NAME OF THE COURSE	Structure and properties of biological membranes						
Code	**PMB718**	Year of study	2				
Course teacher	Marija Raguž, PhD, Associate Professor	Credits (ECTS)	3				
Associate teachers	Zvonimir Boban, MD	Type of instruction (number of hours)	L	S	E	F	
			15	5	15		
Status of the course	Elective	Percentage of application of e-learning	Elective				

COURSE DESCRIPTION

Course objectives	Introduction to the structure and dynamics of biological membranes through biophysical concepts and experimental methods.
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 successfully completing the course, students will be able to: • Identify and define the membrane system with description of structure and dynamics • Understand selected experimental methods for styding biological membranes • Explain models that describe biological membranes • Analyze and present the results of methods applied to study biological membranes
Course content broken down in detail by weekly class schedule (syllabus)	**Lectures and seminars:** Description, structure and dynamics of biological membranes (3P) Formation of biological membranes (2P) Phase transitions in the described systems (2P) Electron parametric resonance (2P + 2S) Nuclear magnetic resonance (2P) Fluorescence spectroscopy (2P + 1S) Fluorescence microscopy (2P + 2S) **Exercises:** 1. Methods of preparation of biological systems: Preparation of multilamellar liposomes (2V) Electroformation of giant unilamellar vesicles (4V) Extrusion of large unilamellar vesicles (3V) Preparation of small unilamellar vesicles (3V) Methods of preparation of supported membrane bilayer using small, large and giant unilamellar vesicles (3V)
Format of instruction	x lectures x seminars and workshops x exercises ☐ *on line* in entirety ☐ partial e-learning ☐ field work x independent assignments ☐ multimedia x laboratory ☐ work with mentor ☐ (other)
Student responsibilities	Active participation in classes and assignments. Work on the experimental devices.

Screening student work *(name the*	Class attendance	1,5	Research		Practical training	

proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)	Experimental work	1	Report		(Other)	
	Essay		Seminar essay	0,5	(Other)	
	Tests		Oral exam		(Other)	
	Written exam		Project		(Other)	

Grading and evaluating student work in class and at the final exam	Students will have the presentation of the specific topic.		
Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Original and review scientific articles and book chapters		internet
Optional literature (at the time of submission of study programme proposal)	R. A. Dunlap, Experimental Physics – Modern Methods, Oxford University Press, New York, 1988.		
Quality assurance methods that ensure the acquisition of exit competences	Students' evaluation via anonymous questionnaires at the end of the course. The survey is conducted according to the rules of the University of Split.		
Other (as the proposer wishes to add)			