Course Unit Descriptor

Study Programme: Soil, plant and genetics
Course Unit Title: Principals of Experimental Work
Course Unit Code: 19MZBZI00O001
Name of Lecturer(s): dr Sofija R. Petrović; dr Borislav M. Banjac
Type and Level of Studies: Master academic studies, second degree academic studies
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: 5
Prerequisites: none
Course Aims: Aim of this course is to present students procedures and rules of an experimental scientific work.
Learning Outcomes: Student who has finished experimental scientific work master course will be enabled to participate in planning and setting of experimental fields, processing and discussing experimental field results and making conclusions about them.
Syllabus: *Theory* **1.) Importance of scientific work** (subject of science, methods of science, what is scientific work, planning of scientific researches, coordinating with scientific researches); **2.) Choosing scientific work topic** (finding topic of research, ideas and actuality of assignment, name of the topic, independent and team work, scientific school; **3.) Methods of research** (scientific methods and scientific facts, advantages of experiments, measuring, scientific explanation, scientific hypothesis, scientific law and scientific theory); **4.) Literature study** (literature study technique, collecting of new literature, literature display); **5.) Creating work hypothesis** (assignment idea, level of topic research, creating of work hypothesis); **6.) Planning of experiment** (experiment goal, sources of variance, factors and treatments in research, collecting, size and type of sample, plot size, material homogeneity, basic conditions for succesfull experiment, experiment results evaluation); **7.) Conducting of experiments** (choice and use of instruments, conducting experiments, processing experiment data, unsuccesfull experiment and weaknesess of experimentator); **8.) Data processing** (statistical data analysis, data transformation, calculating lost data, causally consequencal relationships, computer programs); **9.) Displaying data** (principle of informativity and clarity principle, tabular data displaying, graphical data displaying, computer programs); **10.) Principles and methods of conclusion** (direct and indirect conclucion, inductive and deductive conclusion); **11.) Research data processing** (concept of writing a scientific work, basic chapters of a scientific work, literature referencing, style and language of writing); **12.) Preparing scientific work for printing 13.) Writing reviews 14.) Revial presentation** *Practice* Exercises, other forms of classes, academic experimental work: Practice is taking place during exercises program and follows lecture chapters.
Required Reading: Borojevic, S.: Scientific work methodology. Ćirpano, Novi Sad, 1978; Šomođi, Š., Novković, N., Kraljević-Balalić Marija, Kajari, Karolina: Uvod u naučni metod. Univerzitet u Novom Sadu, Poljoprivredni fakultet, Novi Sad, 2004

Weekly Contact Hours:	**Lectures:** 30	**Practical work:** 0

Teaching Methods: Teaching is conducted with use of modern technology, theoretical part of lectures is taking place in

faculty classrooms. All lectures are computer processed and presented. Practical part of lectures is taking place in cabinets equipped with climate control units, with individual seats for students (40 seats), classrooms are equipped with PC, projector, overhead projector 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)	3x10	…….	
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.