<table>
<tr><td colspan="2">NAME OF THE COURSE</td><td colspan="5">Conservation biology</td></tr>
<tr><td>Code</td><td>PMB525</td><td>Year of study</td><td colspan="4">3</td></tr>
<tr><td>Course teacher</td><td>Assistant Professor Sanja Puljas, PhD</td><td>Credits (ECTS)</td><td colspan="4">4</td></tr>
<tr><td rowspan="2">Associate teachers</td><td rowspan="2"></td><td rowspan="2">Type of instruction (number of hours)</td><td>L</td><td>S</td><td>E</td><td>F</td></tr>
<tr><td>30</td><td>15</td><td></td><td></td></tr>
<tr><td>Status of the course</td><td>Mandatory</td><td>Percentage of application of e-learning</td><td colspan="4">10</td></tr>
<tr><td colspan="7">COURSE DESCRIPTION</td></tr>
<tr><td>Course objectives</td><td colspan="6">The rapid growth of the human population puts strong pressure on the survival of populations, communities and ecosystems on Earth. The aim of the course is to get acquainted with the scale of risk, understand the importance of conserving biodiversity and learn about ways in which knowledge of ecology can help increase the likelihood of maintaining biodiversity in the future.</td></tr>
<tr><td>Course enrolment requirements and entry competences required for the course</td><td colspan="6">There are no entry competences.</td></tr>
<tr><td>Learning outcomes expected at the level of the course (4 to 10 learning outcomes)</td><td colspan="6">Student will be able to:
-define conservation biology as an interdisciplinary science,
-define basic concepts about the goals of conservation biology,
-explain what biodiversity is and how it is measured,
-understand the value of biodiversity,
-enumerate the factors that lead to biodiversity endangerment,
-explain the negative impact on human biodiversity systems,
-connect the causes of biodiversity loss with their consequences,
-understand the importance of conserving endemics and species threatened by global extinction,
-critically discuss the reflection and planning of scientific research in the field of conservation biology,
-critically discuss management plans and strategies in conservation biology.</td></tr>
<tr><td>Course content broken down in detail by weekly class schedule (syllabus)</td><td colspan="6"><u>Lecture 1. Introduction to conservation biology</u>
The concept of conservation biology as a crisis discipline, history of conservation, examples of conservation of species and habitats at the global and local level.
<u>Lecture 2. Biodiversity-concept of species in conservation biology</u>
Definition of biodiversity and history of biodiversity conservation development, key species (flagship, umbrella, indicator, ecosystem engineers) and importance in biodiversity protection, IUCN species protection criteria, inventory and monitoring of biodiversity components.
<u>Lecture 3. Biodiversity and spatio-temporal scale</u>
Latitude, altitude and depth as gradients of species richness, comparison of land and sea biodiversity, risks of extinction on different spatial scales: local, regional and global. Timing patterns of biodiversity, changes in biodiversity on Earth over geological time.
<u>Lecture 4. Conservation genetics</u>
Areas of conservation genetics, importance of genetic diversity in biodiversity conservation, bottleneck effect, founder effect, genetic drift, inbreeding, outbreeding, genetics and species conservation.
<u>Lecture 5. Quantification of biodiversity</u>
Species richness index, Shannon index H, evenness, abundance of individual species (Abundance). Disadvantages of biodiversity measures.
<u>Lecture 6. Population viability analysis</u></td></tr>
</table>

	The notion of population viability, PVA and MVP analysis, development of programs for protection and conservation of endangered species, time intervals and anthropogenically determined times related to the probability of extinction, population survival, basic population models and population growth models. Statistical data processing. Lecture 7. Human-influenced biodiversity changes Expansion of human activities into the natural environment, intensive agriculture, mass tourism, harmful impact of industry, transport and energy sector on the coasts, domino effect, greenhouse gas emissions. Lecture 8. Habitat fragmentation, destruction and degradation Basic concepts and consequences of fragmentation, destruction and degradation of habitats, types of contamination and spread of contamination, erosion, deforestation and desertification, flood risk in the context of different land uses. Lecture 9. Biodiversity and climate change Climate change and biodiversity loss, areas most at risk of climate change, guidelines for integrating climate change and biodiversity into environmental impact assessments and strategic assessments, UN Framework Convention on Climate Change. Lecture 10. Endemics and conservation of species threatened with global extinction Endemics in a broader sense, local or stenoendemics, relict (old or paleoendemic) and progressive (young or neoendemic), ecologically isolated areas, karst underground of the Dinarides, endemic protection. Lecture 11. Introduced and invasive species and their impact on biodiversity Non-native species, routes of introduction and spread mechanisms of invasive species, impact of invasive alien species, methods of control, prevention of spread and removal of invasive species, invasiveness assessment procedure, Black List of invasive species of Europe, biological invasion in Croatia, legislation related to invasive species. Lecture 12. Conservation ethics Callicot (1990) –3 ethical principles: romantic-transcendental ethics (John Muir 1838-1914), ethics of resource conservation (Pinchot, 1865–1946), evolutionary-ecological ethics (Aldo Leopold, 1886–1948). Lecture 13. Legal bases of conservation biology Influence of economic and political factors on conservation biology, management plans and strategies in conservation biology. Lecture 14. Planning scientific research in the field of conservation biology Assessment of survival of populations of different species in current conditions, assessment of the probability of extinction within a 100-year period, models of population growth dynamics, variations that affect the survival of populations, estimates of variations. Lecture 15. Restoration ecology The concept of restoration ecology and examples of restoration on a global and local scale, methods of restoration ecology, challenges of restoration. SEMINARS: During the semester there are 3 permanent seminars and 3 additional ones that depend on current events in the field of conservation biology. Permanent seminars: Seminar 1. Citizen science Seminar 2. NATURA 2000 Ecological Network Seminar 3. Mass extinctions in the past	
	☒ lectures	☒ independent assignments

Format of instruction	☒ seminars and workshops ☐ exercises ☐ *on line* in entirety ☒ partial e-learning ☐ field work	☒ multimedia ☐ laboratory ☐ work with mentor ☐ (other)
Student responsibilities	Students' presence in the amount of at least 70% of scheduled lectures, student seminar work.	

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	Research		Practical training		
Experimental work		Report		(Other)		
Essay		Seminar essay	1	(Other)		
Tests		Oral exam	1	(Other)		
Written exam	1	Project		(Other)		

Grading and evaluating student work in class and at the final exam	The final grade is the sum of the points on the written colloquia during the semester or oral exam in the exam period.

Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Šolić, Mladen (2009) Ljepota različitosti : Ekološki uzroci biološke raznolikosti na zemlji, Zagreb : Izvori, 286 str.	3	Yes
	Sodhi, N.S., Ehrlich P.R. (2010): Conservation Biology for All. Oxford University Press. (pdf		Web
	Maguire, I., Lazar, B. (2014): Konzervacijska biologija.		

Optional literature (at the time of submission of study programme proposal)	-Groom MJ, Meffe GK and Carroll CR (2005) Principles of Conservation Biology, 3rd ed. SinauerAssociates, 699 pp. -Primack RB (2010): Essentials of Conservation Biology, 5th ed. Sinauer Associates, 601 pp.
Quality assurance methods that ensure the acquisition of exit competences	-Taking attendance of students during classes. -Students' survey evaluation of teacher's work. -Feedback from graduated students on the relevance of the course content.
Other (as the proposer wishes to add)	Consultations are taking place according to the agreement with the students or by e-mail: spuljas@pmfst.hr