

NAME OF THE COURSE		DEVELOPMENTAL BIOLOGY				
Code	PMB721	Year of study	2.			
Course teacher	Ivana Bočina, PhD, Full Professor	Credits (ECTS)	3			
Associate teachers	Nives Kević, PhD, Assistant Professor	Type of instruction (number of hours)	P	S	V	T
			30	15		
Status of the course	Mandatory	Percentage of application of e-learning	30%			
COURSE DESCRIPTION						
Course objectives	Adoption and understanding of the basic events during embryonic development of animals and humans and their evolutionary relationship .					
Course enrolment requirements and entry competences required for the course	Competences in General Zoology, Invertebrates, Vertebrates, Histology and Anatomy.					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<ol style="list-style-type: none"> 1. Adoption of the terms important for the embryology of animals and humans and plants. 2. Understanding of the embryonic processes in different groups of animals within the invertebrates and vertebrates 3. Understanding of the embryonic and human fetal development 4. Identification and understanding of the evolutionary link between man and animal groups on the basis of embryonic development 5. Perceiving the similarities and differences between man and animal groups during development 6. Applying knowledge in order to recognize and avoid the harmful effects of the environment on embryonic development 					
Course content broken down in detail by weekly class schedule (syllabus)	<p>Week 1: Introduction to embryology. Developmental biology.</p> <p>Week 2: Embryogenesis in Plants.</p> <p>Week 3: Forms of eggs and their sheaths. Fertilization. Zygote.</p> <p>Week 4: The embryonic development. Cleavage and types of cleavage. Cleavage in sea urchin.</p> <p>Week 5: Cleavage in amphibians, birds and mammals.</p> <p>Week 6: Gastrulation. Creating germ layers and their derivatives. Forming of the primary and secondary coeloms and their importance.</p> <p>Week 7: The creation of the neural tube and the central nervous system.</p> <p>Week 8: Developmental processes in animals: cell interactions, and epithelial-mesenchymal inductive interactions.</p> <p>Week 9: Gametogenesis in humans. The development of male and female gametes. Fertilization. Week 10: The first and second week of development.</p> <p>Week 11: Embryonic period: third to eighth week of development.</p> <p>Week 12: Fetal period.</p> <p>Week 13: Congenital malformations. Teratogenic factors.</p> <p>Week 14: The placenta. Twin pregnancy.</p> <p>Week 15: Special embryology: Development of the skeletal and nervous system.</p>					

Format of instruction	Courses and seminars.
Student responsibilities	Attending courses and taking exams.
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)	Attendance: 0.5 ECTS Learning: 1 ECTS Written exam: 1.5 ECTS
Grading and evaluating student work in class and at the final exam	Students should pass written exam.
Required literature (available in the library and via other media)	Sadler, T.W. (1996) Langmanova medicinska embriologija. Školska knjiga, Zagreb
Optional literature (at the time of submission of study programme proposal)	1. M. J.F. Baressi i S.F. Gilbert (2020) Developmental Biology, 12th ed. Oxford University Press 2. Gilbert, S. F. (2003) Developmental biology. Sinauer Associates, Inc. Sunderland, Massachusetts 3. Saraga-Babić M., Sapunar, D. (1999) Atlas of human embryology. Chronolab AG, Switzerland
Quality assurance methods that ensure the acquisition of exit competences	Personal consultations, surveys, records of attendance at lectures, active participation in courses.
Other (as the proposer wishes to add)	