

Course Unit Descriptor

Study Programme: Mechanization and Construction Engineering			
Course Unit Title: Mechanical Elements			
Course Unit Code: M202			
Name of Lecturer(s): Milan Rackov			
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: 9			
Prerequisites: None			
Course Aims: To enable students for independent designing of mechanical elements and systems.			
Learning Outcomes: Acquired knowledge is used in further education related to professional courses.			
Syllabus: General definition of mechanical elements. Standardization and standard numbers. Surface roughness. Tolerances. Temperature influence on contiguous changes. Measurement chains. Fundamental mechanical characteristics of mechanical materials. Load of mechanical elements (types, origin, classification, and application in time). Behaviour of mechanical elements under load (tension, stress and strain). Ideal and real materials. Stress concentration. Static strength. Material wear. Dynamic persistence, permanent or temporary limitations, in constant and alternating load regimes. Influences on dynamic persistence of mechanical elements. Working, critical allowed and calculated stresses. Safety of mechanical elements. Screw relations. Group screw relations. Thread transmitters. Rivets. Mechanical transmitters. Friction pairs. Gear pairs. Worm pairs. Chain pairs. Shafts, spindles and pins. Elements for the connection of shafts and heads. Roller bearings. Sliding bearings. Couplings. Springs.			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours: 8	Lectures:	Practical work: 4	
Teaching Methods: Lectures, auditory (A), computing (N) and graphical (G) practical classes and consultations.			
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.			