NAME OF THE COURSE	Ecology of Early Developmental Stages of Fish					
Code	PPB313	Year of study	3			
Course teacher	Professor Mate Šantić, PhD	Credits (ECTS)	2			
Associate teachers		Type of instruction (number of hours)	L	S	E	F
			15	15		
Status of the course	Elective	Percentage of application of e-learning	10%			

COURSE DESCRIPTION	
Course objectives	Students adopt basic knowledge early development stages of fishes, from egg to adult phase.
Course enrolment requirements and entry competences required for the course	Zoology and Vertebrates
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	Student will be able to: 1. adopt basic knowledge about fish developmental stages 2. understand influences of biotic factors on early development stages 3. recognize effect of various abiotic factory (salinity, temperature, oxygen) to the physiology process during development . 4. understand reproductive modality 5. recognize influences of various factors on fish growth
Course content broken down in detail by weekly class schedule (syllabus)	Lectures: / Exercises: 1. Fish life stages. Reproductive organs. (1 L + 1 S) 2. Egg structure, egg shape and size. (1 L + 1 S) 3. Fecundity. (1 L + 1 S) 4. Time and place of spawning. (1 L + 1 S) 5. Spawning and Fertilization. (1 L + 1 S) 6. Embryonic development of fish eggs. (1 L + 1 S) 7.Hatches of embryo - larvae and postlarvae stage. (1 L + 1 S) 8. Factors affecting embryonic development. Temperature. (1 L + 1 S) 9. Influence of oxygen. (1 L + 1 S) 10. Influence of salinity. (1 L + 1 S) 11. Food and feeding. Feeding of postlarave stage. (1 L + 1 S) 12. Mode of swimming. Mode of hunting. Influence of prey size. (1 L + 1 S) 13. Growth of laravae and postlarave stages. (1 L + 1 S) 14. Mortality. Abiotic and biotic factors that influence on mortality. (1 L + 1 S) 15. Survival. Stock-recruitment relationship. (1 L + 1 S)
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	

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	1.0	Research		Practical training	
	Experimental work		Report		(Other)	
	Essay		Seminar essay	0.5	(Other)	
	Tests		Oral exam	0.5	(Other)	
	Written exam		Project		(Other)	

Grading and evaluating student work in class and at the final exam	Students will be evaluated on the basis of oral exam		
Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Q. Bone and R. Moore (2008) Biology of Fishes (2008). Third edition. Taylor and Francis group (eds).		Web material
Optional literature (at the time of submission of study programme proposal)	Blaxter JHS (1988). Pattern and variety in development. In: Fish physiology. 11A W.S. Hoar and D.J. Randall (eds). pp 1-58. Academic press. San Diego CA.		
Quality assurance methods that ensure the acquisition of exit competences	Active participation in course and seminar, personal consultation		
Other (as the proposer wishes to add)			