SYLLABUS

1. Course title:

Machine elements I

2. Code:

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

Mandatory

6. Prerequisites:

7. Class restrictions:

Students of the second year of study at the Faculty of Mechanical Engineering (I cycle of studies)

8. Duration / semester(s):

I **III**

9. Weekly contact hours and student workload:

	Semester (1)	Semester (2)	(for two-semester courses)	Workload: (hours)
9.1. Lectures	3		Classes:	56,25
9.2. Seminars	2		Individual work:	119,6
9.3. Laboratory/Practice classes	0		In total:	175,9

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Production engineering, Energy and thermo-fluid engineering, Mechatronics

12. Lecturer:

Dr. sci. Edis Nasić, Assistant professor

13. Course aims:

Training of students for the construction of machine elements and systems.

14. Learning outcomes:

The acquired knowledge will be used in further education within the other subjects.

15. Course content:

1. Single-cycle and multi-cycle work tension changes.
2. Tension under static and dynamic loads.
3. Tolerance of longitudinal measures, shapes and position of quality.
4. Rivets Assemblies and Calculation of rivets elements.
5. Welding and calculation of welded structures.
6. Pressed joint, types and markings.
7. First partial test
8. Tension diagram for Screw Connections. Workload of screw connections.
9. Longitudinal wedges with a slope. Longitudinal wedges without inclination.
10. Connections with conical rings.
11. Connections with spiral elements and connection with bolts.
12. Springs and helical flex springs.
13. Cylindrical coil, conical coil and plate springs.
14. Shafts and Shaft Component.
15. Second partial test.

16. Learning methods:

Lectures, auditorial exercises, assignments, consultations.Interactive communication with course participants.

17. Assessment methods:

The methods of knowledge assessment are:
• 2 tests (tasks),
• Final written or oral exam
• Make-up exam; theory and task test

Two tests will be held during the semester, each containing two calculation tasks. After achieving the minimum required number of points through attendance and tests, the student takes the final exam, which consists of a written or oral part (theory). Before the final exam, a student who did not achieve 50% of the points on any of the tests may take a make-up exam. In the oral final exam, the student answers only theoretical questions.

Grading system: (5) + (25) + (25) + (45) = (100) points.

Grade	Descriptive	Letter	For the number of points achieved
5 (five)	"does not meet the minimum criteria"	F,FX	<54 points
6 (six)	"meets the minimum criteria"	E	54-64 points
7 (seven)	"generally good, but with significant shortcomings"	D	65-74 points
8 (eight)	"average, with noticeable errors"	C	75-84 points
9 (nine)	"above average, with some errors"	B	85-94 points
10 (ten)	"exceptional success with no errors or with minor errors"	A	95-100 points

18. Assessment components:

Students mark is based on the total number of points a student earned by completing pre-exam requirements and exams, according to the quality of the acquired knowledge and skills, and contains a maximum of 100 points, and is determined according to the following scale:

Student obligation	points
The presence on lectures, exercises and activity	5
2 pre-exam test	2x25
(pre-exam requirements, total)	(55)
Final exam: - written (theory)	45
Total: 100 points	

19. Mandatory reading list:

1. Muratović P.: Mašinski elementi I, štamparija Lukavac, 1997.
2. Karl-Heinz D.: Maschinenelemente - Funktion, Gestaltung und Berechnung 18., aktualisierte Auflage, 2011.

20. Additional reading list:

1. D.J. Vitas, M.D. Trbojević: Mašinski elementi I, Naučna knjiga, Beograd, 1979.
2. D.J. Vitas, M.D. Trbojević: Mašinski elementi II, Naučna knjiga, Beograd, 1979.
3. Karl-Heinz D.: Elementi strojeva, Tehnička knjiga, Zagreb.

21. Web sources:

www.ganter-griff.de
www.KISSsoft.AG
www.skf.de

22. Applicable from the academic year:

2025/26

23. Adopted in the Faculty/Academy session:

29.04.2025