Course Unit Descriptor

Study Programme: *ORGANIC AGRICULTURE*

Course Unit Title: Applied mathematics

Course Unit Code: 19.ORG03S

Name of Lecturer(s): Full professor Snežana Matić-Kekić, Associate professor Nebojša Dedović

Type and Level of Studies: Undergraduate academic studies

Course Status (compulsory/elective): elective

Semester (winter/summer): winter

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated: 6

Prerequisites: -

Course Aims:

To acquaint students with basic characteristics of mathematical modeling of economic phenomena and their exploitation, as well as with active application of the elements of financial mathematics in economic practice.

Learning Outcomes:

Student will be trained for mathematical modeling of economic phenomena and their exploitation, as well as for active application of elements of financial mathematics in economic practice.

Syllabus:

Theory

- settings of mathematical models for problems from: systems of linear equations and linear function optimization under the set of linear constraints
- matrix calculations (operations, determinant, regular matrix)
- tools for solving mathematical models: Gaussian elimination, Cramer's rule, inverse matrix, simplex method, Vogel's approximation method and MODI methods for solving the transportation problems.
- financial mathematics: percentage and per mille calculations, compound interest calculations, conform interest rate, savings account and loan repayment account
- ratio and proportion, mixing calculations, chain calculations, profit sharing calculations, direct and inverse proportion, time series
- combinatorics: combinations, variations and permutations, binomial coefficients

Practice

Solving the problems rose from the theory.

Required Reading:

1. Matić-Kekić, S., Applied mathematics for students of biological sciences (in Serbian), Faculty of Agriculture, University of Novi Sad, Serbia, 2015.
2. Konjik, S., Dedović, N., Mathematics - Math Problems for Agricultural Majors (in Serbian), 2nd edition, Faculty of Agriculture, University of Novi Sad, Serbia, 2011.

Weekly Contact Hours:	**Lectures:** 2	**Practical work:** 2

Teaching Methods:

Theory and practical classes, consultations if needed.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	20
Practical work	5	oral exam	20

Preliminary exam(s)	50	…….	
Seminar(s)			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			