UNIVERSITY OF NIŠ

Course Unit Descriptor	**Faculty**	Faculty of Mechanical Engineering

GENERAL INFORMATION

Study Program	**Mechanical Engineering**
Study Module (if applicable)	-
Course Title	Machine elements 1
Level of Study	☒ Bachelor ☐ Master's ☐ Doctoral
Type of Course	☐ Obligatory ☒ Elective
Semester	☒ Autumn ☐ Spring
Year of Study	II
Number of ECTS Allocated	6
Name of Lecturer/Lecturers	Dragan S. Milčić
Teaching Mode	☒ Lectures ☐ Group tutorials ☐ Individual tutorials ☐ Laboratory work ☒ Project work ☒ Seminar ☐ Distance learning ☐ Blended learning ☐ Other

Purpose and Overview (max. 5 sentences)

To familiarize students with theoretical basis, constructional forms, calculation of machine elements, production, the functioning and aplication of machine elements

Syllabus (brief outline and summary of topics, max. 10 sentences)

Introduction to the design process. Basics of designing machine elements. The definition of machine elements. Preferred numbers fits and tolerance. Calculation of load capacity of machine elements. Load machine elements. Direct, bending and torsional stress equations. Calculation of principle stresses for varios load combinations. Factor of safety – theories of failure. Design based on strength and stiffnes. Stress concentration.
Springs. Design of various types of springs, optimization of helical springs. Elements for rotary motion. Axles and shafts. Rolling bearings. Journal bearings. Design of hydrodynamic journal bearings. Design of hydrostatic journal bearings. Threaded fastners - Design of bolted joints.

Language of Instruction

☒Serbian (complete course)   ☐ English (complete course)   ☐ Other _____ (complete course)

☐Serbian with English mentoring   ☐Serbian with other mentoring _____

Assessment Methods and Criteria

Pre exam Duties	Points	Final Exam	Points
Activity During Lectures	10	**Written Examination**	50
Practical Teaching	10	**Oral Examination**	0
Teaching Colloquia	30	**Overall Sum**	100

*Final examination mark is formed in accordance with the Institutional documents