Course Unit Descriptor

Study Programme: *AGRICULTURAL ENGINEERING AND INFORMATION SYSTEMS*
Course Unit Title: Mathematics
Course Unit Code: 19.URVO01
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): compulsory
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 train the students to exam the functions, to draw the elementary function and to learn the applicability of the integral calculus and derivative calculus.
Learning Outcomes:
Student will be trained to exam the functions and to apply integral and derivative calculus in practice.
Syllabus:

Theory

- Real functions. Linear, quadratic, exponential, logarithmic, trigonometric functions and degrees.
- Sequences and limit values. The limit values and the asymptote function.
- The first and higher-order derivative of the functions of one independent variable.
- Domain, zero of the function, increase and decrease, extreme values, inflection points, concavity, convexity of real functions of one real variable.
- The conditional extremes of functions of two independent variables.
- Economic function: interval of profitability, profits, demand, supply, revenues, costs, flexibility in the point and its interpretation.
- Integral calculus: define and indefinite integrals, primitive functions, integral characteristics, integration by substitution, the method of partial integration and the integration of rational functions. Application of definite integrals.
- ODE first order: linear, homogeneous, Bernoulli, total differential and separated variables. Homogeneous and non-homogeneous linear ODE second order with constant coefficients.

Practice

Solving the problems rose from the theory.

Required Reading:			
1. Matić-Kekić, S., Mathematics 1 - for the student of technical courses (in Serbian), Faculty of Agriculture, University of Novi Sad, Serbia, 2016. 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:** 3		**Practical work:** 3
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	50

Practical work	5	oral exam	40
Preliminary exam(s)		…….	
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.			