NAME OF THE COURSE	Introduction to Research Methods in Biology					
Code	PMB510	Year of study	2.			
Course teacher	Assist. Prof. Željana Fredotović, PhD	Credits (ECTS)	3,0			
Associate teachers		Type of instruction (number of hours)	L	S	E	F
			30	15		
Status of the course	mandatory	Percentage of application of e-learning	40%			

COURSE DESCRIPTION

Course objectives	Introduce students with basic knowledge about different scientific research designs and methods. Students will learn to use online library reference sources and services, and learn how to set up a research study- from constructing the hypotheses to formulation of a research plan (methods and techniques), data analysis, writing the paper and finally presenting it.
Course enrolment requirements and entry competences required for the course	None.
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	After passing the exam, the student will: 1. understand the definition of science and scientific thinking 2. gain knowledge of the classification of scientific work by fields and branches and scientific titles 3. be able to search various databases and use scientific literature 4. acquire skills in citing literature correctly 5. be able to design, write, and present a scientific paper.
Course content broken down in detail by weekly class schedule (syllabus)	Lectures 1. Science, scientific and critical thinking. Classification of scientific work by fields, branches, and scientific titles (2 hours). 2. classification of written work: Characteristics of scientific, scientific-research and professional works, types of scientific, scientific-professional and professional works (2 hours). 3. search in scientific literature. Introduction to basic databases (online, SCI, CC..). Use of scientific and professional literature and correct citation (4 hours). 4. how to do scientific research, write and publish a scientific paper in biology (part 1) _Preparations for research: choosing a research topic, gathering information (studying the literature), reading scientific papers, taking notes, making hypotheses and research objectives (4 hours). 5. how to do scientific research, write and publish a scientific paper in biology (part 2) _designing scientific research: selecting materials and research methods (* introduction to the criteria of proper sampling, the importance of including replicates and control samples, conducting preliminary sampling (4 hours). 6. how to conduct scientific research, write and publish a scientific paper in biology (Part 3) _conduct research (observations, measurements, experiments), collect and process results (selection of computer programs for organizing tabular and pictorial contributions, selection of statistical methods) (4 hours) 7. how to do scientific research, write and publish a scientific paper in biology (part 4) _Writing a scientific paper: parts of the paper, writing process, writing style, respect for ethical principles in the process of writing a paper, choosing a scientific journal (4 hours) 8. how to do scientific research, writing and publishing a scientific paper in biology (part 5) _procedures for publishing a scientific paper, sending an article to a journal (2 hours)

	9. thesis and dissertation_ material, content, writing procedures and presentation of the paper (4 hours). Essay: • students have to write an essay paper in the form of a scientific article according to the rules of writing a scientific paper (introduction, materials and methods, results and discussion and conclusion). Students can draft their own scientific paper or use a previously published paper in the field they want to write about by searching databases. The written seminar paper will be presented publicly by the students (PowerPoint). The aim is to enable students to formulate scientific questions clearly and present them concisely, to integrate the knowledge acquired in the course through critical thinking and argumentation during the discussion on the topic of the seminar paper (15 hours).
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 obligations of students are regular attendance at classes (lectures) and independent preparation of materials for essey.

Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*						
	Class attendance	0,5	Research		Practical training	0,5
	Experimental work		Report		(Other)	
	Essay		Seminar essay	1	(Other)	
	Tests		Oral exam	1	(Other)	
	Written exam		Project		(Other)	

Grading and evaluating student work in class and at the final exam	The essay (topic processing and structure of the paper; graphical and other contributions; literature) and the presentation of the essay paper are evaluated.

Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Silobrčić, V. 2008. Kako sastaviti, objaviti i ocijeniti znanstveno djelo. Medicinska naklada, Zagreb.		

Optional literature (at the time of submission of study programme proposal)	1. Marušić, M. Uvod u znanstveni rad u medicini. 2013. Medicinska naklada, Zagreb. 2. McMillan, V.E. Writing papers in the biological sciences. 1997. Bedford Books, Boston
Quality assurance methods that ensure the acquisition of exit competences	Student questionnaire

Other (as the proposer wishes to add)	