

**Табела 5.2** Course specification

**30FM3144**

<b>Curriculum:</b> Phytomedicine			
<b>Type and level of study:</b> Basic academic studies, the first level			
<b>Subject of course:</b> Genetics with Plant Breeding Fundamentals			
<b>Teacher:</b> dr Miodrag D. Dimitrijević, full professor; dr Sofija R. Petrović, full professor; dr Borislav M. Banjac, assistant professor			
<b>Course status:</b> Elective			
<b>Credits:</b> 6			
<b>Conditional:</b> None			
<b>Course aims:</b> The course is designed as a logical combination of general genetics and plant breeding fundamentals and aims to familiarize participants with the general principles of inheritance, transfer of genetic information and the creation of new genetic variability through general genetics fundamental studies, as well as the practical application through the basic principles and methods of plant breeding.			
<b>Course outcome:</b> Student should be given a basis on which could be able to upgrade their abilities through the master's and doctoral programs for scientific work, participation in breeding programs of organisms and for the economy, in all the jobs that require understanding of the functioning of the hereditary basis of organisms, as well as, genotype by environment interactions in order to obtain new economically exploitable genetic variability within breeding programs.			
<b>Course content:</b> <i>Theoretical lectures:</i> Introduction; Cell division; Modes of reproduction and fertilization systems in plants; Chromosomes and chemical bases of heredity; The mechanism of inheritance and hybridization; Changes in the number and structure of chromosomes; Mutations in plant breeding; Inbreeding and heterosis; Chromosomal and genetic engineering; The genetic base of breeding self-pollinated and cross-pollinated plants; The genetic base of breeding for resistance to pathogens and insects; Methods of selection of plants; Novel varieties releasing and production of certified seed <i>Practical teaching: Exercise, Other modes of teaching, Study research work:</i> Cell division and fertilization; The life cycle of eukaryotes and prokaryotes; Chromosomes; The structure and function of the gene; Gametogenesis; Independent gene segregations; The gene interactions; Genetic linkage and crossing over; <i>Species</i> and <i>genus</i> hybrids; Changes in the number of chromosomes; Changes in the structure of chromosomes; Inbreeding and heterosis; Population and quantitative genetics			
<b>Literature:</b> <b>Fundamental literature</b> 1. Borojević, Slavko, Borojević, Katarina 1976: Genetika, Poljoprivredni fakultet, Novi Sad. 2. Borojević, Slavko 1981: Principi i metodi oplemenjivanja biljaka. Publ. WU "Radivoj Ćirpanov", Novi Sad 3. Kraljević-Balalić, Marija, Petrović, Stevan, Vapa, Ljiljana 1991: Genetika – teorijski osnovi sa zadacima. Poljoprivredni fakultet, Institut za ratarstvo i povrtarstvo i PMF, Novi Sad. 3. Dimitrijević, Miodrag, Petrović, Sofija 2005: Genetika populacije. Adaptabilnost i stabilnost genotipa. Izd. Poljoprivredni fakultet, Novi Sad, Naučni institut za ratarstvo i povrtarstvo, Novi Sad <b>Additional literature</b> 1. Marinković, M., Tucić, N., Kekić, V. 1982: Genetika, Naučna Knjiga, Beograd 2. Dimitrijević, Miodrag, Petrović, Sofija 2004: Genetički modifikovani organizmi – pitanja i dileme. Zelena mreža Vojvodine, Novi Sad. 3. Bošković, Jelena, Isajev, V. 2007: Genetika. Megatrend univerzitet, Beograd			
<b>Lecture hours</b>			Other hours
Lectures: 30	Exercises: 30	Other forms of lecturing: 0	Scientific research work: 0
<b>Teaching methods</b>			

Teaching is done using modern techniques. Theoretical part of the training is conducted in a Faculty lecture halls. All lectures are computer processed and presented. The practical part of the course takes place in cabinetmaking work in adapted air-conditioned room, with individual seats for students (40 seats), which is equipped with a computer, video beam, overhead projectors and microscopes.

**Evaluation of knowledge (maximum 100 points)**

<b>Pre-exam commitments</b>	<b>Points</b>	<b>Final exam</b>	<b>Points</b>
Activity during lectures	5	Written exam	30
Practical classes	2.5	Oral exam	30
Colloquium	3 x 10	.....	
Seminar	2.5		

Method of testing knowledge could be different, and in the table above just a few options are given: (written exams, oral exam, project presentations, seminars, etc .....