<table>
<tr><td colspan="2">NAME OF THE COURSE</td><td colspan="5">Biological Evolution</td></tr>
<tr><td>Code</td><td>PMB519</td><td>Year of study</td><td colspan="4">3</td></tr>
<tr><td>Course teacher</td><td>Professor Jasna Puizina, PhD</td><td>Credits (ECTS)</td><td colspan="4">3</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="6">COURSE DESCRIPTION</td></tr>
<tr><td>Course objectives</td><td colspan="5">Developing an awareness in students that evolution is not just a theory but a scientific fact based on vast amounts of material evidence from various scientific discipline (biology, physics, chemistry, paleontology, geology, anthropology and others). Knowing the basic facts and laws of the development of the living world. Introdicing the students with the latest discoveries in the field of molecular evolution. The acquired knowledge is necessary for integrative understanding of biology as a scientific discipline, and understanding a science-based understanding of the development of life on Earth.</td></tr>
<tr><td>Course enrolment requirements and entry competences required for the course</td><td colspan="5">None.</td></tr>
<tr><td>Learning outcomes expected at the level of the course (4 to 10 learning outcomes)</td><td colspan="5">1. Understand the facts and laws of development of life on Earth.
2. Argue and substantiate evolutionary processes.
3. Distinguish evolution from other unscientific theories of life development on Earth.
4. Explain the importance of evolutionary processes on examples from everyday life</td></tr>
<tr><td>Course content broken down in detail by weekly class schedule (syllabus)</td><td colspan="5">Lectures:
1. Historical overview of evolutionary thoughts, Darwin's life and his selection theory
2. Modern evolutionary synthesis. Punctuated equilibrium theory.
3. Paleontological evidences of evolution.
4. Comparative-anatomical, biogeographical and physiological evidences of evolution
5. Molecular-biological and genetic evidences of evolution
6. A living world in the past
7. The great extinctions ('The Big Five')
8. The origin of the planet Earth and the beginnings of life on Earth
9. Origin of organic matter on Earth: abiogentic theory.
10. RNA world
11. Revision of molecular systematics, a new tree of life. Endosymbiont theory of eukaryotic cell origin
12. The driving force of evolution 1. - the variability of living beings
13. The driving force of evolution 2 – natural selection. Speciation
14. Evolution of primates, anthropoids and hominoids
15. Evolution of human

Seminars:
1. Evolution, genetics, behavior and ecology of primates and apes
2. The first anthropoids, the first homionoids
3. From homionoids to hominids and humans
4. Application of molecular techniques in the study of human evolution: Molecular clock, mtDNA and Y chromosome</td></tr>
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	5. Comparison of the genomes of Neanderthals and modern man 6. Genetic diversity of modern humans 7. Evolution of skin pigmentation in humans, other examples of recent evolution on human 8. Evolution of the human life cycle, human behavior 9. Partner selection and the basics of evolutionary psychology 10. - 15. Journal club - other topics, according to the student's choice

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	Students should attend to at least 70% of lectures (21 hours). Student can pass two partial exams or a regular written exam.	

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	0,5	(Other)	
	Tests		Oral exam		(Other)	
	Written exam	1,5	Project		(Other)	

Grading and evaluating student work in class and at the final exam	The exam is written, and can be passed through two colloquia. 90% - 100% grade 5 (excellent) 78% - 89% grade 4 (very good) 66% - 77% grade 3 (good) 55% - 65% grade 2 (sufficient) < 55% grade 1 (insufficient)

Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Puizina Jasna: Biological evolution - web teaching materijal, essay questions.		E-learning, MS teams

Optional literature (at the time of submission of study programme proposal)	http://evolbiol.ru/docs/docs/large_files/why_evolution_is_true.pdf http://www.blackwellpublishing.com/ridley (Mark Ridley, Evolution, 3rd ed) http://evolution.berkeley.edu/evolibrary/article/evo Mirjana Kalafatić, 1998: Osnove biološke evolucije, Zagreb Yuval Noah Harari: Sapiens – kratka povijest čovječanstva, Fokus, Zagreb, 2015. Richard Dawkins: Najveća predstava na Zemlji, Izvori, 2008 Richard Dawkins: Sebični gen. Izvori, 1997. Matt Ridley: Genom. Izvori, 1997. Brian Sykes: Sedam Evinih kćeri. Naklada Zadro. Zagreb 2002. Brian Sykes: Adamovo prokletstvo - budućnost bez muškaraca, Algoritam, Zagreb, 2006. Geoffrey Miller: Razum i razmnožavanje. Kako je izbor partnera oblikovao evoluciju ljudske naravi. Algoritam, Zagreb, 2007
Quality assurance methods that ensure the acquisition of exit competences	Student's survey

Other (as the proposer wishes to add)	