

Biotechnical Faculty / AGROBUSINESS AND RURAL DEVELOPMENT / BIOTECHNOLOGY IN ANIMAL HUSBANDRY

Course:	BIOTECHNOLOGY IN ANIMAL HUSBANDRY			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
12375	Optional	3	6	3+2+0
Programs	AGROBUSINESS AND RURAL DEVELOPMENT			
Prerequisites	No			
Aims	Getting to know and acquiring knowledge in the field of molecular genetics and biotechnology in animal husbandry, methods and techniques of biotechnology as well as their application in the breeding and breeding of domestic animals.			
Learning outcomes	After successfully completing the course, students will be able to: • Explain the structure and function of nuclear and non-nuclear hereditary material - genomics, • Understands the basic principles of recombinant DNA, IE genetic engineering. • Recognize the role of molecular genetics methods in the characterization and detection of indigenous populations. • Understands and applies different methods of DNA extraction from biological material (blood, hair, etc.) • Explain the importance of molecular markers and describe basic laboratory techniques for their detection. • Be familiar with the principles of applying molecular biotechnology and molecular markers in modern animal husbandry (selection, etc.).			
Lecturer / Teaching assistant	prof. Dr. Bozidarka Marković Milena Đokić, M.Sc			
Methodology	Lectures, theoretical and practical exercises, consultations and other educational content.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Introduction to biotechnology, Biotechnology of reproduction			
I week exercises	ET, MOET, VO			
II week lectures	Animal genome and its structure.			
II week exercises	Primary and secondary structure of DNA			
III week lectures	Structure and organization of genes and proteins			
III week exercises	Exons, introns, chromatin structure			
IV week lectures	Replication, transcription and translation of DNA			
IV week exercises	Enzymes of replication and transcription			
V week lectures	Regulation of gene expression			
V week exercises	Analysis of the main phases of expression regulation			
VI week lectures	Mitochondrial genome, mtDNA			
VI week exercises				
VII week lectures	Colloquium I			
VII week exercises				
VIII week lectures	Recombinant DNA technology			
VIII week exercises				
IX week lectures	Animal cloning, levels of cloning			
IX week exercises				
X week lectures	Transgenic animals and transgenesis			
X week exercises				
XI week lectures	Molecular markers			
XI week exercises				
XII week lectures	Methods of molecular genetics			
XII week exercises				

XIII week lectures	Application of genetic markers in animal husbandry					
XIII week exercises						
XIV week lectures	Colloquium II					
XIV week exercises						
XV week lectures	Application of biotechnology in food production and in general					
XV week exercises						
Student workload						
Per week	Per semester					
6 credits x 40/30=8 hours and 0 minuts 3 sat(a) theoretical classes 0 sat(a) practical classes 2 excercises 3 hour(s) i 0 minuts of independent work, including consultations	Classes and final exam: 8 hour(s) i 0 minuts x 16 =128 hour(s) i 0 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 8 hour(s) i 0 minuts x 2 =16 hour(s) i 0 minuts Total workload for the subject: 6 x 30=180 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 36 hour(s) i 0 minuts Workload structure: 128 hour(s) i 0 minuts (cources), 16 hour(s) i 0 minuts (preparation), 36 hour(s) i 0 minuts (additional work)					
Student obligations						
Consultations	Thursday 11-13h					
Literature	1. Molekulska genetika, Vidović i Stupar (2010), ISBN 978-86-7520-191-5 2. Zapis predavanja Biotehnologije u stočarstvu – prof. Dr Božidarka Marković – Biotehnički fakultet; 3. Biotechnology in Animal Husbandry. Eds: R. Renaveille, A. Burney. Kluwer Academic Publications, Amsterdam 2001. (ISBN 0792368517); 4. Osnovi molekularne biologije, Vera Matić, Biološki fakultet Beograd 5. John G. Vandenberg, Alwynelle S. Ahl, John M. Coffin (2002): Animal biotechnology. B. Marković: autorizovana pisana predavanja, Biotehnički fakultet 2016					
Examination methods	- Regularity of lectures and exercises (0 - 6 points) - I colloquium: (0 - 22 points), written - II colloquium: (0 - 22 points), taken in writing - Final exam: (0 - 50 points), taken orally A passing grade is obtained if at least 50 points are accumulated cumulatively. A student who achieves at least 60% points on both colloquiums can be exempted from taking the final exam, unless he wants a higher grade Grade: number of points: A (≥ 90 to 100 points); B (≥ 80 to < 90); C (≥ 70 to < 80); D (≥ 60 to < 70); E (≥ 50 to < 60); F < of 50					
Special remarks						
Comment						
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points