problem. How to describe the results. How to cite references. How to relieve colleagues that we find the errors. The key role of better communication with colleagues. Impact factor journals. Quotes papers - examples. Science on the Internet - what are the servers. Science in Croatia. Examples of good and bad works. Term papers from this course. The principles of work during graduate / master's and doctoral thesis. Evaluation work.
Format of instruction	☒ lectures ☒ seminars and workshops ☒ exercises ☐ *on line* in entirety ☐ partial e-learning ☐ field work ☐ independent assignments ☐ multimedia ☐ laboratory ☐ work with mentor ☐ (other)
Student responsibilities	The student is required to attend lectures, seminars and exercises, with a maximum of 20% of *excused* absences. The student is required to write a term paper with the chosen topic and present it in the form of presentation to colleagues and teacher.

Screening student work *(name the proportion of ECTS credits for each activity so that the total number of*						
	Class attendance	2	Research		Practical training	
	Experimental work		Report		(Other)	
	Essay		Seminar essay	2	(Other)	

ECTS credits is equal to the ECTS value of the course)	Tests		Oral exam		(Other)	
	Written exam		Project		(Other)	

Grading and evaluating student work in class and at the final exam	The grade is determined based on: • Seminar paper (50% grade) • Oral presentation (50% grade)

	Title	Number of copies in the library	Availability via other media
Required literature (available in the library and via other media)	1. R. N. Giere: UnderstandingScientificReasoning, Thomson-Wadsworth, SAD, 1997. ISBN 0-15-501625-3.	2	

Optional literature (at the time of submission of study programme proposal)	• P. D. Leedy I J. E. Ormrod: PracticalResearch. PlanningandDesign. Pretince Hall, SAD. 2001. ISBN 0-13-121854-9. • R. N. Giere: UnderstandingScientificReasoning, Thomson-Wadsworth, SAD, 1997. ISBN 0-15-501625-3.
Quality assurance methods that ensure the acquisition of exit competences	• Evaluation of results in accordance with the determined learning outcomes • Feedback from students via surveys • Self-evaluation of teacher • Institutional and non-institutional checks
Other (as the proposer wishes to add)	