Study program: REPRODUCTIVE BIOLOGY

Course title: Statistical software

Teacher: Vladimir Kostić

Course status: elective

ECTS: 5

Requirements: -

Course objectives

Acquiring of basic knowledge and skills in statistics using statistical software for qualitative setting of hypothesis, sample evaluation, analyses of the results and conclusions.

Learning outcomes

Succesfull student , at the end of the course, will be able to use statistical software and perform basic and some advanced statistical analysis, for data presentations and research results obtained by experimental laboratory methods.

Syllabus

Theoretical instruction

Data matrices. Data input control, error corrections, archiving and data pre-procesing. Basic statistical methods in spreadsheet software, descriptive statistics, pivot tables, filtrations based on different criteria, basics of inferential statistics, intervals of confidence, correlation models, regression models, basic statistical tests. Introduction to R programing. Basic statistical analysis in R language. Multivariate statistics in R. Factor analysis. Principal component analysis. Generalized models.

Practical instructions:

Practical instructions follow the theoretical one. All the content will be implemented using computers

Literature

1. Dalgaard, P. Introductory Statistics with R, Springer. 2002 ISBN 0-387-95475-9
2. Bolker B., Ecological Models and Data in R, Princton University Press, 2007.
3. Matloff N., The Art of R Programming, No Starch Press, 2011.

Weekly teaching load	**Lectures:** 2	**Practical lectures:** 2+0+0

Teaching methods

Lectures, exercises, individual work (one student per computer)

Evaluation of knowledge (maximum score 100)

Pre-exam obligation	points	**Final exam**	points
Student engagement in lectures		Final test	
Practical lectures		Oral exam	40
Tests	60	.....	