

Study program: Organic crop and livestock production			
Type and level of study: Bachelor academic studies			
Course Title: BASICS OF GENETICS			
Professors: Dr. Perović G. Dragan, Full Professor			
Status: Compulsory, semester III			
ECTS: 8			
Prerequisite: None			
The goal of the course The aim of the course is to provide students with the knowledge of the basics of science of inheritance, the dogma of transfer of genetic information in the process of transcription and translation, determination of the expression of genetic basis for inheritance of quantitative and qualitative traits. The course should enable students to acquire knowledge of the principles of inheritance of traits, the regulation of gene activity, the sources of genetic variability, the methods for determining the mode of inheritance of traits in the offspring, and introduction to new scientific disciplines such as genomics and comparative genomics.			
The outcome of the course Students learn the basics of genetics since the same holds a central position in the doctrine of organic agriculture. After successfully completed the pre-exam and exam commitments student can critically compare conventional and organic farming, as it has the same fundamental knowledge in the following areas: Basic characteristics of genetic material (vertical and horizontal gene transfer), differences in the inheritance of quantitative and qualitative traits, differences in the control of gene expression, genetic variability and ways of exploitation, biotic and abiotic interactions, genome size and type of sequences in the genome by comparative genomic, relationship and exploitation of variability in the wild relative species.			
Syllabus <i>Theoretical study</i> – It includes the following methodological units: transcription and translation, molecular genetics, cytoplasm inheritance and cytogenetic, genetics of resistance to diseases and pests, quantitative genetics, genomics and comparative genomics and methods of breeding and selection. <i>Practical lessons</i> – Interactive teaching with laboratory and field exercises, discussions with experts on certain topics, essay.			
Literature Lewin B. Genes VII, Oxford University Press, UK, 1997. Acquaah G, Principles of Plant Genetics and Breeding, Wiley-Blackwell, 2014 and articles from: Science, Nature Genetics, Genetics, Plant Cell, PlosONE, The Plant genome			
Number of lectures: 5			Other Lessons
Lectures: 3	Practices: 2	Other forms of teaching:	
Teaching methods: Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Score (maximum 100 points)			
Pre-commitments	Points	The final exam	Points
Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	50
Preliminary exam	20		
Seminars	10		
<i>Total</i>	50		50