Course Unit Descriptor

Study Programme: Agricultural engineering and information systems

Course Unit Title: *Strength of Materials and Dynamics*

Course Unit Code: 19.URV008

Name of Lecturer(s): Dragi M. Radomirović

Type and Level of Studies: Undergraduate

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): summer

Language of instruction: Serbian

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

Number of ECTS Allocated: 6

Prerequisites: None

Course Aims:

Introducing students to the stresses and strains of deformable bodies due to load. Introducing students to the principles of dynamics and their applications.

Learning Outcomes:

The student's ability to recognize the problem of strength of materials or dynamics and to apply appropriate theoretical knowledge can solve it.

Syllabus:

Theory: Stress and strain in tension and compression, Statically determinate and indeterminate problems in tension and compression, Stresses and deformations and calculation of girders exposed to shear and torsion, Geometrical characteristics of straight sections, Stress and strain in bending, Static indeterminate beams exposed to bending, Calculation of girders exposed to buckling, Newton's second law, Kinetic energy, linear momentum and angular momentum, Work, potential energy and power, Theorems of a particles dynamics, System dynamics, System dynamics theorems, Rigid body dynamics.

Practice: Exercises, Other forms of teaching, Study research work, Application of theoretically acquired knowledge to specific problems of strength of materials and dynamics

Required Reading:

1. Mandić Jovan, 1987. Strength of materials (in Serbian). Naucna knjiga, Belgrade
2. Maretić Ratko, 2012. A Collection of solved problems in strength of materials (in Serbian). Faculty of Technical Sciences, Novi Sad
3. Djukic Dj.S. Atanackovic T.M. Cveticanin L.J. 2005. Mechanics (in Serbian). Faculty of Technical Sciences, Novi Sad

Weekly Contact Hours: 3	**Lectures: 4**	**Practical work: 7**

Teaching Methods:
Lectures, Practical classes, Consultations.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	30
Practical work	5	oral exam	
Preliminary exam(s)	60	…….	
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.