CourseUnit Descriptor

Study Programme: Power, Electronic and Telecommunication Engineering			
Course Unit Title: Mechanics			
Course Unit Code: E104			
Name of Lecturer(s): Damir Mađarević			
Type and Level of Studies: Bachelor level			
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: 5			
Prerequisites: None			
Course Aims: Getting introduced to basic concepts and principles of mechanics as a part of physics and as a fundamental engineering discipline. Mastering basic methods of the analysis and solution of engineering problems.			
Learning Outcomes: At the end of the course students will be capable to perform a rational approach to the problems of classical mechanics. This assumes formulation of physical and mathematical model, application of appropriate mathematical methods (differential and integral calculus) for its solution, as well as the analysis of the results in the sense of their mathematical and physical contents. This knowledge is supposed to be used as a conceptual basis in other engineering disciplines.			
Syllabus: Units of measurement, physical measurement, and vectors. Rectilinear motion of a particle. Curvilinear motion of a particle. Newton's law of motion. Application of Newton's laws. Work and kinetic energy. Potential energy and conservation of energy. Momentum, impulse and collision. Rotational motion of rigid bodies. Rotational dynamics. Equilibrium and elasticity. Gravitation. Oscillatory movement. Computer simulation of dynamic systems.			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours:4	**Lectures:2**	**Practicalwork:2**	
Teaching Methods: Lectures comprise theoretical background of certain topic, as well as illustrative examples. Exercise classes are consisted of the application of theoretical knowledge and development of the methods of analysis to selected problems. Wherever it is possible, the problems of mechanics are illustrated by computer simulations, or supported by video clips of real processes.			
Knowledge Assessment(maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points

Group Assignment		Examination Assignment	
Exercises			
Test			
Test			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, Project presentation ,seminars ,etc.			