

Study Programme: Organic Agriculture			
Course Unit Title: GENETICS			
Course Unit Code: 19.ORG006			
Name of Lecturer(s): Sofija Petrović, full professor; Borislav Banjac, associate professor			
Type and Level of Studies: undergraduate			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): winter			
Language of instruction: serbian			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: -			
Course Aims: The course is designed as general genetics and aims to introduce participants to the general principles of inheritance and vertical transmission of genetic information, genetic interactions, cell division and organelles carrying hereditary material, structure and function of genetic material, population laws and genotype and environment and with transplant-induced changes (chimeras, vegetative hybrids).			
Learning Outcomes: The student is trained for further upgrading through master's and doctoral studies for scientific work, for participation in programs of breeding organisms and for the economy, in jobs where it is important to understand the functioning of the hereditary basis of the organism and interaction with the environment.			
Syllabus: <i>Theory:</i> Introduction. Organism and the environment. Cell and chromosome structure. Structure and function of genetic material. Cell division and fertilization. Independent gene separation. Multiple alleles. Non-allelic interaction. Related genes. Gender determination and sex-linked genes. Inheritance of quantitative traits. Species and genus hybridization. Changes in the genome. Genetic laws in the population. Inbreeding. Changes caused by transplantation <i>Practice:</i> Practical classes take place during the exercise program and follow the chapters of the lectures.			
Required Reading: Borojević, S., Borojević, Katarina, Genetika, Univerzitet u Novom Sadu, 1976; Kraljević-Balalić, Marija, Petrović, S., Vapa, Ljiljana, Genetika. Teorijski osnovi sa zadacima, Poljoprivredni fakultet, Institut za ratarstvo i povrtarstvo i PMF, Novi Sad, 1991; Dimitrijević, M., Petrović, Sofija, Genetika populacije. Adaptabilnost i stabilnost genotipa, Poljoprivredni fakultet i Naučni institut za ratarstvo i povrtarstvo, Novi Sad, 2005; Dimitrijević, M., Petrović, Sofija. Genetički modifikovani organizmi. Pitanja i dileme, Zelena mreža Vojvodine, Novi Sad, 2004			
Weekly Contact Hours:	Lectures: 45	Practical work: 30	
Teaching Methods: Classes are conducted using modern techniques. The theoretical part of the teaching is performed in the faculty classrooms. All lectures are computer processed and presented. The practical part of the classes takes place through classroom work in an air-conditioned room equipped for that, with individual seats for students (40 seats), which is equipped with a computer, video beam and microscopes.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	30
Practical work	2,5	oral exam	30
Preliminary exam(s)	30	
Seminar(s)	2,5		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			